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architectural

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In-Sink-Erator Mfg. Co.....23a/9a
Inclinator Co. of America.....32a/5
Independent Lock Co.,
–see Lockwood Hardware Mfg. Co.....17b/3
Indiano Limestone Institute.....4a/15
Inland Steel Co.....6c/4
Inland Steel Products Co.
•metal lath.....12a/3
•roof decks.....3c/5
Insulite Div. Minnesota & Ontario Paper Co.....10a/10
Integro, Inc.....13a/11
Interchemical Corp.,
–see Standard Coated Products.....13k/2
Internationol Boiler Works Co.....28d/4
International Bronze Tablet Co., Inc.....6e/9
International Business Machines Corp.....31c/1
Internotional Chimney Corp.....28g/4
International Steel Co., (Revolving Door Div.).....15d/2
Irving Subway Grating Co., Inc.....13o/4

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Jockson, Wm. H., Co.....28g/7
Jockson & Church.....28e/6
Jamestown Metal Corp.....15a/11
Jamestown Metal Products, Inc.....22g/2
Jamestown Speciolty Mfg. Co., Inc.,
–see Croft Steel Products, Inc.....16a/10
Jennison-Wright Corp.....13g/5
Jewett Refrigerator Co., Inc.....22b/5
Joanna-Western Mills Co.....18d/7a
Johns-Manville
•ocoustical moterials.....11a/5
•asbestos flexboard sheets.....12b/1a
•asphalt tile flooring.....13d/4
•built-up roofing.....8a/5
•home insulation.....10a/12
•partitions and walls.....21a/3
•shingles 8b/4
Josam Mfg. Co.....27e/4
Joy Mfg. Co.....28b/10
Just Mfg. Co.....23a/10

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K-M Building Products Co.....12a/4
Kalman Floor Co., Inc.....13c/9
Kone Mfg. Corp.....18a/6
Kaufmann Corp. 16a/2i
Kaustine Co., Inc.
•furnaces and air conditioning.....28e/7
•sewoge disposal.....27f/1
Kawneer Co.
•oluminum 6a/2
•awnings 18e/3
•doors 15a/12
•light diffusing ceilings.....30a/12
•store front construction.....20/5
Keasbey & Mattison Co.....8b/5
Kedmont Mfg. & Waterproofing Co.....9a/10a
Kelley Island Lime & Transport Co.....11a/6
Kellogg-Mann Corp. 25a/2o
Kennecott Copper Corp.,–see Chase Brass &
Copper Co., Inc.....8c/4; 13c/1; 18a/5; 26a/2
Kennedy, David E., Inc.....13d/5
Kernchen Co.,–see Arex Co.....19b/3
Kerner Incinerator Co.,
–see Morse Boulger Destructor Co.....25a/3
Kernerator Div.,–see Morse Boulger Destructor Co..25a/3
Kerrigan Iron Works, Inc.....13a/5
Ketcham, G. M., Mfg. Corp.....24c/11
Kewanee Boiler Corp., (Div. American Radiator &
Standard Sanitary Corp.).....28d/5
Keystone Varnish Co.....14/7
Kimberly-Clork Corp.....10a/13
Kinnear Mfg. Co.....15e/3
Kitchen Maid Corp.....23a/11
Klein, J. B., Iron & Foundry Co.,
–see Robberson Steel Co.....1b/6
Kleistone Rubber Co., Inc.....13e/8
Kloes, F. J., Inc.,–see New York Awning Co., Inc...18e/4
Knape & Vogt Mfg. Co.....17b/13
Knapp Bros. Mfg. Co.....12a/4a
Knight, Maurice A.....26b/3
Koppers Co., Inc.
•built-up roofing.....8a/6
•wood preservatives.....5d/4a

Korfund Co., Inc. 11c/1
Kuhls, H. B. Fred 9a/11

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LCN Closers, Inc. 17b/10
Laclede Steel Co. 3d/5
Lally Column Co. 3d/6
Lamson Corp. 32d/1
Lastik Products Co., Inc. 3c/16
Lawrence Steel Co. 15e/4
Lawson, F. H., Co. 24c/12
Leader Electric Co. 30a/13
Leavitt Corp. 22f/2
Levow, David 8d/2
Lexington Supply Co. 9a/12
Libbey-Owens-Ford Glass Co.
•*glass* 7a/2
•*glass doors* 15b/1
•*structural glass* 13b/11
Lingo, John E., & Son, Inc. 6f/3
Lith-I-Bar Co. 3d/7
Lizzola, A., Co., Inc.,
–see Manhattan Terrazzo Brass Strip Co., Inc. 13c/2
Lockport Cotton Batting Co. 10a/14
Lockwood Hardware Mfg. Co.,
(Div. Independent Lock Co.) 17b/3
Louisiana Concrete Products, Inc.,
–see Alabama Cemet Tile Co. 3c/12
Louisville Cement Co., Inc. 4e/1
Ludowici-Celadon Co. 8b/8
Lumite Div.,–see Chicopee Mfg. Corp. 18a/8
Lundell-Eckberg Mfg. Co., Inc.
–see Croft Steel Products, Inc. 16a/10
Lyon Metal Products, Inc. 22c/4

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Maas Organ Co. 22e/5
MacArthur Concrete Pile Corp. 2a/2
Macomber Inc. 3d/8
Mahon, R. C., Co.
•*metal panels and siding* 8c/7
•*rolling steel doors* 15e/5
•*roof decks* 3c/6
Majestic Co. 28g/8
Manhattan Terrazzo Brass Strip Co., Inc. 13c/2
Many, B. J., Co., Inc. 1b/5
Maple Flooring Mfrs. Assn. 13g/6
Marble Institute of America, Inc. 4a/8
Market Forge Co. 22b/6
Marmet Corp. 7c/5
Marsh Wall Products, Inc. 13i/8
Martin Fireproofing Corp. 3c/17
Martin-Parry Corp. 21a/4
Maryland Machine & Foundry Works, Inc.,
–see Duvinage Spiral Stair Div. 6g/1
Masonite Corp. 13i/9
Master Builders Co. 9a/13
Master Metal Strip Service, Inc. 17a/5
Mastic Tile Corp. of America 13d/6
Masury-Young Co. 13h/2
Matot, D. A., Inc. 32a/6
McDonald Mfg. Co. 29c/3
McDonnell & Miller, Inc. 28c/4
McGraw Electric Co., (Clark Water Heater Div.) 27a/4
McIntire, F. N., Brass Works 22h/7
McKee Door Co. 15g/5
McKinney Mfg. Co. 17b/8
Medart, Fred, Mfg. Co.
•*basketball backstaps, etc.* 22f/1
•*lockers and wardrobes* 22c/5
Medusa Portland Cement Co. 4e/2
Mengel Co.,
•*plywood* 5b/3
•*wood doors* 15c/5
Mercoid Corp. 28c/5
Mesker Bros. 16a/22
Metal Products Corp. 17a/9
Metal Tile Products, Inc. 13b/7
Miami Cabinet Div., Philip Carey Mfg. Co. 24c/13
Mid-West Acoustical & Supply Co. 11b/3
Midwest Mfg. Co. 23a/12
Milcor Steel Co.,
–see Inland Steel Products Co. 3c/5; 12a/3
Miller Metal Products, Inc. 23a/13
Mills Co.
•*office partitions* 21a/5
•*toilet partitions* 21b/4
Milwaukee Stamping Co.
•*hinges* 17b/9
•*shower compartments* 24b/2
•*toilet partitions* 21b/5
Minnesota & Ontario Paper Co.,–see Insulite Div. 10a/10
Minwax Co., Inc.
•*waterproofing* 9a/14
•*wood finishes* 14/9
Miracle Adhesives Corp. 13J/3
Mississippi Glass Co. 7a/3
Mitchell Mfg. Co. 30a/14
Mitchell-Rand Mfg. Co. 8d/3
Mo-Sai Associates 4b/2
Modern Venetian Blinds, Inc. 18d/4
Modine Mfg. Co. 28d/13
Moeschl-Edwards Corrugating Co., Inc. 15e/6
Mohawk Carpet Mills Inc. 13f/1
Monarch Elevator & Machine Co. 32a/7
Monarch Metal Weatherstrip Corp. 18b/5
Montgomery Elevator Co. 32a/8
Moore, P. O., Inc. 17b/1
Morse Boulger Destructor Co., (Kernerator Div.) 25a/3
Morse Cement Tile Co. 3c/18
Mosaic Tile Co. 13b/2
Mosler Safe Co. 22a/9
Moulding, Thos., Floor Mfg. Co. 13d/7
Mueller, L. J., Furnace Co. 28e/7a

Mueller Brass Co.,
(Streamline Pipe & Fittings Div.).....26a/7
Mullins Mfg. Corp.....23a/14
Multiscope, Inc.....32a/9
Mundet Cork Corp.....10b/4
Murphy Door Bed Co.....22i/2
Murray Tile Co., Inc.....13b/3
Mutschler Bros. Co.....23a/15
Myers, F. E., & Bro. Co.....27d/2

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Nailock Steel Div.,–see Sanymetal Products Co., Inc.11b/1
Natcor 20/6
National Assn. of Ornamental Metal Mfrs.....6e/9a
National Building Granite Quarries Assn., Inc..... 4a/5
National Chemical & Mfg. Co.....14/10
National Electric Products Corp.....29b/2
National Fireproofing Corp..... 4d/8
National Fireworks, Inc.....16a/23
National Gypsum Co.
•*lath, plaster, wallboard and lime*.....12b/2
•*roof decks*.....3c/10
•*sound control*.....11a/7
National Lead Co..... 14/11
National Mfg. Co.....15g/5a
National Oak Flooring Mfrs. Assn.....13g/7
National Radiator Co.....28d/6
National Steel Corp.,–see Great Lakes Steel Corp.. 3d/4
National Steel Partition Co., Inc.....21a/6
National Store Fronts..... 20/7
National Terrazzo & Mosaic Assn., Inc.....13c/3
Natural Slate Blackboard Co.....22d/3
Nesbitt, John J., Inc.,
–see Webster, Warren, & Co.....28c/9
New Castle Products.....15a/13
New England Fibre Co.....10a/14a
New Rochelle Coal & Lumber Co.,
–see Nuroco Woodwork Mfg. Div..... 5c/3
New York Awning Co., Inc.....18e/4
New York Silicate Book Slate Co., Inc.....22d/4
Newman Brothers, Inc.....6e/10
Nichols Wire & Aluminum Co.....8c/7a
North American Cement Corp..... 4e/3
North American Iron & Steel Co., Inc.
•*flagpoles* 6f/4
•*rolling doors* 15e/7
North Carolina Granite Corp..... 4a/6
Norton Co.....13c/4
Nuroco Woodwork Mfg. Div., New Rochelle
Coal & Lumber Co..... 5c/3

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O'Brien Bros. Slate Co., Inc..... 8b/9
O'Brien Corp.....14/12
O'Connor, Thomas, & Co., Inc..... 1a/4
Ohio Chemical & Mfg. Co.....22g/2a
Okonite-Callender Cable Co., Inc.
–see Okonite Co. 29b/3
Okonite Co.....29b/3
Olson, Samuel, Mfg. Co., Inc.....23b/4a
Onan, D. W., & Sons, Inc.....29a/7
Orchard Bros. Inc.,–see Aluminum Awning Co.....18e/1
Otis Elevator Co.....32a/10
Overhead Door Corp.....15g/6
Overly Mfg. Co.
•*doors* 15a/14
•*sheet roofing*..... 8c/8
Owens-Corning Fiberglas Corp.
•*air filters*.....28b/2
•*insulation* 10c/1
Owens-Illinois Glass Co.,
–see American Structural Products Ca.....3c/23; 7c/1
Oxychloride Cement Assn., Inc.....13c/10

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Pacific Lumber Co.....10a/15
Pacific Steel Boiler Div.
United States Radiator Corp.....28d/7
Paddock Pool Equipment Co..... 22f/5
Page Fence Assn.....21g/3
Paine Lumber Co., Ltd.....15c/7
Para Corp. 15c/7a
Paragon Paint & Varnish Corp..... 14/13
Parker, Charles, Co.....24c/14
Parsons Co.....23a/16
Patterson-Kelley Co., Inc.....27a/5
Patterson-Sargent Co.....14/14
Pauly Jail Building Co.....22h/2
Payne, F. S., Co.....32a/11
Pearson Brick Co.....4d/8a
Pecora Paint Co., Inc..... 7b/2
Peelle Co. 32a/12
–see also Peelle-Richmond..... 15f/3
–see also Richmond Fireproof Door Co.....15a/17
Peelle-Richmond 15f/3
Penn Metal Co., Inc.....12a/5
Penn Metal Corp. of Penna.....22c/6
Penn Ventilating Co.....19b/8
Pennsylvania Wire Glass Co.
•*roof ventilators*.....19b/9
•*skylights* 19a/4
Permanente Metals Corp.,
–see Permanente Products Co..... 6a/3
Permanente Products Co..... 6a/3
Permutit Co.....27a/17
Petraleum Heat & Power Co..... 28f/6
Pioneer Fireproof Door Corp.....15a/15
Pittsburgh Corning Corp.
•*glass blocks*.....7c/2a; 7c/3
•*insulatian* 10b/5

Pittsburgh Plote Gloss Co.
•glass 7o/4
•glass door and frame assemblies.....15b/2
•insulating windows.....16b/7
•point 14/15
•stare fronts..... 20/8
•structural gloss.....13b/12
Pittsburgh Reflector Co.....30a/15
Pittsburgh Steel Co.....21g/4
–see also Pittsburgh Steel Products Ca.....12a/6
Pittsburgh Steel Products Co.....12a/6
Pittsburgh Testing Loborotory..... 1c/1
Pomeroy, S. H., Co.
•acoustical fastenings.....11b/2
•steel windows.....16o/24
Porceloin Enomel Institute, Inc..... 6d/3
Porceloin Metals, Inc.,–see Seaporcel Metals, Inc.. 6d/4
Porceloin Products Co.,
–see Construction Products Corp.....24d/2
POrete Mfg. Co.....3c/19
Portlond Cement Assn..... 4e/4
Potter Mfg. Co..... 6g/3
Potts Ash Hoist Corp.....32c/2
Powers Regulotor Co.....24o/11
Prott & Lombert-Inc.....14/16
Precast Slob & Tile Co.....3c/20
Premier Metal Products Corp.,
–see Clork-Babbitt Industries, Inc.....16o/8
Price Brothers Co.,–see Flexicore Co., Inc.....3c/15
Primo Products Inc.....9o/15
Production Plonning Co.,–see Allen Ventilator Div..19b/1
Pro-Tect-U Jalousie Corp.....18c/4
Protexol Corp..... 5d/5
Pryne & Co., Inc.....28b/11
Pumice Producers Assn..... 4e/5
Pyle-Notionol Co.....28b/21o
Pyrofox Gas Div., Corbide & Carbon Chemicals Carp.28f/7

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Quoker City Metal Weatherstrip Co.....18b/6

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R. O. W. Soles Co.....16b/5
Rockle, Geo., & Sons Co.....3c/21
Rawplug Co., Inc..... 3f/4
Ray Proof Corp.....21d/2
Raymond Concrete Pile Co..... 2a/3
Roynar Mfg. Co. 15g/7
Reese Metol Weother Strip Co.....18b/7
Relioble Metol Novelty Co., Inc.....24c/15
Relionce Art Metal Co.....15a/16
Relionce Steel Products Ca.....13a/6
Remington Rond Inc.....22d/8
Republic Creosoting Co..... 5d/6
Republic Steel Corp.
•pipe 26a/4
•sheet metol..... 6c/5
–see also Berger Mfg. Div.....22c/2; 23a/2
Republic Steel Corp., (Steel & Tubes Div.).....29b/4
Revere Capper & Brass Inc.
•brass and copper pipe.....26a/5
•metal for tanks.....27a/7
•metals 6b/2
•roofing and flashing..... 8c/9
Reynalds Metals Co.....16a/25a
Reznor Mfg. Co.....28d/18
Rheem Mfg. Co.
•space and wall heaters, etc.....28e/8
•water heaters, tanks, etc.....27a/8
Ric-wil Co.....10d/1
Richards, J. Merrill
•gloss 7a/4a
•skylights 19o/5
Richards-Wilcox Mfg. Co.
•hordwore 17a/10
•partitions 21c/2
•wordrobes 22c/7
Richmond Fireproof Door Co.
•doors 15o/17
•fromes 15a/18
–see olso Peelle Co.....32o/12
–see also Peelle-Richmond..... 15f/3
Richmond Radiotor Co.....24o/2
Richmond Screw Anchor Co., Inc..... 3e/5
Riesner Vent Brick Corp.....19c/2
Rising & Nelson Slate Co., Inc.....8b/10
Raanake Iron & Bridge Works, Inc.....22h/3
Robberson Steel Co..... 1b/6
Robbins Flaaring Co.,–see Storm Flooring Co., Inc..13g/8
Robbins Tire & Rubber Co., Inc.....13e/9
Roberts Co. 13f/2
Roberts Paint Corp.....14/17
Roberts & Schaefer Co..... 3b/5
Rabertson, H. H., Co.
•flooring 13c/11
•q-deck raof canstructian..... 3c/8
•q-floar 3c/7
•raaf ventilatars 19b/10
•roofing 8c/11
•skylights 19a/6
Robinson Cloy Product Ca.....26o/6
Rockwood Alobomo Stone Co.....4a/16
Roddis Lumber & Veneer Ca.,
–see Roddis Plywoad Corp.....15c/8
Roddis Plywood Corp.....15c/8
Rohm & Haas Co..... 7d/1
Rolscreen Co. 16b/6
Rossbach & Sons, Inc.....16a/26
Rotary Lift Co.....32a/13
Rowe Mfg. Co.....15g/8
Rowles, E. W. A., Ca.
•blackboards 22d/5
•shades 18d/8
Ruberoid Co. 8a/7
Russell, F. C., Co. (Cincinnati Flyscreen Div.).....18a/7
Rust-Oleum Corp. 14/19
Ruud Mfg. Co.....27a/9

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St. Charles Mfg. Co. 23a/17
St. Louis Fire Door Co. 15f/4
St. Louis Lightning Protection Co. 22i/5
Sandell Mfg. Co., Inc. 8d/4
Sanymetal Products Co., Inc. 21b/6
Sanymetal Products Co., Inc., (Nailock Steel Div.) 11b/1
Sargent Building Specialties Inc. 25a/4
Schacht Associates, Inc. 15b/3
Schlage Lock Co. 17b/4
Schulmerich Electronics, Inc. 22e/6
Schwerd, A. F., Mfg. Co. 5c/6
Schwitzer-Cummins Co., (Ventilating Div.) 28b/12
Scott Paper Co. 24c/16
Seaporcel Metals, Inc. 6d/4
Security Co. 18b/8
Security Fire Door Co. 15f/5
Security Mfg. & Contracting Co. 22i/6
Security Products Co. 16a/27
Sedgwick Machine Works 32a/14
Self Winding Clock Co., Inc. 31c/2
Servel, Inc. 28a/7
Sharon Steel Corp. 8d/5
Shaw-Perkins Mfg. Co. 28d/14
Shepler Mfg. Co. 28b/13
Sherron Metallic Corp. 22i/1
Sherwin-Williams Co. 14/19a
Shlagro Steel Products Corp. 15g/9
Siems Bros., Inc.,–see Trussbilt Div. 15a/18a
Sika Chemical Corp. 9a/16
Simplon Products Div.,
Conver Steel & Wire Co., Inc. 12a/7
Simpson Logging Co., (Woodfiber Div.)
•*insulating board* 10a/16
•*sound control* 11a/9
Sioux Metal Products Co. 20/9
Sisalkraft Co. 9c/2
Sloan Valve Co. 24a/10
Smith, A. O., Corp.
•*glass lined tanks* 27b/1
•*water heaters* 27a/10
Smith, H. B., Co., Inc. 28d/9
Smooth Ceilings System 3b/6
Smyser-Royer Co.,–see J. W. Fiske Iron Works 6e/6
Son-Nel Products Co. 22d/5a
Sonneborn, L., Sons, Inc. 9a/17
Sonoco Products Co. 3e/7
Southern Prison Co. 22h/4
Southwestern Sheet Glass Co. 7a/5
Sparta Ceramic Co. 13b/4
Speakman Co. 24a/12
Spencer, White & Prentis, Inc. 2a/4
–see also Drilled-In Caisson Corp. 2a/1
Spencer Heater Div., Avco Mfg. Corp. 28d/10
Spencer Studios, Inc. 22a/3
Spero Electric Corp. 30a/16
Sperzel Co. 24a/5
Sprayed Insulation, Inc.
•*acoustical insulation* 11a/10
•*insulation* 10a/17
Sprayo-Flake Co.
•*acoustical coatings* 11a/11
•*thermal insulation* 10a/18
Stained Shingle & Shake Assn. 8b/7a
Standard American Window Safety Device Co. 17a/12
Standard Coated Products,
(Div. Interchemical Corp.) 13k/2
Standard Dry Wall Products Inc. 9a/18
Standard Steel Equipment Co., Inc. 22c/8
Standard Tank & Seat Co. 24a/6
Standard Varnish Works 14/19b
Stanley Works 17b/11
Stark Brick Co. 4d/9
Steel & Tubes Div.,–see Republic Steel Corp. 29b/4
Steel Kitchen Cabinet Institute 23a/18
Steelcraft Mfg. Co. 16a/28
Sterling Windows, Inc. 16a/29
Stewart Iron Works Co., Inc.
•*fencing* 21g/5
•*jail construction and equipment* 22h/5
Stokol Stoker Co., Inc. 28f/3
Stonhard Co. 13c/12
Storm Flooring Co., Inc. 13g/8
Stran-Steel Div.,–see Great Lakes Steel Corp. 3d/4
Streamline Pipe & Fittings Div.,
–see Mueller Brass Co. 26a/7
Stromberg-Carlson Co. 31b/5a
Stromberg Time Corp.,
(Sub. General Time Instruments Corp.) 31c/3
Structural Clay Products Institute,
–see Facing Tile Institute 4d/5
Structural Slate Co. 4a/17
Sturtevant Div.,
–see Westinghouse Electric Corp. 28a/9; 28b/4; 28d/20
Sun Chemical Corp.,–see A. C. Horn Co., Inc. 9a/10
Sunlight Metal Products Co. 16a/31
Super Steel Products Co. 19a/7
Superior Fireplace Co. 28g/9
Surface Combustion Corp. 28d/19
Swartwout Co. 19b/11
Sylvania Electric Products Inc. 30a/17
Symmons Engineering Co. 24o/13

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Tablet & Ticket Co. 22a/4
Taylor, Halsey W., Co. 27a/18
Taylor Mfg. Co. 13e/10
Tennessee Marble Producers 4a/9
Tennessee Stone Co., Inc. 4a/18
Terminal Construction Corp. 1a/5
Texlite Inc. 6d/5
Thilmany Pulp & Paper Co.,–see Graham Paper Co. 9c/1b
Thorn, J. S., Co. 16a/32

Thrush, H. A., & Co.....28c/7
Tile Council of America.....13b/5
Tile-O-Chrame Carp.....13b/9
Tile-Tex Ca., Inc.....13d/8
Tiletane Ca.....24b/3
Timber Structures, Inc.....3b/9
Toch Brathers Inc.....9a/19
Trade-Wind Matarfans, Inc.....28b/14
Trane Ca.....28a/8
Tremca Mfg. Co.....7b/3
Trinity Div., General Partland Cement Co.....4e/6
Trion, Inc.....28b/3
Triplex Heating Specialty Ca., Inc.....28c/8
Trumbull Electric Mfg. Co.....29a/5
Truscan Labaratories
(Div. Devae & Raynalds Co., Inc.)
•*paint*.....14/20
•*roaf canstruction*.....3c/22
•*waterproafing and dampproofing*.....9a/20
Truscon Steel Ca.
•*daars*.....15f/6
•*structural praducts*.....3d/9
•*windaws*.....16a/34
Trussbilt Div. Siems Bros., Inc.....15a/18a
Tuckahoe Stucca Carp.....4e/7
Turner & Seymour Mfg. Ca.....17a/6a
Tuttle & Bailey, Inc.....28b/22
Tylac Co.....13i/10

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Union Carbide & Carban Corp.,
–see Pyrafax Gas Div.....28f/7
Unian Metal Mfg. Ca.....2b/2
Unique Balance Ca., Inc.....17a/7
Unit Structures, Inc.....3b/10
United Metal Bax Ca., Inc.....24c/17
United States Bronze Sign Ca., Inc.....22a/5
U. S. Gutta Percha Paint Ca.....14/21
United States Gypsum Co.
•*acoustical materials*.....11a/12
•*floor gratings*.....13a/7
•*insulation*.....10a/19
•*lathing and plastering*.....12b/3
•*mason's lime*.....4e/8
•*paints*.....14/22
•*roof decks*.....3c/11
•*siding and shingles*.....8b/6
U. S. Machine Carp.....28f/4
United States Plywaad Carp.
•*plastic surfacing material*.....13i/13
•*plywood*.....5b/3
•*wall coverings*.....13i/12
•*wood doors*.....15c/5
United States Quarry Tile Ca.....13b/6
United States Radiatar Corp.....28d/12
–see alsa Pacific Steel Boiler Div.....28d/7
United States Register Ca.....28b/23
U. S. Sanitary Specialties Carp.....24c/18
United States Steel.....6c/6
United States Steel Carp., Subsidiaries,
–see Cyclane Fence Div.....21g/2
–see Universal Atlas Cement Co.....4b/3; 13c/5
Universal Atlas Cement Ca.
•*stucco*.....4b/3
•*terrazzo*.....13c/5
Universal Bleacher Co.....22f/3
Universal Carp.....16a/36
Universal Window Co.....17b/17
Upsan Ca.....12b/4
Uvalde Rock Asphalt Ca.....13d/9

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Vallas, Lionel.....15a/19
Valley Metal Praducts Ca.....16a/37
Van, Jahn, Range Ca., (Div. Edwards Mfg. Ca.)....23b/5
Van Darn Iran Warks Ca.....22h/6
Van Naorden, E., Co.
•*skylights*.....19a/8
•*ventilatars*.....19b/12
Vasconcellas, Jaseph, Inc.....22e/1
Venda Ca., (Autasanic Div.).....15g/10
Veneer Assaciatian.....5a/3
Vent-O-Lite Co.....19a/9
VentiLite Corp.....16a/37a
Ventilauvre Ca., Inc.....18c/5
Vento Steel Praducts Ca., Inc.....16a/37b
Vermant Marble Ca.....4a/10
Vermant Structural Slate Ca., Inc.....13b/13
Victar Electric Products, Inc.....28b/15
Vikan Tile Carp.....13b/10
Virginia Metal Praducts Carp.
•*baokstacks*.....22d/9
•*doars*.....15a/20
•*metal partitions*.....21a/7
Vogel-Petersan Co.....22c/9
Von Duprin Div., Vonnegut Hardware Ca.....17b/5
Vannegut Hardware Co.,–see Van Duprin Div.....17b/5
Vulcan Radiatar Co.....28d/15
Vulcan Rail & Constructian Ca.....6h/3

W

Wade Mfg. Ca.....27e/5
Wakefield, F. W., Brass Co.....30a/18
Walker Bros.....29b/5
Wallace & Tiernan Co., Inc.....22f/6
Walsh Ca.....15i/1
Walwarth Ca.....26a/8
Ware Labaratories, Inc.....16a/38
Warner Elevator Mfg. Ca.....32a/15
Warsaw Elevatar Ca.....32a/16
Wasca Flashing Ca.....8d/6
Washburn & Granger, Inc.....25a/5
Waterfilm Bailers, Inc.....28d/12a
Waterlax Div.,–see Empire Varnish Co.....14/5

firms

Waterman-Waterbury Co. 28e/10
Watson Elevator Co., Inc.....32a/18
Watson Mfg. Co., Inc.
•*bank equipment* 22a/11
•*hospital equipment* 22g/3
Waylite Co. 4e/10
Wayne Iron Works..... 22f/4
Weatherbest Corp.,–see Creo-Dipt Co., Inc..... 8b/7
Weber Costello Co.....22d/6
Webster, Warren, & Co.
•*heating systems* 28c/9
•*radiators* 28d/16
Webster Electric Co.....31b/6
Weis, Henry, Mfg. Co., Inc.....21b/7
Weiss, I., & Sons.....22e/2
Werner, R. D., Co., Inc.....13J/2
Wesco Waterpaints, Inc.....14/23
Wesix Electric Heater Co.....28e/11
Western Foundation Co..... 2a/5
–see also Drilled-In Caisson Corp..... 2a/1
Western Pine Assn..... 5a/4
Western Waterproofing Co.....9a/22
Western Waterproofing Cos.....9a/21
Western Wire & Iron Works, Inc..... 21f/2
Westinghouse Electric Corp.
•*elevators* 32a/19
•*kitchen and service equipment*.....23a/20
•*lighting fixtures* 30a/19
•*switchboards, switches, panelboards, etc*.....29a/6
•*x-ray planning* 22g/4
Westinghouse Electric Corp., (Sturtevant Div.)
•*air conditioning* 28a/9
•*filters* 28b/4
•*unit heaters* 28d/20
Wheeling Corrugating Co.
•*gratings* 13a/8
•*metal lath* 12a/8
•*roof decks* 3c/9
Whitney, Vincent, Co.....17b/18
Wickwire Spencer Steel Div.,
–see Colorado Fuel & Iron Corp.....21g/1
Wilbur & Williams Co.....14/24
Wilkinson, C. M., Co.,–see Wilkinson Chutes, Inc...24d/3
Wilkinson Chutes, Inc.....24d/3
Williams & Williams Products Corp.....16a/39
Wilson, J. G., Corp.....15e/8
Winco Ventilator Co., Inc..... 7c/6
Windshield Scupper Div.,
–see Sargent Building Specialties Inc.....25a/4
Wing, L. J., Mfg. Co.....28d/21
Wollaeger Steel Corp.,
(Div. Aetna Steel Products Corp.).....12a/9
Wood, John, Mfg. Co., Inc.....27a/11
Wood Conversion Co.....10a/20
Wood Metal Industries, Inc.....23a/21
Wood-Mosaic Co., Inc.....13g/9
Wood Treating Chemicals Co..... 5d/7
Wooster Products, Inc.....13a/12
World Steel Products Corp.....15a/21
Worthington Pump & Machinery Corp.....28a/10

y

Yale & Towne Mfg. Co.....17b/12
Yeomans Bros. Co.....27d/3
Yoder Co.,–see Mid-West Acoustical & Supply Co..11b/3
York Corp. 28a/11
Yorkmont Slate Co., Inc.....8b/11
Young Radiator Co.....28a/12
Young Regulator Co.....28c/10

z

Zonolite Co. 10a/21
Zurn, J. A., Mfg. Co.....27e/6

a

absorbers

shock or vibration—machinery
Celotex Corp. 10a/4o
Cork Import Corp. 10b/2
Korfund Co., Inc. 11c/1
Mundet Cork Corp. 10b/4

shock or vibration—pressure line
Jasom Mfg. Co. 27e/4
Wade Mfg. Co. 27e/5

accelerators

Adensite Co., Inc. 9o/1
Anti-Hydro Waterproofing Co. 9o/2
Aquabor Co. 9o/3
Ceresit Waterproofing Corp. 9o/6
Horn, A. C., Co., Inc. 9a/10
Kedmont Mfg. & Waterproofing Co....9o/10o
Sika Chemical Corp. 9o/16
Sonneborn, L., Sons, Inc. 9o/17

access doors

see *doors*

acidproofing

see *hardeners and densifiers*

acoustical

blanket
Johns-Manville 11o/5
Kimberly-Clark Corp. 10a/13
Lockport Cotton Batting Co. 10o/14
Owens-Corning Fiberglas Corp.....10c/1

coatings—sprayed on
National Gypsum Co. 11o/7
Sprayed Insulation, Inc.....10o/17; 11o/10
Sprayo-Flake Co. 10o/18; 11o/11

fastening systems
see *fasteners—acoustical and wallboard; clips—anchor—acoustical ceiling; inserts; etc.*

materials and treatments
see *blocks—acoustical; ducts—linings for—sound retardant; floor construction—acoustical; partitions—sound retardant; plaster—acoustical; sound isolation systems; test cells—sound retarding; tile—acoustical; doors—sound retarding; wallboard—acoustical; etc.*

adhesives

(see also cement)
Acme Asbestos Covering & Flooring Co..13c/6
Armstrong Cork Co. 10b/1
Barrett Div. 8o/2
Combridge Tile Mfg. Co. 13b/1
Celotex Corp. 10o/4o
Cork Import Corp. 10b/2

adhesives *cont.*

Flintkote Co. 13d/2
Insulite Div. 10o/10
Marsh Wall Products, Inc. 13i/8
Miracle Adhesives Corp.....13J/3
Moulding, Thos., Floor Mfg. Co. 13d/7
Tylac Co. 13i/10
Wood Conversion Co. 10o/20

adjusters

casement window
see *hardware*

admixtures

see *hardeners and densifiers; waterproofing; antifreeze compounds*

aggregates

abrasive
American Abrasive Metals Co. 13a/9
Aquabor Co. 9a/3
Ceresit Waterproofing Corp. 9a/6
Monhatton Terrazzo Brass Strip Co., Inc. 13c/2
Norton Co. 13c/4
Paddock Pool Equipment Co.....22f/5
Sonneborn, L., Sons., Inc. 9o/17
Truscon Laboratories 9o/20

concrete—lightweight
Celotex Corp. 10o/4o
Norton Co. 13c/4
Waylite Co. 4e/10
Zonolite Co. 10o/21

granite
Fletcher, H. E., Co. 4a/3
North Carolina Granite Corp. 4o/6

metal
Aquabar Co. 9o/3
Ceresit Waterproofing Corp. 9a/6
Horn, A. C., Co., Inc. 9o/10
Kedmont Mfg. & Waterproofing Co. ..9o/10o
Master Builders Co. 9a/13
Sonneborn, L., Sons, Inc.....9a/17

pumice
Pumice Producers Assn. 4e/5

terrazzo
Monhatton Terrazzo Brass Strip Co., Inc. 13c/2
Norton Co. 13c/4

air conditioning

(see also grilles; dampers or registers; furnaces; etc.)

cabinet units
Bryant Heater Co. 28d/1
Carrier Corp. 28a/3
Chrysler Corp 28o/4
Dunham, C. A., Co. 28c/2
Frigidaire Div. 23o/4o

air conditioning *cont.*

cabinet units *cont.*
General Electric Co. 28o/6
Trane Co. 28a/8
Westinghouse Electric Corp. 28a/9
York Corp. 28o/11

central plant system
Air & Refrigeration Corp. 28a/1
American Foundry & Furnace Co. 28e/1
Campbell Heating Co. 28e/2
Carrier Corp. 28a/3
Chrysler Corp. 28o/4
Fitzgibbons Boiler Co., Inc. 28d/3
Frigidaire Div. 23a/4o
General Electric Co. 28o/6
Trane Co. 28o/8
Watermon-Waterbury Co., ...28e/10
Westinghouse Electric Corp. 28o/9
Worthington Pump & Machinery Corp. 28o/10
York Corp. 28a/11

central plant unit—self-contained
Air & Refrigeration Corp. 28a/1
American Blower Corp. 28a/2
American Foundry & Furnace Co. 28e/1
Baker Ice Machine Co., Inc. 28o/2a
Bryant Heater Co. 28d/1
Campbell Heating Co. 28e/2
Carrier Corp. 28o/3
Chrysler Corp. 28a/4
Clorage Fan Co. 28a/5
Fitzgibbons Boiler Co., Inc. 28d/3
Frigidaire Div. 23a/4o
General Electric Co. 28o/6
Jackson & Church Co. 28e/6
Koustine Co., Inc. 28e/7
Mueller, L. J., Furnace Co.....28e/7o
Rheem Mfg. Co. 28e/8
Servel, Inc. 28a/7
Stokol Stoker Co., Inc. 28f/3
Surface Combustion Corp. 28d/19
Trane Co. 28a/8
United States Radiator Corp. 28d/12
Watermon-Waterbury Co. 28e/10
Westinghouse Electric Corp. 28o/9
Worthington Pump & Machinery Corp. 28a/10
York Corp. 28o/11
Young Radiator Co. 28o/12

contractors
Guaranteed Waterproofing Co. 1b/4
Terminal Construction Corp. 1o/5

heating and cooling surface
Air & Refrigeration Corp. 28o/1
American Blower Corp. 28o/2
Carrier Corp. 28a/3
Dunham, C. A., Co. 28c/2
General Electric Co. 28a/6
Modine Mfg. Co. 28d/13
Trane Co. 28o/8
Westinghouse Electric Corp. 28a/9
Worthington Pump & Machinery Corp. 28o/10
York Corp. 28o/11
Young Radiator Co. 28o/12

products

airport contractors and engineers

hangars, administration buildings, etc.
Bornes, James I., Construction Co. 1o/1
Roberts & Schoefer Co. 3b/5

alarms

boiler—low water
see boilers—protectors for

fire
Autocoll Co. 31b/1
Automotic Electric Co.....31b/2
Internotionol Business Mochines Corp...31c/1

sprinkler system
see fire—sprinkler systems

alloys

see metal; sheet, strip, plate; etc.

aluminum or aluminum alloy

(see also castings; metal; rods and bars; sheet, strip, plate; tubing; wire)

foil
Aluminum Co. of Americo 6a/1

leaf
Hastings & Co., Inc.....14/6o

paste or powder
Rust-Oleum Corp. 14/19

ammonia control apparatus

Wolloce & Tiernan Co., Inc. 22f/6

amplifiers

see public address systems; sound systems

anchors

bar
see furring and studding

beam or joist
Bethlehem Steel Co. 3d/2
Clevelond Steel Specialty Co., Inc. 3f/1
Donley Brothers Co. 28g/5
Hohmonn & Bornord, Inc. 3f/3
Truscon Steel Co. 3d/9

bolt
Clevelond Steel Speciolty Co., Inc. 3f/1
Hohmonn & Barnord, Inc. 3f/3
Rowlplug Co., Inc. 3f/4

buck
Donley Brothers Co. 28g/5
Hahmann & Bornord, Inc.....3f/3
Rowlplug Co., Inc. 3f/4

expansion bolts
see bolts—expansion

floor sleeper
see clips

masonry
Bethlehem Steel Co. 3d/2
Clevelond Steel Specialty Co., Inc. 3f/1
Hahmann & Bornord, Inc.....3f/3
Rawlplug Co., Inc. 3f/4

anchors cont.

partition
Americon Structural Products Co.....7c/1
Conver Steel & Wire Co. 3e/2
Hahmonn & Bornord, Inc. 3f/3
Mid-West Acousticol & Supply Co.....11b/3
Rowlplug Co., Inc. 3f/4

pipe
Grinnell Co., Inc. 26a/3

screw
Hahmann & Bornord, Inc. 3f/3
Rowlplug Co., Inc. 3f/4
Richmond Screw Anchor Co., Inc. 3e/5

slot and slots for
Conver Steel & Wire Co. 3e/2
Hohmonn & Barnard, Inc. 3f/3

veneer wall
Alobomo Metol Lath Co. 12a/1
Clevelond Steel Specialty Co., Inc. 3f/1
Conver Steel & Wire Co. 3e/2
Donley Brothers Co. 28g/5
Hohmonn & Barnord, Inc. 3f/3
Rowlplug Co., Inc. 3f/4

wall furring
Donley Brothers Co. 28g/5
K-M Building Products Co. 12o/4
Mirocle Adhesives Corp.....13J/3
Rawlplug Co., Inc. 3f/4
Simplan Products Div. 12a/7

window cleaners' belt
see windows—cleaners' safety devices for

andirons

see fireplace—accessories

annunciators

see communication systems; sound systems

antenna

Linga, John E., & Son, Inc.....6f/3

anthracene oil

see preservatives—wood

antifreeze compounds

Adensite Co., Inc. 9o/1
Anti-Hydro Waterproofing Co. 9a/2
Siko Chemicol Corp. 9a/16
Sonneborn, L., Sons., Inc. 9o/17
Toch Brothers Inc.....9o/19

aprons

sink
see sinks

arches

metal
American Institute of Steel Construction, Inc. 3d/1
Arch Roof Construction Co., Inc. 3b/7

metal corner bead
see lath—arches or columns—formed; beads—corner

metal lath
see lath—arches or columns—formed

arches cont.

plastic
Arch Roof Construction Co., Inc.....3b/7

wood
Arch Roof Construction Co., Inc.....3b/7
Timber Structures, Inc.....3b/9
Unit Structures, Inc.....3b/10

area walls

metal
Donley Brothers Co. 28g/5
Hohmonn & Bornord, Inc. 3f/3
Penn Metal Corp. of Penno. 22c/6

arresters

water-hammer
see absorbers—shock or vibration—pressure line

asbestos-cement

see roofing; wallboard; pipe; siding; shingles

ashlar

see glass—structural; granite; limestone; marble; quartzite; sandstone; etc.

asphalt

(see also roofing—built up; shingles—asphalt; waterproofing; flooring—asphalt; paint)

basic
American Asphalt Roof Corp. 8o/1
Barrett Div. 8o/2
Corey, Philip, Mfg. Co.....8o/3; 8b/2
Cork Insulation Co., Inc. 10b/3
Flintkote Co. 8o4; 9o/7; 13d/2
Johns-Manville 8a/5
Koppers Co., Inc. 8o/6
Minwax Co., Inc. 9o/14
Ruberoid Co. 8o/7

emulsion
American Structurol Products Co. 7c/1
Armstrong Cork Co. 10b/1
Ceresit Waterproofing Corp. 9o/6
Cork Import Corp. 10b/2
Cork Insulation Co., Inc. 10b/3
Flintkote Co. 9o/7; 13d/2
Pittsburgh Corning Corp. 7c/3

auditorium furnishings

see furniture; theatre equipment; benches

awnings

bars, hoods, etc. for
(see also store front construction)
Aluminum Awning Co. 18e/1
Anco Mfg. Co., Inc. 20/2
Astrup Co. 18e/2
Athey Shade Co. 18d/5
Brosca Mfg. Co. 20/3
Himmel Brothers Co. 20/4
Kawneer Co. 18e/3; 20/5
Notcar 20/6
Notional Store Fronts 20/7
New York Awning Co., Inc. 18e/4
Pittsburgh Plate Glass Co. 20/8
Sioux Metal Products Co. 20/9
Texlite Inc. 6d/5

awnings *cont.*

canvas or fabric
Astrup Co. 18e/2
Athey Shade Co. 18d/5
New York Awning Co., Inc. 18e/4

metal—folding or roll-up
Aluminum Awning Co. 18e/1
Kawneer Co. 18e/3
New York Awning Co., Inc. 18e/4

operating mechanisms for
Aluminum Awning Co. 18e/1
Astrup Co. 18e/2
Athey Shade Co. 18d/5
New York Awning Co., Inc. 18e/4

rollers for
Astrup Co. 18e/2
Athey Shade Co. 18d/5
Columbia Mills, Inc. 18d/1
Hartshorn, Stewart, Co. 18d/7
New York Awning Co., Inc. 18e/4

roof, terrace, etc.
New York Awning Co., Inc. 18e/4
Russell, F. C., Co. 18a/7

sockets for
see awnings—roof, terrace, etc.

store front—built-in
Aluminum Awning Co. 18e/1
Astrup Co. 18e/2
Athey Shade Co. 18d/5
Kawneer Co. 18e/3
New York Awning Co., Inc. 18e/4

venetian
Russell, F. C., Co. 18a/7

b

backstops

baseball
Colorado Fuel & Iron Corp. 21g/1
Cyclone Fence Div. 21g/2
Pittsburgh Steel Co. 21g/4

basketball
Medart, Fred, Mfg. Co. 22f/1

balances

combination—sash balance and weatherstrip
Allmetal Weatherstrip Co. 18b/2
Master Metal Strip Service, Inc. 17a/5

sash
Caldwell Mfg. Co. 17a/1
Grand Rapids Hardware Co. 17a/3
Master Metal Strip Service, Inc. 17a/5
Pomeroy, S. H., Co. 16a/24
Turner & Seymour Mfg. Co. 17a/6a
Unique Balance Co., Inc. 17a/7

balconies

metal
see metal—ornamental

ballasts

fluorescent lighting
General Electric Co. 29a/4

balustrades

see railings; metal—ornamental

band shells

see roof construction—arch

bank vaults

see vaults

barn and stable equipment

Fiske, J. W., Iron Works 6e/6

barometers

Friez Instrument Div. 22a/2

bars

(see also rods and bars)

binding
see dividers; edgings

curb
Fiske, J. W., Iron Works 6e/6
Flockhart Foundry Co. 6h/2
Truscon Steel Co. 3d/9
Wooster Products, Inc. 13a/12

door—push or pull
American Art Metals Co. 15a/2
Anco Mfg. Co., Inc. 20/2
Ellison Bronze Co., Inc. 15a/10
International Steel Co. 15d/2
Lockwood Hardware Mfg. Co. 17b/3
Reliance Art Metal Co. 15a/16
Richmond Fireproof Door Co. 15a/17
Von Duprin Div. 17b/5
Weis, Henry, Mfg. Co., Inc. 21b/7

food or beverage
see food preparation and service equipment

reinforcing—concrete
Bethlehem Steel Co. 3d/2
Concrete Reinforcing Steel Institute 3b/3
Inland Steel Co. 6c/4
Laclede Steel Co. 3d/5
Truscon Steel Co. 3d/9

ties, spacers and hangers for
see clips—bar—concrete reinforcing

base

beads
see beads

cove
see cove base

partition systems
see partition systems; anchors—partition

screeds
see screeds

baseboard

heating equipment
see radiators—baseboard type; heating systems

bases

column or post
see caps and bases

bases *cont.*

flagpole
see flagpoles—bases for

ventilator—roof
see ventilators—bases for

basins

see sinks

baskets

gymnasium
All-Steel Equipment Inc. 22c/1
Berger Mfg. Div. 22c/2

rocks for
see rocks—basket

wire
All-Steel Equipment Inc. 22c/1
American Sanitary Partition Co. 21b/2
Berger Mfg. Div. 22c/2
Medart, Fred, Mfg. Co. 22c/5

bathroom accessories

cabinets
(see also cabinets)

Bennett Mfg. Co. 24c/2a
Carr, Adams & Collier Co. 5c/1
Columbia Metal Box Co. 24c/3
Fries & Son Steel Construction & Engineering Co. 22h/1a
Gerity-Michigan Corp. 24c/6
Grote Mfg. Co., Inc. 24c/7
Hoegger, Inc. 24c/9
Ketcham, G. M., Mfg. Corp. 24c/11
Lawson, F. H., Co. 24c/12
Miami Cabinet Div. 24c/13
Parker, Charles, Co. 24c/14
Reliable Metal Novelty Co., Inc. 24c/15
United Metal Box Co., Inc. 24c/17

hampers
Ketcham, G. M., Mfg. Corp. 24c/11
United Metal Box Co., Inc. 24c/17

heaters
see heaters—auxiliary or bathroom

holders—paper towel, napkin or toilet seat cover
A. P. W. Products Co., Inc. 24c/1
American Sanitary Partition Co. 21b/2
Fairfacts Co. Inc. 24c/4
Miami Cabinet Div. 24c/13
Sanymetal Products Co., Inc. 21b/6
Scott Paper Co. 24c/16
U. S. Sanitary Specialties Corp. 24c/18

holders—soap, tumbler, toothbrush, sponge, etc.
Bay Ridge Specialty Co. 24c/2
Cambridge Tile Mfg. Co. 13b/1
Columbia Metal Box Co. 24c/3
Fairfacts Co. Inc. 24c/4
Fries & Son Steel Construction & Engineering Co. 22h/1a
Gerity-Michigan Corp. 24c/6
Hall-Mack Co. 24c/8
Hoegger, Inc. 24c/9
Ketcham, G. M., Mfg. Corp. 24c/11
Lawson, F. H., Co. 24c/12

products

bathroom accessories cont.

holders—soap, tumbler, toothbrush, sponge, etc. cont.
Marsh Wall Products, Inc. 13i/B
Miami Cabinet Div. 24c/13
Parker, Charles, Ca. 24c/14
Reliable Metal Navelty Ca., Inc. 24c/15
Sanymetal Products Ca., Inc. 21b/6

holders—tailet paper
A. P. W. Products Ca., Inc. 24c/1
American Sanitary Partition Ca. 21b/2
Bay Ridge Specialty Ca. 24c/2
Cambridge Tile Mfg. Ca. 13b/1
Calumbia Metal 8ax Ca. 24c/3
Fairfacts Co. Inc. 24c/4
Fries & Son Steel Canstructian
& Engineering Co. 22h/1a
Gerity-Michigan Carp. 24c/6
Hall-Mack Co. 24c/8
Haegger, Inc. 24c/9
Ketcham, G. M., Mfg. Carp. 24c/11
Lawsan, F. H., Ca. 24c/12
Marsh Wall Praducts, Inc. 13i/8
Miami Cabinet Div. 24c/13
Mills Ca. 21b/4
Parker, Charles, Co. 24c/14
Reliable Metal Navelty Ca., Inc. 24c/15
Sanymetal Praducts Ca., Inc. 21b/6
Scatt Paper Co. 24c/16
U. S. Sanitary Specialties Corp. 24c/1B
Weis, Henry, Mfg. Co., Inc. 21b/7

lighting fixtures
Bennett Mfg. Ca. 24c/2a
Calumbia Metal Box Co. 24c/3
Grate Mfg. Co., Inc. 24c/7
Haegger, Inc. 24c/9
Ketcham, G. M., Mfg. Carp. 24c/11
Lawson, F. H., Co. 24c/12
Miami Cabinet Div. 24c/13
Parker, Charles, Co. 24c/14

lighting fixtures—blower combination
Trade-Wind Matarfans, Inc. 28b/14

mirrars
Bennett Mfg. Co. 24c/2a
Calumbia Metal Box Ca. 24c/3
Grate Mfg. Ca., Inc. 24c/7
Hoegger, Inc. 24c/9
Ketcham, G. M., Mfg. Carp. 24c/11
Lawsan, F. H., Ca. 24c/12
Miami Cabinet Div. 24c/13
Parker, Charles, Ca. 24c/14
Reliable Metal Novelty Co., Inc. 24c/15
United Metal Box Co., Inc. 24c/17

robe or strop hooks
American Sanitary Partitian Ca. 21b/2
Bay Ridge Specialty Ca. 24c/2
Cambridge Tile Mfg. Co. 13b/1
Calumbia Metal Box Co. 24c/3
Fairfacts Co. Inc. 24c/4
Fries & Son Steel Construction
& Engineering Ca. 22h/1a
Gerity-Michigan Carp. 24c/6
Hall-Mack Ca. 24c/B
Haegger, Inc. 24c/9
Ketcham, G. M., Mfg. Carp. 24c/11
Lawson, F. H., Ca. 24c/12
Marsh Wall Praducts, Inc. 13i/B
Miami Cabinet Div. 24c/13

bathroom accessories cont.

rabe ar strap haaks cont.
Mills Ca. 21b/4
Parker, Charles, Co. 24c/14
Reliable Metal Navelty Ca., Inc. 24c/15
Sanymetal Products Co., Inc. 21b/6
Weis, Henry, Mfg. Co., Inc. 21b/7

scales
Fries & Son Steel Canstructian
& Engineering Ca. 22h/1a

seat covers
A. P. W. Praducts Ca., Inc. 24c/1

shelves
American Sanitary Partitian Ca. 21b/2
Columbia Metal Bax Ca. 24c/3
Fairfacts Ca. Inc. 24c/4
Fries & San Steel Canstructian
& Engineering Ca. 22h/1a
Gerity-Michigan Carp. 24c/6
Hall-Mack Ca. 24c/8
Hoegger, Inc. 24c/9
Ketcham, G. M., Mfg. Carp. 24c/11
Lawsan, F. H., Ca. 24c/12
Marsh Wall Products, Inc. 13i/B
Miami Cabinet Div. 24c/13
Parker, Charles, Co. 24c/14
Reliable Metal Novelty Ca., Inc. 24c/15

tailet paper
A. P. W. Products Ca., Inc. 24c/1
Scatt Paper Co. 24c/16

tawel bars or racks, grab rails, etc.
Bay Ridge Specialty Ca. 24c/2
Cambridge Tile Mfg. Co. 13b/1
Columbia Metal Bax Ca. 24c/3
Fairfacts Co. Inc. 24c/4
Fries & Son Steel Construction
& Engineering Ca. 22h/1a
Gerity-Michigan Carp. 24c/6
Hall-Mack Ca. 24c/8
Hoegger, Inc. 24c/9
Ketcham, G. M., Mfg. Carp. 24c/11
Lawsan, F. H., Ca. 24c/12
Marsh Wall Praducts, Inc. 13i/8
Miami Cabinet Div. 24c/13
Mosaic Tile Co. 13b/2
Parker, Charles, Ca. 24c/14
Reliable Metal Navelty Co., Inc. 24c/15

tawel racks—disappearing
Knape & Vogt Mfg. Ca. 17b/13
United Metal 8ox Ca., Inc. 24c/17

tawels
A. P. W. Products Ca., Inc. 24c/1
Scatt Paper Co. 24c/16

waste receptacles
A. P. W. Products Ca., Inc. 24c/1
Scott Paper Ca. 24c/16
U. S. Sanitary Specialties Corp. 24c/18

baths

haspital—therapy, arms, leg, etc.
Blickman, S., Inc. 23b/1
Elkay Mfg. Co. 23a/4
Just Mfg. Ca. 23a/10
Van, Jahn, Range Co. 23b/5

shower
see shawer baths

bathtubs

Eljer Co. 24a/1
Richmand Radiator Co. 24a/2

enclasures for
see glass—structural; shawer baths—cabinet unit

fittings for
Eljer Co. 24a/1
Speakman Co. 24a/12

battery chargers

Onan, D. W., & Sons, Inc. 29a/7

beads

base
Alabama Metal Lath Ca. 12a/1
Goldsmith Metal Lath Ca. 3b/4
Manhattan Terrazza Brass Strip Co., Inc. 13c/2
National Gypsum Ca. 12b/2
United States Gypsum Ca. 12b/3

corner
Alabama Metal Lath Co. 12a/1
Canver Steel & Wire Co. 3e/2
Goldsmith Metal Lath Ca. 3b/4
Inland Steel Products Ca. 12a/3
Knapp Bros. Mfg. Co. 12a/4a
Manhattan Terrazzo Brass Strip Ca., Inc. 13c/2
National Gypsum Ca. 12b/2
Penn Metal Co., Inc. 12a/5
Truscon Steel Co. 3d/9
United States Gypsum Ca. 12b/3
Wheeling Corrugating Co. 12a/8

beams

concrete
see joists—reinfarced cancrete; shapes—cancrete—structural

coverings for
see lath; tile—hallaw gypsum; tile—hollaw—clay ar terra cotta

hangers for
see hangers

steel
see structural—steel—fabricatars, designers and welders; shapes—metal—structural

steel—spiral reinforced
POrete Mfg. Co. 3c/19

tile for
see tile—hallaw—clay ar terra catta

wood
Republic Creosoting Co. 5d/6
Timber Structures, Inc. 3b/9
Unit Structures, Inc. 3b/10

wrapping for
see caging

beds

folding or disappearing
Murphy Daor Bed Co. 22i/2

bells

tower
see carillans

bells and buzzers

electric
Autocall Co. 31b/1
Executone, Inc. 31b/4
International Business Machines Corp. ..31c/1
Stromberg Time Corp. 31c/3

belting

conveyor—woven wire
Cyclone Fence Div. 21g/2

benches

All-Steel Equipment Inc. 22c/1
Fiske, J. W., Iron Works 6e/6
Lyon Metal Products, Inc. 22c/4
Penn Metal Corp. of Penna. 22c/6

costings for
see castings

frames for
Contractars Foundry 6h/1

billiard rooms

see recreation equipment

bins

steel plate
see metal plate construction; shelving—steel

blackboards

chalk troughs for
Austral Sales Corp. 17b/14
Beckley-Cardy Co. 22d/1
Claridge Products, Inc. 22d/2
Gotham Weatherstrip Co., Inc.....22d/2a
Inland Steel Products Co. 12a/3
Knapp Bros. Mfg. Co. 12a/4a
Natural Slate Blackboard Co.....22d/3
New York Silicate Book Slate Co., Inc. .22d/4
Rawles, E. W. A., Co. 22d/5
Son-Nel Products Co. 22d/5a
Weber Costello Co. 22d/6
Wollaeger Steel Corp. 12a/9

combination—blackboard and work shelf
Austral Sales Corp. 17b/14
New York Silicate Book Slate Co., Inc. .22d/4

composition
Beckley-Cardy Co. 22d/1
Claridge Products, Inc. 22d/2
New York Silicate Book Slate Co., Inc. .22d/4
Rowles, E.W. A., Co. 22d/5
Son-Nel Products Co. 22d/5a
Weber Costello Co. 22d/6

display rails for
Austral Sales Corp.....17b/14
Beckley-Cardy Co. 22d/1
Claridge Products, Inc. 22d/2
Gotham Weatherstrip Co., Inc.....22d/2a
Knapp Bros. Mfg. Co. 12a/4a
New York Silicate Book Slate Co., Inc. .22d/4
Rowles, E. W. A., Co.....22d/5
Weber Costello Co. 22d/6

frames and mouldings for
Austral Sales Corp.....17b/14
Beckley-Cardy Co. 22d/1

blackboards cont.

frames and mouldings for *cont.*
Claridge Products, Inc. 22d/2
Gotham Weatherstrip Co., Inc.....22d/2a
Inland Steel Products Co. 12a/3
Knapp Bros. Mfg. Co. 12a/4a
Natural Slate Blackboard Co. 22d/3
New York Silicate Book Slate Co., Inc. .22d/4
Rowles, E. W. A., Co.....22d/5
Son-Nel Products Co. 22d/5a
Weber Costello Co. 22d/6
Wollaeger Steel Corp. 12a/9

gloss
New York Silicate Book Slate Co., Inc. .22d/4

horizontal and vertical sliding
New York Silicate Book Slate Co., Inc. .22d/4

reversible
Austral Sales Corp. 17b/14
New York Silicate Book Slate Co., Inc. .22d/4

slate
Natural Slate Blackboard Co.....22d/3
New York Silicate Book Slate Co., Inc. .22d/4

tack strips for
Austral Sales Corp. 17b/14
Beckley-Cardy Co. 22d/1
Claridge Products, Inc.....22d/2
Gotham Weatherstrip Co., Inc.....22d/2a
Natural Slate Blackboard Co. 22d/3
New York Silicate Book Slate Co., Inc. .22d/4
Rowles, E. W. A., Co. 22d/5
Son-Nel Products Co.....22d/5a
Weber Costello Co. 22d/6

blanket warmers

General Fireproofing Co. 22g/1
Jamestown Metal Products, Inc. 22g/2
Watsan Mfg. Co., Inc. 22g/3

bleachers

(see also grandstands)
American Seating Co. 22d/7
Horn Brothers Co. 21c/1a; 22f/1a
Leavitt Corp. 22f/2
Medart, Fred, Mfg. Co. 22f/1
Shlagro Steel Products Corp. 15g/9
Timber Structures, Inc. 3b/9
Universal Bleacher Co. 22f/3
Wayne Iron Works 22f/4

bleaches

Breinig Brothers, Inc. 14/1a
Cabot, Samuel, Inc. 14/1

blinds

(see also jalousies; shutters)

louvered—outside window
Dalmo Continental Inc. 16b/2
Universal Corp. 16a/36

venetian—metal slat
Columbia Mills, Inc. 1Bd/1
Hough Shade Corp. 1Bd/2
Hunter Douglas Corp. 1Bd/3
Modern Venetian Blinds, Inc. 1Bd/4
Rolscreen Co. 16b/6
Universal Corp. 16a/36

blinds cont.

venetian—wood slat
Athey Shade Co. 1Bd/5
Columbia Mills, Inc. 1Bd/1
Hough Shade Corp. 1Bd/2
Modern Venetian Blinds, Inc. 1Bd/4
Rolscreen Co. 16b/6

blocks

acousticol
Armstrong Cork Co. 11a/3
Guastavino, R., Co. 3b/B
United States Gypsum Co. 11a/12
Waylite Co. 4e/10

asphalt
see flooring—asphalt

flashing
see flashings—blocks, forms and receivers for

glass
American Structural Products Co. 7c/1
American 3 Way-Luxfer Prism Co. 19a/2
Appleman Art Glass Works 7c/2
Pittsburgh Corning Corp. 7c/2a; 7c/3
Richards, J. Merrill 7a/4a

gloss—frames for
see frames—glass block construction; ventilators—glass block construction; windows—glass block construction

glass—joint reinforcement
American Structural Products Co. 7c/1
American 3 Way-Luxfer Prism Co. 19a/2

gloss—ventilators for
see ventilators—glass block construction

glass—windows for
see windows—glass block construction

granite
Cold Spring Granite Co. 4a/1
Eastern Quarries, Inc. 4a/2
Fletcher, H. E., Co. 4a/3
National Building Granite Quarries Assn., Inc. 4a/5
North Carolina Granite Corp. 4a/6

gypsum
see tile—hollow gypsum

insulating
see insulation

lightweight concrete
Durisol, Inc. 3c/13a
Pumice Producers Assn. 4e/5
Waylite Co. 4e/10

limestone
see limestone

nailing concrete
see blocks—lightweight concrete

partition—x-ray protective
see tile

segment—tile
see tile

sandstone
see sandstone

wood
see flooring

products

blower-filter units

Mueller, L. J., Furnace Co. 28e/7a
Rheem Mfg. Ca. 28e/8
Stakol Stoker Ca., Inc. 28f/3

blowers

(see alsa fans; ventilatars)

centrifugal

American Blawer Corp. 28a/2
American Foundry & Furnace Co. 28e/1
Carrier Corp. 28a/3
Century Fan & Ventilator Ca. 19b/5
Clarage Fan Ca. 28a/5
Ilg Electric Ventilating Ca. 28b/9
Joy Mfg. Co. 28b/10
Pryne & Ca., Inc. 28b/11
Trade-Wind Motarfans, Inc. 28b/14
Trane Ca. 28a/8
Waterman-Waterbury Co. 28e/10
Westinghause Electric Corp. 28a/9
Wing, L. J., Mfg. Co. 28d/21

forced draft

Clarage Fan Ca. 28a/5
Ilg Electric Ventilating Ca. 28b/9
Lamsan Carp. 32d/1
Trane Ca. 28a/8

pressure or volume

American Faundry & Furnace Co. 28e/1
Carrier Corp. 28a/3
Ilg Electric Ventilating Co. 28b/9
Lamson Carp. 32d/1
Schwitzer-Cummins Co. 28b/12
Waterman-Waterbury Co. 28e/10
Westinghause Electric Corp. 28a/9

ventilating or exhaust

American Blawer Carp. 28a/2
American Faundry & Furnace Ca. 28e/1
Carrier Corp. 28a/3
Century Fan & Ventilatar Ca. 19b/5
Clarage Fan Co. 28a/5
Ilg Electric Ventilating Co. 28b/9
Jay Mfg. Co. 28b/10
Pryne & Ca., Inc. 28b/11
Schwitzer-Cummins Ca. 28b/12
Trade-Wind Matarfans, Inc. 28b/14
Trane Co. 28a/8
Westinghause Electric Corp. 28a/9

boards

block

see blackboards

bulletin

see bulletin boards

directory

see directaries—building

phenolic fiber

see panels—plastic

plywood

see plywaad

wall

see wallbaard

boilers

breechings for

see metal plate canstruction

cast iron

Bryant Heater Co. 28d/1
Chrysler Corp. 28a/4
Natianal Radiator Ca. 28d/6
Smith, H. B., Co., Inc. 28d/9
Spencer Heater Div. 28d/10
Surface Cambustion Carp. 28d/19
United States Radiatar Carp. 28d/12

coal fired units

Farrar & Trefts, Inc. 28d/2
Fitzgibbons Boiler Ca., Inc. 28d/3
Internatianal Boiler Works Ca. 28d/4
Kewanee Boiler Corp. 28d/5
National Radiator Co. 28d/6
Pacific Steel Boiler Div. 28d/7
Smith, H. B., Ca., Inc. 28d/9
Spencer Heater Div. 28d/10
U. S. Machine Carp. 28f/4
United States Radiator Corp. 28d/12
Waterfilm Boilers, Inc. 28d/12a

feeders for

McDonnell & Miller, Inc. 28c/4

fire tube

Chrysler Corp. 28a/4
Farrar & Trefts, Inc. 28d/2
Fitzgibbons Boiler Co., Inc. 28d/3
Kewanee Boiler Corp. 28d/5
National Radiatar Co. 28d/6
Pacific Steel Boiler Div. 28d/7
Spencer Heater Div. 28d/10

gas fired units

Bryant Heater Co. 28d/1
Chrysler Corp. 28a/4
Farrar & Trefts, Inc. 28d/2
Fitzgibbons Boiler Co., Inc. 28d/3
General Electric Co. 28a/6
International Boiler Warks Ca. 28d/4
Kewanee Boiler Corp. 28d/5
Mueller, L. J., Furnace Co. 28e/7a
National Radiator Co. 28d/6
Pacific Steel Boiler Div. 28d/7
Smith, H. B., Co., Inc. 28d/9
Spencer Heater Div. 28d/10
Surface Combustion Corp. 28d/19
U. S. Machine Corp. 28f/4
United States Radiator Corp. 28d/12
Waterfilm Boilers, Inc. 28d/12a

high pressure

Farrar & Trefts, Inc. 28d/2
Fitzgibbons Boiler Ca., Inc. 28d/3
Internatianal Boiler Works Co. 28d/4
Kewanee Boiler Corp. 28d/5
Smith, H. B., Co., Inc. 28d/9

insulation for

see insulation—high temperature

magazine feed

Spencer Heater Div. 28d/10

oil fired units

Chrysler Corp. 28a/4
Farrar & Trefts, Inc. 28d/2
Fitzgibbons Boiler Co., Inc. 28d/3
General Electric Co. 28a/6
International Boiler Works Ca. 28d/4
Kewanee Boiler Corp. 28d/5
Natianal Radiator Co. 28d/6

boilers *cont.*

oil fired units *cant.*

Pacific Steel Boiler Div. 28d/7
Smith, H. B., Co., Inc. 28d/9
Spencer Heater Div. 28d/10
Stokal Stoker Co., Inc. 28f/3
U. S. Machine Carp. 28f/4
United States Radiatar Carp. 28d/12
Waterfilm Boilers, Inc. 28d/12a

protectors for

McDannell & Miller, Inc. 28c/4
Mercaid Carp. 28c/5
Triplex Heating Specialty Ca., Inc. 28c/8

settings for

Internatianal Chimney Carp. 28g/4

smokeless

Kewanee Boiler Carp. 28d/5
Natianal Radiatar Ca. 28d/6
Smith, H. B., Ca., Inc. 28d/9
Spencer Heater Div. 28d/10

steel

Bryant Heater Co. 28d/1
Chrysler Carp. 28a/4
Farrar & Trefts, Inc. 28d/2
Fitzgibbons Boiler Ca., Inc. 28d/3
Internatianal Boiler Works Ca. 28d/4
Kewanee Boiler Carp. 28d/5
Natianal Radiatar Ca. 28d/6
Pacific Steel Boiler Div. 28d/7
Spencer Heater Div. 28d/10
Stokol Stoker Co., Inc. 28f/3
Surface Combustion Corp. 28d/19
U. S. Machine Corp. 28f/4
United States Radiator Corp. 28d/12
Waterfilm Boilers, Inc. 28d/12a

water treatments for

see filters; water—softeners and treating equipment

water tube

Bryant Heater Co. 28d/1
International Boiler Warks Ca. 28d/4
National Radiator Co. 28d/6
Smith, H. B., Ca., Inc. 28d/9
Stakal Stoker Co., Inc. 28f/3
United States Radiatar Corp. 28d/12
Waterfilm Boilers, Inc. 28d/12a

bolts

door or window

Adams-Rite Mfg. Co. 17b/1a
Ceco Steel Products Carp. 16a/7
Crittall-Federal, Inc. 16a/9
Lockwood Hardware Mfg. Co. 17b/3
Richards-Wilcox Mfg. Co. 17a/10
Von Duprin Div. 17b/5

expansion

Hahmann & Barnard, Inc. 3f/3
Rawlplug Ca., Inc. 3f/4

fire exit

see exit hardware; hardware

lavatory door

American Sanitary Partition Ca. 21b/2
Chicago Spring Hinge Co. 17b/7
Lockwood Hardware Mfg. Ca. 17b/3
Weis, Henry, Mfg. Co., Inc. 21b/7

toggle

Hohmann & Barnard, Inc. 3f/3

bonding compounds

Acme Asbestos Covering & Flooring Co. 13c/6
Aquabar Co. 9a/3
Ceresit Waterproofing Corp. 9a/6
Flintkote Co. 13d/2
Master Builders Co. 9a/13
Miracle Adhesives Corp.....13J/3
Sika Chemical Corp. 9a/16
Toch Brothers Inc. 9a/19
Tuckahoe Stucco Corp. 4e/7

bookstacks

Art Metal Construction Co. 22a/10
General Fireproofing Co. 22g/1
Remington Rand Inc. 22d/8
Virginia Metal Products Corp. 22d/9

accessories for
Art Metal Construction Co. 22a/10
General Fireproofing Co. 22g/1
Remington Rand Inc. 22d/8
Virginia Metal Products Corp. 22d/9

booths

broadcasting
Vasconcellos, Joseph, Inc.....22e/1

telephone
see *telephone*

borings

see *test boring and prospecting*

bowling alleys

see *recreation equipment*

boxes

electric clock or fan hanger outlet
Adam, Frank, Electric Co.....29a/1
Bryant Electric Co.....29c/1
Hart & Hegeman Div.....29c/2

electrical outlet
Adam, Frank, Electric Co.....29a/1
All-Steel Equipment Inc.....22c/1
General Electric Co.....29b/1
Hart & Hegeman Div.....29c/2

fire alarm
see *alarms—fire*

gutter—street
Contractors Foundry 6h/1
Flockhart Foundry Co.....6h/2

hydrant
see *hydrants—fire—boxes for*

letter
see *letter boxes*

mail chute
see *chutes—mail*

meter
Robinson Clay Product Co.....26a/6

register
see *dampers or registers*

valve
Flockhart Foundry Co.....6h/2

wall—hanger
Cleveland Steel Specialty Co., Inc.....3f/1
Duplex Hanger Co.....3f/2

brackets

bench or seat
Allith-Prouty, Inc. 17a/8
Contractors Foundry 6h/1
Hohmann & Barnard, Inc.....3f/3

column
see *caps and bases*

hand rail
Blum, Julius, & Co., Inc.....6e/5
Hohmann & Barnard, Inc.....3f/3

lamp
see *lighting fixtures*

pipe
see *hangers—pipe*

radiator
Shaw-Perkins Mfg. Co.....28d/14
United States Radiator Corp.....28d/12

shelving
see *hardware*

showcase
Knape & Vogt Mfg. Co.....17b/13

breechings

see *metal plate construction*

brick

acid resistant
Acme Brick Co.....4d/1
Arketex Ceramic Corp. 4d/2
Claycraft Co. 4d/3
Drehmann Paving & Flooring Co.....13c/8
Elgin-Butler Brick Co.....4d/4
Hanley Co. 4d/6
Knight, Maurice A.....26b/3
Stark Brick Co.....4d/9

asphalt
see *flooring—asphalt tile*

common
Acme Brick Co.....4d/1
Elgin-Butler Brick Co.....4d/4
National Fireproofing Corp.....4d/8

face or front
Acme Brick Co.....4d/1
Arketex Ceramic Corp. 4d/2
Claycraft Co. 4d/3
Elgin-Butler Brick Co.....4d/4
Facing Tile Institute.....4d/5
Hanley Co. 4d/6
Hocking Valley Brick Co.....4d/7
National Fireproofing Corp.....4d/8
Pearson Brick Co.....4d/8a
Stark Brick Co.....4d/9

fire
see *refractory*

floor
Acme Brick Co.....4d/1
Claycraft Co. 4d/3
Drehmann Paving & Flooring Co.....13c/8
Elgin-Butler Brick Co.....4d/4
Hanley Co. 4d/6
Knight, Maurice A.....26b/3
Stark Brick Co.....4d/9

glass
see *blocks—glass*

brick *cont.*

glazed—ceramic
Arketex Ceramic Corp. 4d/2
Claycraft Co. 4d/3
Elgin-Butler Brick Co.....4d/4
Facing Tile Institute.....4d/5
Hanley Co. 4d/6
National Fireproofing Corp.....4d/8
Stark Brick Co.....4d/9

glazed—salt
Facing Tile Institute.....4d/5
National Fireproofing Corp.....4d/8
Stark Brick Co.....4d/9

hollow
see *tile*

insulating
Acme Brick Co.....4d/1
Arketex Ceramic Corp. 4d/2
Elgin-Butler Brick Co.....4d/4
Stark Brick Co.....4d/9

mortar for
see *cement; lime*

period
Pearson Brick Co.....4d/8a

refractory
see *refractory—brick or block*

unglazed
Claycraft Co. 4d/3
Elgin-Butler Brick Co.....4d/4
Facing Tile Institute.....4d/5

bridges

see *structural—steel—fabricators, designers and welders; trusses*

bridging

Bethlehem Steel Co.....3d/2
Ceco Steel Products Corp.....3d/3
Hohmann & Barnard, Inc.....3f/3
Laclede Steel Co. 3d/5
Truscon Steel Co.....3d/9

bronze

extruded
see *shapes*

ornamental
see *metal—ornamental*

brooms

yarn
see *maps*

bubblers

see *fountains—drinking*

bucks

see *frames—door*

building contractors

commercial or industrial
Barnes, James I., Construction Co.....1a/1
H. R. H. Construction Corp.....1a/3
O'Connor, Thomas, & Co., Inc.....1a/4
Terminal Construction Co.....1a/5

products

building contractors cont.

repair, reconstruction, etc.
see repair and restoration—buildings, bridges, dams, etc.

residential
H. R. H. Construction Corp.....1a/3
O'Connor, Thomas, & Co., Inc.....1a/4
Terminal Construction Corp.....1a/5

buildings

paper and felts for
see paper and felts

portable
Great Lakes Steel Corp.....3d/4

prefabricated
Cemenstone Corp. 3b/2
Great Lakes Steel Corp.....3d/4
Timber Structures, Inc. 3b/9

prefabricated parts for
Cemenstone Corp. 3b/2
Great Lakes Steel Corp.....3d/4

steel
Great Lakes Steel Corp.....3d/4
Macomber Inc. 3d/8
Rabberson Steel Co.....1b/6

bulkheads

see doors—bulkhead

bulletin boards

(see also tablets; directories)
Acme Bulletin & Directory Board Corp. 22a/1
Armstrong Cork Co.....13e/2
Austral Sales Corp.....17b/14
Beckley-Cardy Co. 22d/1
Claridge Products, Inc.....22d/2
Gotham Weatherstrip Co., Inc.....22d/2a
New York Silicate Book Slate Co., Inc...22d/4
Reliance Art Metal Co.....15a/16
Remington Rand Inc.....22d/8
Rowles, E. W. A., Co.....22d/5
Son-Nel Products Co.....22d/5a
Tablet & Ticket Co.....22a/4
Weber Costello Co.....22d/6

changeable letter or strip
Acme Bulletin & Directory Board Corp. 22a/1
Tablet & Ticket Co.....22a/4

mounting systems for
see blackboards

bumpers

door
American Sanitary Partition Co.....21b/2
Lockwood Hardware Mfg. Co.....17b/3

bunker pans

Market Forge Co.....22b/6

burners

(see also furnaces; boilers)

conversion unit—gas
Bryant Heater Co.....28d/1
Drava Corp. 2Be/4
Jackson & Church Co.....2Be/6

burners cont.

conversion unit—gas cont.
Mueller, J. L., Furnace Co.....28e/7a
Surface Combustion Corp.....28d/19
U. S. Machine Corp.....28f/4
Waterman-Waterbury Co. 28e/10

conversion unit—oil
Chrysler Corp. 28a/4
Drava Corp. 28e/4
General Electric Co.....28a/6
Jackson & Church Co.....28e/6
Mueller, L. J., Furnace Co.....2Be/7a
Petroleum Heat & Power Co.....28f/6
Stokal Stoker Co., Inc.....28f/3
U. S. Machine Corp.....28f/4
Waterman-Waterbury Co. 28e/10

garbage
see incinerators

busbar systems

see conduit

butts

see hinges

buzzers

see bells and buzzers

C

cabinet work

Carr, Adams & Collier Co.....Sc/1
Curtis Companies Service Bureau.....Sc/2
Nuroca Woodwork Mfg. Div.....5c/3
Western Pine Assn.....Sa/4

cabinets

accessories for
American Central Div.....23a/1
Berger Mfg. Div.....23a/2
General Electric Co.....23a/5
Geneva Modern Kitchens, Inc.....23a/6
Harrison Steel Cabinet Co.....23a/8
Kitchen Maid Corp.....23a/11
Midwest Mfg. Co.....23a/12
Miller Metal Products, Inc.....23a/13
Mullins Mfg. Corp.....23a/14
St. Charles Mfg. Co. 23a/17
Standard Steel Equipment Co., Inc.....22c/8
Steel Kitchen Cabinet Institute.....23a/18
Wood Metal Industries, Inc.....23a/21

bathroom
see bathroom accessories—cabinets

blackboard or bulletin board combination
New York Silicate
Book Slate Co., Inc.....22d/4

broom
American Central Div.....23a/1
Berger Mfg. Div.....23a/2
Carr, Adams & Collier Co.....Sc/1
Curtis Companies Service Bureau.....Sc/2
Midwest Mfg. Co.....23a/12

cabinets cont.

broom cont.
Miller Metal Products, Inc.....23a/13
Mullins Mfg. Corp.....23a/14
St. Charles Mfg. Co.....23a/17
Wood Metal Industries, Inc.....23a/21

china
Carr, Adams & Collier Co.....Sc/1
Curtis Companies Service Bureau.....Sc/2

filing
see filing equipment

fire extinguisher
Allen, W. D., Mfg. Co.....27c/1
Elkhart Brass Mfg. Co.....27c/2

hardware for
see hardware

base
Allen, W. D., Mfg. Co.....27c/1
Elkhart Brass Mfg. Co.....27c/2

hospital
Blickman, S., Inc.....23b/1
General Fireproofing Co.....22g/1
Jamestown Metal Products, Inc.....22g/2
Ketcham, G. M., Mfg. Corp.....24c/11
Ohio Chemical & Mfg. Co.....22g/2a
St. Charles Mfg. Co.....23a/17
Watson Mfg. Co., Inc.....22g/3

instrument
see cabinets—hospital

ironing board
Carr, Adams & Collier Co.....Sc/1

key
All-Steel Equipment Inc.....22c/1
Moore, P. O., Inc.....17b/1

kitchen—metal
American Central Div.....23a/1
Berger Mfg. Div.....23a/2
Blickman, S., Inc.....23b/1
Frigidaire Div. 23a/4a
General Electric Co.....23a/5
Geneva Modern Kitchens, Inc.....23a/6
Harrison Steel Cabinet Co.....23a/8
Hotpoint Inc. 23a/9
Midwest Mfg. Co.....23a/12
Miller Metal Products, Inc.....23a/13
Mullins Mfg. Corp.....23a/14
St. Charles Mfg. Co.....23a/17
Steel Kitchen Cabinet Institute.....23a/18

kitchen—wood
Carr, Adams & Collier Co.....Sc/1
Curtis Companies Service Bureau.....Sc/2
Kitchen Maid Corp.....23a/11
Mutschler Bros. Co.....23a/15
Wood Metal Industries, Inc.....23a/21

linen
American Central Div.....23a/1
Berger Mfg. Div.....23a/2
Carr, Adams & Collier Co.....Sc/1
General Fireproofing Co.....22g/1
Geneva Modern Kitchens, Inc.....23a/6
Jamestown Metal Products, Inc.....22g/2
Ketcham, G. M., Mfg. Corp.....24c/11
Miami Cabinet Div.....24c/13
Midwest Mfg. Co.....23a/12
Mullins Mfg. Corp.....23a/14
St. Charles Mfg. Co.....23a/17

cabinets cont.

linen cont.
Virginia Metal Products Carp.....15a/20
Watson Mfg. Co., Inc.....22g/3
Wood Metal Industries, Inc.....23a/21

medicine
see cabinets—hospital; bathroom accessories —cabinets

radiator
see radiators—covers and cabinets for

safe
see safes

shower bath
see shower baths—cabinet unit

sink
see sinks—kitchen cabinet; cabinets—undersink

storage
All-Steel Equipment Inc.....22c/1
Art Metal Construction Co.....22a/10
Berger Mfg. Div.....22c/2
Blickman, S., Inc.....23b/1
Carr, Adams & Collier Co.....5c/1
Dwyer Products Corp.....23a/3
Fairhurst, John T., Co.....22c/3
General Electric Co.....23a/5
General Fireproofing Co.....22g/1
Genevo Modern Kitchens, Inc.....23a/6
Jamestown Metal Products, Inc.....22g/2
Ketcham, G. M., Mfg. Corp.....24c/11
Lyon Metal Products, Inc.....22c/4
Market Forge Co.....22b/6
Medart, Fred, Mfg. Co.....22c/5
Miami Cabinet Div.....24c/13
Midwest Mfg. Co.....23a/12
Mullins Mfg. Corp.....23a/14
Murphy Door Bed Co.....22i/2
Nuraca Woodwork Mfg. Div.....5c/3
Penn Metal Corp. of Penna.....22c/6
St. Charles Mfg. Co.....23a/17
Standard Steel Equipment Co., Inc....22c/8
Steel Kitchen Cabinet Institute.....23a/1B
Watson Mfg. Co., Inc.....22a/11; 22g/3
Wood Metal Industries, Inc.....23a/21

tops for
see taps

towel
see bathroom accessories

undersink
American Central Div.....23a/1
Berger Mfg. Div.....23a/2
Carr, Adams & Collier Co.....5c/1
Curtis Campanies Service Bureau.....5c/2
Elier Co. 24a/1
Frigidaire Div. 23a/4a
General Electric Co.....23a/5
Geneva Modern Kitchens, Inc.....23a/6
Harrisan Steel Cabinet Co.....23a/8
Hotpaint Inc. 23a/9
Kitchen Maid Corp.....23a/11
Midwest Mfg. Co.....23a/12
Miller Metal Products, Inc.....23a/13
Mullins Mfg. Corp.....23a/14
Mutschler Bros. Co.....23a/15
St. Charles Mfg. Co.....23a/17
Steel Kitchen Cabinet Institute.....23a/1B
Wood Metal Industries, Inc.....23a/21

cabinets cont.

utility
American Central Div.....23a/1
Berger Mfg. Div.....23a/2
Carr, Adams & Collier Co.....5c/1
Dwyer Products Corp.....23a/3
General Electric Co.....23a/5
General Fireproofing Co.....22g/1
Genevo Modern Kitchens, Inc.....23a/6
Hotpoint Inc. 23a/9
Ketchom, G. M., Mfg. Corp.....24c/11
Miami Cabinet Div.....24c/13
Midwest Mfg. Co.....23a/12
Miller Metal Products, Inc.....23a/13
Mullins Mfg. Corp.....23a/14
Murphy Door Bed Co.....22i/2
Mutschler Bros. Co.....23a/15
St. Charles Mfg. Co.....23a/17
Standard Steel Equipment Co., Inc....22c/8
Steel Kitchen Cabinet Institute.....23a/1B
Wood Metal Industries, Inc.....23a/21

x-ray film storage or transfer
Bar-Roy Products, Inc.....21d/1

x-ray viewing
General Fireproofing Co.....22g/1
Watsan Mfg. Co., Inc.....22g/3

cables
see wire and cables—electric

cabs

elevator
see elevators—cars for

caenstone

reproduction
see paint—texturing; plaster—texturing

cafeteria equipment
Blickman, S., Inc.....23b/1
Elkay Mfg. Co.....23a/4
Habart Mfg. Co.....23b/2
Market Forge Co.....22b/6
Olson, Samuel, Mfg. Co., Inc.....23b/4a
Pauly Jail Building Co.....22h/2
Van, John, Range Co.....23b/5

cages
see partitions

caging

beam, girder or column
Conver Steel & Wire Co.....3e/2
Laclede Steel Co.....3d/5
United States Gypsum Co.....12b/3

caisson contractors
(see also piling contractors and engineers)
Drilled-In Caissan Carp.....2a/1
Raymand Concrete Pile Co.....2a/3
Spencer, White & Prentis, Inc.....2a/4
Western Foundation Co.....2a/5

caissons
see piles or piling; caissan contractors

calcimine
see paint

calking
see caulking—compounds

candelabras
see lighting fixtures

canopies
(see also awnings; marquees)

door
Aluminum Awning Co.....18e/1
Russell, F. C., Co.....18a/7

cans

ash—hoisting
Patts Ash Haist Carp.....32c/2

canvas

cement and preservatives for
Cuprinal Div. 5d/3
Kuhls, H. B. Fred.....9a/11

flashing
see waterproofing—membrane method—fabric

wall coverings
see wall coverings

capitals
see caps and bases

caps

vent flue
see ventilators

caps and bases

column or post
Blum, Julius, & Co., Inc.....6e/5
Cleveland Steel Specialty Co., Inc.....3f/1
Donley Brothers Co.....2Bg/5
Duplex Hanger Co.....3f/2
Hartmann-Sanders Co. 5c/5
Hahmann & Barnard, Inc.....3f/3
Lally Column Co.....3d/6
North Caralina Granite Corp.....4a/6
Schwerd, A. F., Mfg. Co.....5c/6

carillons
Deagan, J. C., Inc. 22e/3
Gillett & Johnston, Ltd.....22e/4
Maas Organ Co.....22e/5
Schulmerich Electronics, Inc.....22e/6
Stromberg-Carlsan Co. 31b/5a

carpets
see rugs and carpets

carrels
see library equipment

carriers or supports

lavatory, urinal, toilet
see lavatories—carriers or supports for; toilet—carriers or supports for

products

carrying systems

see conveyors; tube systems—pneumotic

casement

hardware
see hardware

weatherstrips
see weatherstrips

windows
see windows

cases

(see also exhibits)

display
Frigidoire Div. 23a/4o
General Fireproofing Co.....22g/1
Houserman, E. F., Co.....21a/2
New York Silicote Book Slate Co., Inc..22d/4
Nuroco Woodwork Mfg. Div.....5c/3
Remington Rond Inc.....22d/8
Spencer Studios, Inc.....22a/3
Universal Corp. 16a/36

museum or treasure room
General Fireproofing Co.....22g/1
Remington Rond Inc.....22d/8

casings

metal
Art Metal Construction Co.....15o/4
Crittoll-Federol, Inc. 16o/9
Detroit Steel Products Co.....16o/13
Hope's Windows Inc.....16o/20
Inland Steel Products Co.....12a/3
Knapp Bros. Mfg. Co.....12a/4a
National Fireworks, Inc.....16a/23
Reliance Art Metal Co.....15o/16
Reynolds Metals Co.....16a/25a
Richmand Fireproof Door Co.....15o/18
Truscon Steel Co.....3d/9; 16a/34
United States Gypsum Co.....12b/3
Willioms & Williams Products Corp..16o/39
Wallaeger Steel Corp.....12a/9

pipe
see pipe—underground or overhead systems—insulated; insulation—high temperature

wood
Croft Steel Products, Inc.....16o/10
Curtis Companies Service Bureau.....5c/2
Detroit Steel Products Co.....16o/13
Hope's Windows Inc.....16a/20
National Fireworks, Inc.....16a/23
Rolscreen Co. 16b/6

castings

aluminum
Aluminum Co. of America.....6a/1
Birmingham Ornamental Iron Co., Inc..6e/3
Blum, Julius, & Co., Inc.....6e/5
Fiske, J. W., Iron Works.....6e/6
Flaur City Ornamental Iron Co.....6e/6a
Illinois Bronze Works.....6e/8
Newman Brothers, Inc.....6e/10
Universal Corp. 16a/36

castings cont.

bross or bronze
Birmingham Ornamental Iron Co., Inc....6e/3
Blum, Julius, & Co., Inc.....6e/5
Fiske, J. W., Iron Works.....6e/6
Flaur City Ornamental Iron Co.....6e/6a
Illinois Bronze Co.....6e/8
Newman Brothers, Inc.....6e/10
United States Bronze Sign Co., Inc.....22a/5

iron
Birmingham Ornamental Iron Co., Inc....6e/3
Contractors Foundry 6h/1
Fiske, J. W., Iron Works.....6e/6
Flackhart Foundry Co.....6h/2
Robberson Steel Co.....1b/6

steel or stainless steel
Allegheny Ludlum Steel Corp.....6c/1
Birmingham Ornamental Iron Co., Inc...6e/3
Blum, Julius, & Co., Inc.....6e/5

catchbasin

covers and gratings
Contractors Foundry 6h/1
Fiske, J. W., Iron Works.....6e/6
Flockhart Foundry Co.....6h/2

caulking

compounds
Accurate Metal Weather Strip Co., Inc. 18b/1
American Structural Products Co.....7c/1
Anti-Hydro Waterproofing Co.....9a/2
Aquabar Co. 9a/3
Armstrong Cork Co.....10b/1
Barclay Mfg. Co., Inc.....13i/1
Ceresit Waterproofing Corp.....9a/6
Concord Paint Co., Inc.....7b/1
Cork Import Corp.....10b/2
Horn, A. C., Co., Inc.....9a/10
Kedmont Mfg. & Waterproofing Co....9a/10o
Kuhls, H. B. Fred.....9a/11
Marsh Wall Products, Inc.....13i/8
Minwox Co., Inc.....9a/14
Pecora Paint Co., Inc.....7b/2
Sika Chemical Corp.....9a/16
Sonnebarn, L., Sons, Inc.....9a/17
Standard Varnish Works 14/19b
Toch Brothers Inc.....9a/19
Tremco Mfg. Co.....7b/3

contractors
Guaranteed Waterproofing Co.....1b/4

ceiling construction

see floor construction; roof construction

ceilings

acousticol
see tile—acousticol; ceilings—suspended systems

aluminum
Kawneer Co. 6o/2; 30a/12

louvered fluorescent lighting for
see lighting fixtures—fluorescent

suspended systems
American Acoustics, Inc.....11a/1
Armstrong Cork Co.....11o/3

ceilings cont.

suspended systems cont.
Celotex Corp. 11a/3a
Concrete Reinforcing Steel Institute....3b/3
Federal Enterprises, Inc.....30a/6a
Houserman, E. F., Co.....21a/2
Johns-Manville 11a/5
Kawneer Co. 30a/12
Mohon, R. C., Co.....3c/6
Mid-West Acoustical & Supply Co.....11b/3
National Gypsum Co.....12b/2
Pittsburgh Steel Products Co.....12a/6
Pomeroy, S. H., Co.....11b/2
Sanymetal Products Co., Inc.....11b/1
United States Gypsum Co.....12b/3

vaulted
Guastavino, R., Co.....3b/8
Roberts & Schoefer Co.....3b/5

cells

prison
see jail equipment

cement

accelerators for
see accelerators

acid or alkali-proof
Armstrong Cork Co.....10b/1
Pecora Paint Co., Inc.....7b/2

bituminous, plastic, resinous, etc.
Armstrong Cork Co.....10b/1
Flintkote Co. 13d/2
Minwax Co., Inc.....9a/14
Miracle Adhesives Corp.....13J/3
Ruberoid Co. 8o/7

boiler
see refractory

caulking
see caulking—compounds

colors for
see colors—mortar, cement, etc.

curing
see concrete—curing materials

elastic
see waterproofing—integral; caulking—compounds; cement—grouting or pointing

fire brick
see refractory

floors
see flooring

for application of acoustical materials
Armstrong Cork Co.....10b/1
Insulite Div. 10a/10

for application of insulation
Armstrong Cork Co.....10b/1
Cork Import Corp.....10b/2
Cork Insulation Co., Inc.....10b/3
Insulite Div. 10a/10
Kuhls, H. B. Fred.....9o/11
Miracle Adhesives Corp.....13J/3
Wood Conversion Co.....10a/20

glazing
see glazing compounds

cement cont.

grouting or pointing
Adensite Co., Inc.....9a/1
Anti-Hydro Woterproofing Co.....9a/2
Aquabor Co. 9a/3
Corey, Philip, Mfg. Co.....Bc/3
Ceresit Woterproofing Corp.....9a/6
Horn, A. C., Co., Inc.....9a/10
Kedmont Mfg. & Woterproofing Co...9a/10o
Kuhls, H. B. Fred.....9o/11
Moster Builders Co.....9o/13
Medusa Portlond Cement Co.....4e/2
Minwax Co., Inc.....9o/14
Portlond Cement Assn.....4e/4
Siko Chemical Corp.....9a/16
Stonhord Co. 13c/12
Toch Brothers Inc.....9o/19
Tremco Mfg. Co.....7b/3
Truscon Loborotories 9a/20
Western Woterproofing Cos.....9o/21

grouting or pointing—contractors for
see grouting contractors

gypsum
see plaster—gypsum

hordeners for
see hordeners and densifiers

high early strength
see cement—portland—high early strength

insulating
see insulation—high temperature; refractory—cement or mortar

keene's
see plaster—keene's cement

magnesite composition
see flooring—magnesium oxychloride cement

magnesium oxychloride
see flooring—magnesium oxychloride cement

masonry
Louisville Cement Co., Inc.....4e/1
Meduso Portlond Cement Co.....4e/2
North Americon Cement Corp.....4e/3
United Stotes Gypsum Co.....12b/3

mastic—for application of wallboard, flooring, etc.
Acme Asbestos Covering & Flooring Co. 13c/6
Armstrong Cork Co.....10b/1; 13e/2
Barclay Mfg. Co., Inc.....13i/1
Bruce, E. L., Co.....13g/2
Cambridge Tile Mfg. Co.....13b/1
Ceresit Woterproofing Corp.....9o/6
Flintkote Co. 13d/2
Insulite Div. 10o/10
Morsh Wall Products, Inc.....13i/B
Mostic Tile Corp. of America.....13d/6
Miracle Adhesives Corp.....13J/3
Moulding, Thos., Floor Mfg. Co.....13d/7
Storm Flooring Co., Inc.....13g/8
Tile-Tex Co., Inc.....13d/B
Tyloc Co. 13i/10
Wood Conversion Co.....10o/20

non-staining
Medusa Portland Cement Co.....4e/2

point for
see point

cement cont.

patching and resurfacing
Acme Asbestos Covering & Flooring Co. 13c/6
Aquobor Co. 9a/3
Armstrong Cork Co.....13e/2
Ceresit Woterproofing Corp.....9a/6
Flintkote Co. 13d/2
Glidden Co. 14/6
Haynes Products Co.....9o/9
Horn, A. C., Co., Inc.....9a/10
Kedmont Mfg. & Waterproofing Co....9a/10a
Moster Builders Co.....9o/13
Moulding, Thos., Floor Mfg. Co.....13d/7
Primo Products Inc.....9o/15
Sika Chemicol Corp.....9a/16
Stonhord Co. 13c/12
Truscon Loborotories 9o/20
Western Woterproofing Co.....9o/22
Western Waterproofing Cos.....9o/21

portland
Meduso Portlond Cement Co.....4e/2
North Americon Cement Corp.....4e/3
Portlond Cement Assn.....4e/4
Trinity Div. 4e/6
Universal Atlos Cement Co.....4b/3; 13c/5

portlond—high early strength
Medusa Portlond Cement Co.....4e/2
North Americon Cement Corp.....4e/3
Portland Cement Assn.....4e/4

portland—waterproofed
Medusa Portlond Cement Co.....4e/2
Trinity Div. 4e/6

portland—white
Meduso Portlond Cement Co.....4e/2
Portlond Cement Assn.....4e/4
Trinity Div. 4e/6
Universol Atlos Cement Co.....4b/3; 13c/5

refractory
see refractory

roof tile
see roof construction—concrete slab

roofing
Americon Aspholt Roof Corp.....8o/1
Borrett Div. Bo/2
Corey, Philip, Mfg. Co.....8a/3; Bb/2; Bc/3
Ceresit Woterproofing Corp.....9o/6
Flintkote Co. 8o/4
Haynes Products Co.....9o/9
Johns-Monville 8o/5
Kedmont Mfg. & Woterproofing Co....9o/10o
Koppers Co., Inc.....8o/6
Pecoro Point Co., Inc.....7b/2
Ruberoid Co. Bo/7
Stonhord Co. 13c/12

rubber
Okonite Co. 29b/3

slater's
see cement—roofing

tile setting
Armstrong Cork Co.....13e/2
Combridge Tile Mfg. Co.....13b/1
Flintkote Co. 13d/2
Kuhls, H. B. Fred.....9a/11
Meduso Portlond Cement Co.....4e/2
Metol Tile Products, Inc.....13b/7
Miracle Adhesives Corp.....13J/3
Moulding, Thos., Floor Mfg. Co.....13d/7

cement cont.

tile setting cont.
Pecoro Point Co., Inc.....7b/2
Tile-O-Chrome Corp. 13b/9
Wood Conversion Co.....10a/20

wallboard—joint finishing
see wallboard—joint finishers

waterproofing
see waterproofing

cesspools
see drains; septic tanks

chains

sash
Hohmann & Bornard, Inc.....3f/3

chairs

auditorium
see seats

bar—concrete reinforcement
see clips

library
see library equipment

metal
see furniture—metal

pipe
see hangers—pipe

portable
see furniture

wood
see furniture—wood

chalkboards
see blackboards

chalk troughs
see blackboards—chalk troughs for

channels

furring and studding
see furring and studding

stringer
see stairs—metal—channel stringer for

structural
see shapes—metal—structural; shapes—metal—extruded

checkroom equipment
Vogel-Peterson Co. 22c/9

checks and closers

door
Bommer Spring Hinge Co. Inc.....17b/6
Butcher Boy Cold Storage Door Co.....22b/2
Dusing & Hunt, Inc.....15a/9
Ellison Bronze Co., Inc.....15o/10
LCN Closers, Inc.....17b/10
Lockwood Hardware Mfg. Co.....17b/3
Pittsburgh Plate Glass Co.....15b/2
Richmond Fireproof Door Co.....15a/17
Yale & Towne Mfg. Co.....17b/12

products

chemical

anaylsis and research
see testing services

apparatus and equipment
see ammania control apparatus; chlarine control apparotus

stoneware
see staneware—chemicol

chests

burglar-proof
see safes

tool
Penn Metal Carp. af Penna.....22c/6

chimes

tower
see carillans

chimneys

common or radial brick
American Incineratar Carp.....25a/1
Cansalidated Chimney Ca.....28g/1
Custadis, Alphons, Chimney Canstructian Ca. 28g/2
Cutshall, J. M., & Sans.....28g/3
Internatianal Chimney Carp.....28g/4
St. Lauis Lightning Protectian Ca.....22i/5

linings for
Acme Brick Ca.....4d/1
American Incinerator Carp.....25a/1
Cansalidated Chimney Ca.....28g/1
Custadis, Alphans, Chimney Canstructian Ca. 28g/2
Cutshall, J. M., & Sans.....28g/3
International Chimney Carp.....28g/4
Rabinsan Clay Products Ca.....26a/6

linings for—acid resistant
Acme Brick Ca.....4d/1
Cansalidated Chimney Ca.....28g/1
Custadis, Alphons, Chimney Canstructian Co. 28g/2
International Chimney Carp.....28g/4
Robinsan Clay Praducts Co.....26a/6

reinforced concrete
Cansalidated Chimney Ca.....28g/1
Custadis, Alphons, Chimney Canstructian Ca. 28g/2
St. Lauis Lightning Pratectian Ca.....22i/5

repairing and remodeling of
American Incineratar Carp.....25a/1
Cansalidated Chimney Ca.....28g/1
Custadis, Alphons, Chimney Canstructian Ca. 28g/2
Cutshall, J. M., & Sons.....28g/3
Internatianal Chimney Carp.....28g/4
St. Lauis Lightning Pratectian Ca.....22i/5
Western Waterpraofing Cos.....9o/21

steel
Internatianal Chimney Carp.....28g/4

tops for
Rabinsan Clay Praducts Ca.....26a/6

chlorine control apparatus

water, sewage and swimming pool purification
Paddack Paal Equipment Ca.....22f/5
Permutit Co. 27a/17
Wallace & Tiernan Ca., Inc.....22f/6

church furnishings

see carillans; furniture; metal—ornamental; benches; waadwork

chutes

coal
Danley Brathers Ca.....28g/5
Hahmann & Barnard, Inc.....3f/3
Majestic Co. 28g/8
Truscan Steel Ca.....16a/34

fire escape
see fire—escapes

gravity
Wilkinsan Chutes, Inc.....24d/3

laundry
Canstructian Praducts Carp.....24d/2
Wilkinsan Chutes, Inc.....24d/3

laundry—doors for
Bennett Mfg. Ca.....24c/2a
Canstructian Praducts Carp.....24d/2
Danley Brathers Ca.....28g/5
Miami Cabinet Div.....24c/13
Wilkinsan Chutes, Inc.....24d/3

mail
Cutler Mail Chute Co.....22a/6

rubbish
Canstructian Praducts Carp.....24d/2
Washburn & Granger, Inc.....25a/5
Wilkinsan Chutes, Inc.....24d/3

circuit breakers

Adam, Frank, Electric Ca.....29a/1
BullDag Electric Praducts Ca.....29a/2
Federal Electric Products Co., Inc.....29a/3
General Electric Ca.....29a/4
Trumbull Electric Mfg. Ca.....29a/5
Westinghause Electric Corp.....29a/6

circulators

heating system
see heating systems

clamps

beam, column, joist, wall, etc
(see also forms—concrete—ties, clamps, etc.)
Baker-Raas, Inc. 3e/1
Grinnell Co., Inc.....26a/3
Hahmann & Barnard, Inc.....3f/3

pipe hanger
Grinnell Co., Inc.....26a/3

classroom equipment

see blackbaards; labaratary equipment; furniture

cleaners

vacuum
see vacuum cleaners

cleaners and polishes

floor, wall, furniture, etc.
Bruce, E. L., Ca.....13g/2
du Pant de Nemaurs, E. I., & Ca. (Inc)..14/3
Durafiex Corp. 13d/1
Haynes Products Ca.....9a/9
Hillyard Sales Cas.....13h/1
Harn, A. C., Ca., Inc.....9a/10
Marsh Wall Praducts, Inc.....13i/8
Masury-Yaung Ca. 13h/2
Metal Tile Products, Inc.....13b/7
Minwax Ca., Inc.....14/9
Maulding, Thas., Flaar Mfg. Ca.....13d/7
Tylac Ca. 13i/10
Vikan Tile Carp.....13b/10

cleaning contractors

sand blast, steam, etc.
Guaranteed Waterpraafing Ca.....1b/4

cleanouts

Baasey, Norman, Mfg. Ca.....?7e/2

clips

anchor—acoustical ceiling
Canver Steel & Wire Ca.....3e/2
Insulite Div. 10a/10
Mid-West Acoustical & Supply Ca.....11b/3
Pameray, S. H., Ca.....11b/2
Sanymetal Products Ca., Inc.....11b/1
United States Gypsum Co.....12b/3

bar—concrete reinforcing
Bethlehem Steel Ca.....3d/2
Conver Steel & Wire Ca.....3e/2

beam reinforcement
Bethlehem Steel Ca.....3d/2
Canver Steel & Wire Ca.....3e/2
Hahmann & Barnard, Inc.....3f/3
Truscan Steel Co.....3d/9

floor sleeper
Bethlehem Steel Co.....3d/2
Canver Steel & Wire Ca.....3e/2
Galdsmith Metal Lath Ca.....3b/4
Hahmann & Barnard, Inc.....3f/3

lath
Alabama Metal Lath Ca.....12a/1
Bethlehem Steel Ca.....3d/2
Canver Steel & Wire Ca.....3e/2
Galdsmith Metal Lath Ca.....3b/4
Inland Steel Products Ca.....12a/3
National Gypsum Ca.....12b/2
Pittsburgh Steel Products Ca.....12a/6
Simplan Products Div.....12a/7
Truscan Steel Ca.....3d/9
United States Gypsum Ca.....12b/3
Wood Canversion Co.....10a/20

soffit
see caging

clocks and clock systems

electric
Bach, Oscar 8., Industries, Inc.....6e/1
Gillett & Johnston, Ltd.....22e/4
International Business Machines Corp...31c/1
Maas Organ Co. 22e/5
Schulmerich Electronics, Inc.....22e/6
Self Winding Clock Co., Inc.....31c/2
Stromberg Time Corp.....31c/3

hanger outlets for
see boxes—electric clock or fan hanger outlet

program
International 8usiness Machines Corp...31c/1
Maas Organ Co.....22e/5
Schulmerich Electronics, Inc.....22e/6
Self Winding Clock Co., Inc.....31c/2
Stromberg Time Corp.....31c/3

self winding
Self Winding Clock Co., Inc.....31c/2

tower
Gillett & Johnston, Ltd.....22e/4
International Business Machines Corp...31c/1
Maas Organ Co.....22e/5
Self Winding Clock Co., Inc.....31c/2

closers

door
see checks and closers; operators—door

door—elevator
see operators—elevator door

closets

(see also cabinets; wardrobes)

flush valves for
see valves

garment carriers for
Knape & Vogt Mfg. Co.....17b/13
Vogel-Peterson Co. 22c/9

lining for
8ruce, E. L., Co.....13g/2

partitions
see partitions

prefabricated unit
Virginio Metal Products Corp.....15a/20

racks and equipment for
Knape & Vogt Mfg. Co.....17b/13
Reliable Metal Novelty Co., Inc.....24c/15
Vogel-Peterson Co. 22c/9

seats for
see toilet—seats

water
Eljer Co. 24a/1
Richmond Radiator Co.....24o/2

closure strips

see strips

coat racks

see racks

coat room equipment

All-Steel Equipment Inc.....22c/1
8erger Mfg. Div.....22c/2
Fairhurst, John T., Co.....22c/3
Lyon Metal Products, Inc.....22c/4
Penn Metal Corp. of Penna.....22c/6
Vogel-Peterson Co. 22c/9

coaters and sealers

see fillers; paint; sealers; etc.

coatings

see acoustical—coatings; paint; cement—roofing

cocks

shut-off or drain
see valves—reducing, regulating or controlling flow

coils

fin
Modine Mfg. Co.....28d/13
Trane Co. 28a/8
Westinghouse Electric Corp.....28a/9
Young Radiator Co.....28a/12

pipe
American Blower Corp.....28a/2
Mueller Brass Co.....26a/7

cold storage insulation

see insulation—cold storage or refrigeration

collecting systems

(see also filters)

dust
American 8lower Corp.....28a/2

colors

mortar, cement, stucco, plaster, etc.
Adensite Co., Inc.....9a/1
Ceresit Waterproofing Corp.....9a/6
Horn, A. C., Co., Inc.....9a/10
Kedmont Mfg. & Waterproofing Co...9a/10a
Master 8uilders Co.....9a/13
Pecoro Paint Co., Inc.....7b/2
Toch 8rothers Inc.....9o/19

paint
see paint—pigments

columns

caps and bases for
see caps and bases

forms for
see forms—concrete

metal
see shapes—metal—structural

ornamental metal
see metal—ornamental

precast
see wall construction—concrete slab—precast

columns cont.

steel—concrete filled
Lolly Column Co.....3d/6

wood
Hartmann-Sanders Co. 5c/5
Schwerd, A. F., Mfg. Co.....5c/6

combustion control

Canton Stoker Corp.....28f/1

communication systems

Automatic Electric Co.....31b/2
Bell Telephone System.....31b/3
Executone, Inc. 31b/4
International Business Machines Corp...31c/1
Stromberg-Carlson Co. 31b/5a
Webster Electric Co.....31b/6

compressor-condenser units

8aker Ice Machine Co., Inc.....28a/2a
Carrier Corp. 28a/3
Chrysler Corp. 28a/4
General Electric Co.....28a/6
Mueller, L. J., Furnace Co.....28e/7a
Trane Co. 28a/8
Westinghouse Electric Corp.....28a/9
Worthington Pump & Machinery Corp..28a/10
York Corp. 28o/11

compressors

air or gas
Warthington Pump & Machinery Corp..28a/10
Yeomans 8ros. Co.....27d/3

refrigeration
8aker Ice Machine Co., Inc.....28a/2a
Carrier Corp. 28a/3
Chrysler Corp. 28a/4
Frigidaire Div. 23a/4a
General Electric Co.....28a/6
Trane Co. 28a/8
Westinghouse Electric Corp.....28a/9
Worthington Pump & Machinery Corp..28a/10
York Corp. 28o/11

turbine
see blowers

concrete

accelerators
see accelerators

admixtures
see hardeners and densifiers; waterproofing—admixtures

aggregates
see aggregates

anchors
see anchors

antifreeze compounds
see antifreeze compounds

architectural
Portland Cement Assn.....4e/4

architectural slabs
see slabs

products

concrete cont.

armored
Flockhart Foundry Co.....6h/2

blocks
see floor construction; roof construction; blocks

construction—contractors and engineers
Bornes, James I., Construction Co.....1a/1
Guaranteed Waterproofing Co.....1b/4
H. R. H. Construction Corp.....1o/3
Roberts & Schoefer Co.....3b/5
Spencer, White & Prentis, Inc.....2o/4
Terminol Construction Corp.....1o/5

curing materials
Adensite Co., Inc.....9o/1
Anti-Hydro Waterproofing Co.....9a/2
Aquabor Co. 9a/3
Ceresit Waterproofing Corp.....9o/6
Hillyard Soles Cos.....13h/1
Horn, A. C., Co., Inc.....9a/10
Kedmont Mfg. & Waterproofing Co....9o/10a
Master Builders Co.....9a/13
Minwax Co., Inc.....9o/14
Sonneborn, L., Sons, Inc.....9a/17
Toch Brothers Inc.....9a/19
Truscon Laboratories 9a/20

curing paper
see paper and felts—concrete curing and protection

expanding fill
PArete Mfg. Co.....3c/19

filler tile
see floor construction—filler tile

flashing forms
see flashings

floors
see flooring

form liners
see form liners

form tying and anchoring devices
Hohmann & Barnard, Inc.....3f/3
Richmond Screw Anchor Co., Inc.....3e/5

forms
see forms—concrete

hardeners
see hardeners and densifiers

inserts
see inserts—concrete

insulating
see insulation—building—cement form

joists
see joists

lightweight
Martin Fireproofing Corp.....3c/17
PArete Mfg. Co.....3c/19
Waylite Co. 4e/10
Zonolite Co. 10o/21

nailing
Martin Fireproofing Corp.....3c/17
PArete Mfg. Co.....3c/19

oil-proofing contractors
Many, B. J., Co., Inc.....1b/5
Western Waterproofing Cos.....9a/21

concrete cont.

paint
see paint—brick, cement, etc.

panels
see slabs

portland cement
see cement—portland

reinforcement—bars and rods
see bars—reinforcing

reinforcement—beam wrappers
see caging

reinforcement—floor forms
see forms—concrete; floor construction

reinforcement—high chairs
Bethlehem Steel Co.....3d/2
Carver Steel & Wire Co.....3e/2
Hohmann & Barnard, Inc.....3f/3
Laclede Steel Co.....3d/5

reinforcement—spacers
Bethlehem Steel Co.....3d/2
Carver Steel & Wire Co.....3e/2
Goldsmith Metal Lath Co.....3b/4
Hohmann & Barnard, Inc.....3f/3
Laclede Steel Co.....3d/5

reinforcement—wire mesh or expanded metal
Alabama Metal Lath Co.....12o/1
Bethlehem Steel Co.....3d/2
Inland Steel Products Co.....12o/3
Laclede Steel Co.....3d/5
National Gypsum Co.....12b/2
Penn Metal Co., Inc.....12o/5
Pittsburgh Steel Products Co.....12o/6
Wheeling Corrugating Co.....12o/8

reinforcement—wire mesh or expanded metal—paper combination
Pittsburgh Steel Products Co.....12o/6
Wheeling Corrugating Co.....12o/8

reinforcing devices
see clips

slabs
see slabs

slabs—floor, roof and wall construction
see floor construction; roof construction; wall construction

stucco
see stucco

vermiculite
Zonolite Co. 10o/21

waterproofing
see waterproofing—integral

condensation retardants
see paper and felts—condensation retardant

condensers

evaporative
American Blower Corp.....28o/2
Baker Ice Machine Co., Inc.....28o/2a
Carrier Corp. 28o/3
General Electric Co.....28o/6
Trane Co. 28o/8

condensers cont.

evaporative cont.
Westinghouse Electric Corp.....28a/9
Worthington Pump & Machinery Corp..28o/10
York Corp. 28o/11

refrigeration
Baker Ice Machine Co., Inc.....28o/2a
Carrier Corp. 28a/3
Chrysler Corp. 28a/4
General Electric Co.....28a/6
Trane Co. 28a/8
Westinghouse Electric Corp.....28a/9
Worthington Pump & Machinery Corp..28o/10
York Corp. 28o/11

shell and tube
Baker Ice Machine Co., Inc.....28a/2o
Chrysler Corp. 28o/4
Westinghouse Electric Corp.....28o/9
Worthington Pump & Machinery Corp..28o/10

conductor pipe
see pipe

conductors

electric
see wire and cables—electric

lightning
see lightning conductors

conduit

electrical—busbar systems
Adam, Frank, Electric Co.....29o/1
BullDog Electric Products Co.....29o/2
Federal Electric Products Co., Inc.....29o/3
General Electric Co.....29o/4
National Electric Products Corp.....29b/2
Trumbull Electric Mfg. Co.....29o/5

electrical—fittings for
BullDog Electric Products Co.....29a/2
Federal Electric Products Co., Inc.....29o/3
General Electric Co.....29b/1
National Electric Products Corp.....29b/2
Republic Steel Corp.....29b/4
Walker Bros. 29b/5

electrical—flexible
General Electric Co.....29b/1

electrical—metal moulding or raceway
National Electric Products Corp.....29b/2
Republic Steel Corp.....29b/4
Robertson, H. H., Co.....3c/7
Walker Bros. 29b/5

electrical—rigid
General Electric Co.....29b/1
Laclede Steel Co.....3d/5
National Electric Products Corp.....29b/2
National Fireproofing Corp.....4d/8
Republic Steel Corp.....29b/4

electrical—underfloor
see floor construction—cellular beam and electrical duct system; electrical underfloor distribution systems; conduit — electrical — metal moulding or raceway

underground or overhead pipe—insulated
see pipe—underground or overhead systems

connectors

electric
Bryant Electric Co.....29c/1
BullDog Electric Products Co.....29a/2
General Electric Co.....29b/1
Trumbull Electric Mfg. Co.....29a/5

timber
see *timber—connectors for*

contactors

see *switches*

contractors

see *specific type such as: building contractors; roofing contractors; etc.*

control assemblies

electric
Federal Electric Products Co., Inc.....29a/3

controls

air conditioning or ventilating
Mercaid Corp., ...28c/5
Mueller, L. J., Furnace Co.....28e/7a
Powers Regulator Co.....24a/11
Trade-Wind Motorfans, Inc.....28b/14
Trane Co. 28a/8
Young Regulator Co.....28c/10

boiler
see *controls—damper*

chlorine
see *chlorine control apparatus*

damper
Burt Mfg. Co.....19b/4
Cantan Stoker Corp.....28f/1
Clarage Fan Co.....28a/5
Dale Valve Co.....28b/19
Hirschman-Pahle Co. Inc.....19b/7
Trane Co. 28a/8
Young Regulator Co.....28c/10

elevator or dumbwaiter
Chelsea Elevator Co.....32a/2
Ernst, Charles K., Inc.....32c/1
Globe Haist Co.....32a/4
Inclinator Co. of America.....32a/5
Monarch Elevator & Machine Co.....32a/7
Otis Elevator Co.....32a/10
Payne, F. S., Co.....32a/11
Peelle Co. 32a/12
Potts Ash Haist Corp.....32c/2
Rotary Lift Co.....32a/13
St. Louis Fire Door Co.....15f/4
Security Fire Door Co.....15f/5
Sedgwick Machine Works.....32a/14
Warner Elevator Mfg. Co.....32a/15
Warsaw Elevator Co.....32a/16
Watson Elevator Co., Inc.....32a/18
Westinghouse Electric Corp.....32a/19

heating system
Bell & Gossett Co.....28c/1
Bryant Heater Co.....28d/1
Dunham, C. A., Co.....28c/2
Grinnell Co., Inc.....28d/17
McDonnell & Miller, Inc.....28c/4

controls cont.

heating system cont.
Mercaid Corp. 28c/5
Thrush, H. A., & Co.....28c/7
Trane Co. 28a/8
Triplex Heating Specialty Co., Inc....28c/8
Waterman-Waterbury Co. 28e/10
Webster, Warren, & Co.....28c/9
Wesix Electric Heater Co.....28e/11
Young Regulator Co.....28c/10

humidity
Powers Regulator Co.....24a/11

humidity and temperature combined
Young Regulator Co.....28c/10

liquid level
McDonnell & Miller, Inc.....28c/4
Mercaid Corp. 28c/5
Paddock Pool Equipment Co.....22f/5

low water
see *boilers—protectors for*

motor
(see also switches)
Federal Electric Products Co., Inc.....29a/3
General Electric Co.....29a/4
Hart & Hegeman Div.....29c/2
Trumbull Electric Mfg. Co.....29a/5
Westinghouse Electric Corp.....29a/6

motor—temperature overload
Federal Electric Products Co., Inc.....29a/3
Hart & Hegeman Div.....29c/2

oil burner—flame operated
Mercaid Corp. 28c/5

panel heating
see *controls—heating system*

pressure
Dunham, C. A., Co.....28c/2
McDonnell & Miller, Inc.....28c/4
Mercaid Corp.....28c/5
Powers Regulator Co.....24a/11
Triplex Heating Specialty Co., Inc.....28c/8

radiant heating
see *controls—heating system*

refrigeration
see *valves—refrigeration*

stage lighting
Adam, Frank, Electric Co.....29a/1
Century Lighting Inc.....30a/4
Trumbull Electric Mfg. Co.....29a/5
Weiss, I., & Sons.....22e/2

stoker
Cantan Stoker Corp.....28f/1
Mercaid Corp. 28c/5
Stokol Stoker Co., Inc.....28f/3

temperature
(see also thermostats)
Dunham, C. A., Co. 28c/2
Grinnell Co., Inc.....28d/17
Haffman Specialty Co.....28c/3
Mercaid Corp. 28c/5
Powers Regulator Co.....24a/11
Thrush, H. A., & Co.....28c/7
Young Regulator Co.....28c/10

temperature—radiator valve
see *valves—radiator supply*

controls cont.

temperature—weather compensating
Bell & Gossett Co.....28c/1
Haffman Specialty Co.....28c/3

time
Self Winding Clock Co., Inc.,.....31c/2

convectors

(see also radiators)
Dunham, C. A., Co.....28c/2
Modine Mfg. Co.....28d/13
National Radiator Co.....28d/6
Shaw-Perkins Mfg. Co.....28d/14
Smith, H. B., Co., Inc.....28d/9
Trane Co. 28a/8
Tuttle & Bailey, Inc.....28b/22
United States Radiator Corp.....28d/12
Vulcan Radiator Co.....28d/15
Webster, Warren, & Co.....28d/16
Young Radiator Co.....28a/12

converters

heat
see *heat exchangers*

conveyors

belt
Lamson Corp. 32d/1
Olson, Samuel Mfg. Co., Inc.....23b/4a
Shlagra Steel Products Corp.....15g/9
Wilkinson Chutes, Inc.....24d/3

book
see *library equipment*

food
see *cafeteria equipment; hospital equipment*

gravity
Lamson Corp. 32d/1
Wilkinson Chutes, Inc.....24d/3

overhead carrier
Lamson Corp. 32d/1

roller
Lamson Corp. 32d/1
Wilkinson Chutes, Inc.....24d/3

slat
Lamson Corp. 32d/1

tray
see *dumbwaiters—tray*

coolers

drinking water
(see also fountains—drinking)
Cordley & Hayes.....27a/13
Filtrine Mfg. Co. 27a/16
Frigidaire Div. 23a/4a
General Electric Co.....28a/6
Taylor, Halsey W., Co.....27a/18

refrigeration
Frigidaire Div. 23a/4a
General Electric Co.....28a/6
Pattersan-Kelley Co., Inc.....27a/5
Trane Co. 28a/8
Westinghouse Electric Corp.....28a/9
Worthington Pump & Machinery Corp..28a/10
York Corp. 28a/11

products

coolers cont.

unit

Americon Cooloir Corp.....28b/6
Carrier Corp. 28a/3
Chrysler Corp. 28o/4
Frigidoire Div. 23a/4a
Generol Electric Co.....28a/6
Rheem Mfg. Co.....28e/8
Trone Co. 28o/8
Westinghouse Electric Corp.....28o/9
Worthington Pump & Mochinery Corp..28a/10
York Corp. 28o/11

cooling rooms

see refrigerotors—commercial

cooling systems

water

see coolers—drinking woter

copings

clay, terro cotta or cast stone

Poddock Pool Equipment Co.....22f/5
Robinson Cloy Product Co.....26o/6

joint covers for

Dusing & Hunt, Inc.....9a/6a
Minwox Co., Inc.....9o/14
Revere Copper & 8ross Inc.....8c/9

metal

Aluminum Co. of Americo.....6a/1
Erie Enomeling Co.....6d/2
Overly Mfg. Co.....8c/8
Revere Copper & 8ross Inc.....8c/9
Seoporcel Metols, Inc.....6d/4
Texlite Inc. 6d/5

copper or copper alloy

see costings; metol; rods ond bors; sheet, strip, plote; tubing; wire

cork

see specific product os: wollboord; flooring; insulotion

corner beads

see beods

cornices

hollow metal

see mouldings—metol

ornamental metol

see metol—ornomentol

corrugated sheets

see roofing; siding

counters

bank or office

Art Metol Construction Co.....22o/10
Formico Insulotion Co.....13i/4
Generol Electric Co.....13i/5
Generol Fireproofing Co.....22g/1

counters cont.

bank or office cont.

Housermon, E. F., Co., ...21o/2
Mortin-Porry Corp. 21o/4
Mills Co. 21o/5
Nationol Assn. of Ornomentol Metal Mfrs. 6e/9o
Penn Metol Corp. of Penna.....22c/6
Virginio Metol Products Corp.....21o/7
Wotson Mfg. Co., Inc.....22o/11

cafeteria or restaurant

Formico Insulotion Co. 13i/4
Generol Electric Co.....13i/5
Von, John, Ronge Co.....23b/5

tops for

see tops

couplings

see fittings—pipe or tube

cove base

(see olso flooring)

asphalt, linoleum, plastic, rubber, etc.

Armstrong Cork Co.....13e/2
Congoleum-Noirn Inc. 13e/3
Donoldson Floors, Inc.....13c/7
Duroflex Corp. 13d/1
Goodyeor Tire & Rubber Co., Inc.....13e/6
Hochmeister-Inc. 13d/3
Hood Rubber Co.....13e/7
Kennedy, Dovid, E., Inc.....13d/5
Kleistone Rubber Co., Inc.....13e/8
Morsh Wall Products, Inc.....13i/8
Moulding, Thos., Floor Mfg. Co.....13d/7
Robbins Tire & Rubber Co., Inc.....13e/9
Toylor Mfg. Co.....13e/10
Tile-Tex Co., Inc.....13d/8
Uvolde Rock Aspholt Co.....13d/9

dividers

see dividers

metal

8 & T Metols Co.....13J/1
Inlond Steel Products Co.....12o/3
Knopp 8ros. Mfg. Co.....12o/4o
Notional Gypsum Co.....12b/2
Tyloc Co. 13i/10
Vikon Tile Corp.....13b/10
Werner, R. D., Co., Inc.....13J/2
Wolloeger Steel Corp.....12a/9

tile

Combridge Tile Mfg. Co.....13b/1
Cork Insulotion Co., Inc.....13e/4
Drehmonn Poving & Flooring Co.....13c/8
Focing Tile Institute.....4d/5
Hachmeister-Inc. 13d/3
Hood Rubber Co.....13e/7
Kleistone Rubber Co., Inc.....13e/8
Ludawici-Celadon Co. 8b/8
Mosoic Tile Co. 13b/2
Murroy Tile Co., Inc.....13b/3
Sporto Ceromic Co.....13b/4
Tile Council of Americo.....13b/5
Tile-Tex Co., Inc.....13d/8
United Stotes Quorry Tile Co.....13b/6
Vikon Tile Corp.....13b/10

coverings

beam, girder or column

see coging; tile—hollow

boiler

see insulotion—high temperoture

pipe

see insulotion—high temperature

wall

see woll coverings

woll—plywood

see plywood; wollboord

woll—wood veneer

see veneers—wood; ponels—veneered—wood; wollboord

covers

coping—joint

see copings; joints

rodiotor

see rodiators—covers and cabinets for

covers and frames

drainage

8oosey, Norman, Mfg. Co.....27e/2
Controctors Foundry 6h/1
Flockhort Foundry Co.....6h/2

monhole, trench, gutter, etc.

Americon Abrosive Metols Co.....13o/9
Americon Moson Sofety Treod Co.....13o/10
Controctors Foundry 6h/1
Donley 8rothers Co.....28g/5
Fiske, J. W., Iron Works.....6e/6
Flockhort Foundry Co.....6h/2
Wooster Products, Inc.....13a/12

sidewalk, area, etc.

Controctors Foundry 6h/1
Donley 8rothers Co.....28g/5
Flockhort Foundry Co. 6h/2

cranes

Shlogro Steel Products Corp.....15g/9

crematories

see destructors; incinerotors

creosote oil

see lumber; preservotives

cubicles

hospital

All Metol Portition Co., Inc.....21b/1
Americon Sonitory Portition Co.....21b/2
8lickmon, S., Inc.....23b/1
Copitol Cubicle Co., Inc.....21e/1
Mills Co. 21b/4
Sonymetol Products Co., Inc.....21b/6

cupboards

see cabinets

curbs

armored concrete

Flockhort Foundry Co.....6h/2

curbs cont.

granite
Fletcher, H. E., Co.....4o/3

inlets for
(see also catchbasins)
Fletcher, H. E., Co.....4a/3
Flockhart Foundry Co.....6h/2

metal
see bars—*curb*

curtain walls

metal
see panels—*metal—sidewall*

curtains

cubicle
Capital Cubicle Co., Inc.....21e/1

fire—far moving stairs
see *stairs—moving—covers for*

folding partition
see *partitions—folding*

lightproof
see *shades—lightproof*

metal rods and hooks for
American Sanitary Partition Co.....21b/2
Capitol Cubicle Co., Inc.....21e/1
Hoegger, Inc. 24c/9
Reliable Metal Novelty Co., Inc.....24c/15

railing—metal or wood
see *doors—rolling*

stage
Vasconcellos, Joseph, Inc.....22e/1
Weiss, I., & Sons.....22e/2

d

dampeners

vibration
see *absorbers*

dampers or registers

air conditioning or ventilating
American Foundry & Furnace Co.....28e/1
American Warming & Ventilating Co...28b/16
Barber-Colman Co. 28b/18
Burt Mfg. Co.....19b/4
Contractors Foundry 6h/1
Dole Valve Co. 28b/19
Hendrick Mfg. Co.....28b/21
Pyle-National Co. 28b/21o
Trade-Wind Motorfans, Inc.....28b/14
Tuttle & Bailey, Inc.....28b/22
United States Register Co.....28b/23
Young Regulator Co.....28c/10

fireplace
Donley Brothers Co.....28g/5
Hahmann & Barnard, Inc.....3f/3
Majestic Co. 28g/8
Superior Fireplace Co.....28g/9

regulators for
see *controls—damper*

thermostatic control
Dole Valve Co.....28b/19

dampproofing

(see also waterproofing)

compounds
Adensite Co., Inc.....9o/1
Anti-Hydro Waterproofing Co.....9o/2
Aquabar Co. 9a/3
Barrett Div. 8o/2
Ceresit Waterproofing Corp.....9a/6
Cork Import Corp.....10b/2
Flintkote Co. 9a/7
Glidden Co. 9a/8; 14/6
Horn, A. C., Co., Inc.....9a/10
Kedmont Mfg. & Waterproofing Co....9a/10o
Koppers Co., Inc.....8o/6
Kuhls, H. B. Fred.....9a/11
Master Builders Co.....9o/13
Minwax Co., Inc.....9a/14
Pecora Paint Co., Inc.....7b/2
Pittsburgh Plate Glass Co.....14/15
Prima Products Inc.....9o/15
Rust-Oleum Corp. 14/19
Sika Chemical Corp.....9o/16
Sonneborn, L., Sons, Inc.....9a/17
Standard Dry Wall Products Inc.....9o/18
Stonhard Co. 13c/12
Toch Brothers Inc.....9a/19
Tremco Mfg. Co.....7b/3
Truscon Laboratories 9a/20; 14/20
Western Waterproofing Co.....9o/22
Western Waterproofing Cos.....9o/21
Wilbur & Williams Co.....14/24

deaerators

Permutit Co. 27a/17
Worthington Pump & Machinery Corp..28o/10

dechlorinators

water
Filtrine Mfg. Co.....27o/16

decks

see *floor construction; roof construction*

paint for
see *paint—floor or deck*

decoratives

see *exhibits; signs; metal—ornamental*

deflectors

air
see *dampers or registers; louvers; ventilators*

dehumidifiers

American Blower Corp.....28o/2
Bryant Heater Co.....28d/1
Carrier Corp. 28a/3
Cleveland Fan Co.....28o/5
Frigidaire Div. 23a/4o
Westinghouse Electric Corp.....28o/9
York Corp. 28o/11

demolition contractors

Cuyahoga Wrecking Co.....1b/1

densifiers

see *hardeners and densifiers*

deodorization apparatus

see *water—softeners and treating equipment*

depositories

bank
see *safes*

derricks

see *hoists*

desks

check and lobby
(see also metal—ornamental)
Art Metal Construction Co.....22o/10
General Bronze Corp.....6e/7
General Fireproofing Co.....22g/1
National Assn. of Ornamental
Metal Mfrs. 6e/9o
Remington Rand Inc.....22d/8

kitchen
see *cabinets—kitchen*

laboratory
see *laboratory equipment*

library
see *library equipment*

metal
see *furniture—metal*

school
see *furniture*

wood
see *furniture—wood*

destructors

American Incinerator Corp.....25o/1
Donley Brothers Co.....28g/5
Goder, Joseph, Incinerators.....25o/2
Kellogg-Mann Corp. 25a/2o
Majestic Co. 28g/8
Morse Boulger Destructor Co.....25o/3
Sargent Building Specialties Inc.....25a/4
Washburn & Granger, Inc.....25o/5

dials

weather
Friez Instrument Div.....22a/2

diffusers

air
(see also dampers or registers; louvers)
American Warming & Ventilating Co..28b/16
Anemostat Corp. of America.....28b/17
Barber-Colman Co.....28b/18
Pyle-National Co. 28b/21o
Tuttle & Bailey, Inc.....28b/22

light
see *reflectors or diffusers*

products

directories

building
Acme Bulletin & Directary Board Corp. 22a/1
General Branze Corp.....6e/7
International Branze Tablet Ca., Inc...6e/9
National Assn. af Ornamental
Metal Mfrs. 6e/9a
Tablet & Ticket Ca.....22a/4
United States Bronze Sign Co., Inc.....22a/S

in-and-aut indicating
International Business Machines Corp..31c/1

dishwashing machines

General Electric Co.....23a/S
Hobart Mfg. Co.....23b/2
Hatpoint Inc. 23a/9
Westinghouse Electric Corp.....23a/20

dispatch systems

see tube systems—pneumotic

dispensers

saap
see soap—dispensers

towel or napkin
see bathroom accessories

displays

see exhibits; cases—display

dividers

flaar and cove base—metal
B & T Metals Co.....13J/1
Chase Brass & Copper Co., Inc.....13c/1
Manhattan Terrazzo Brass Strip
Co., Inc.. .....13c/2
Werner, R. D., Co., Inc.....13J/2

flaor and cove base—plastic
Formica Insulation Co.....13i/4
Manhattan Terrazzo Brass Strip
Co., Inc. 13c/2

dome construction

Guastavino, R., Co.....3b/8
Raberts & Schaefer Ca.....3b/S
Unit Structures, Inc.....3b/10

doors

access
Donley Brothers Co.....28g/S
Inland Steel Products Co.....12a/3
Knapp Bros. Mfg. Co.....12a/4a
Miami Cabinet Div.....24c/13
Walsh Co. 15i/1
Wollaeger Steel Corp.....12a/9

accordion
see doors—horizontal sliding

airplane hangar
Bayley, William, Ca.....16a/5
Byrne Doors, Inc.....15f/1
Fleming Steel Co.....1Sf/2
Kinnear Mfg. Co.....1Se/3
Overhead Door Corp.....15g/6

doors cont.

airplane hangar *cant.*
Peelle-Richmond 15f/3
Richards-Wilcax Mfg. Co.....17a/10
Thorn, J. S., Co.....16a/32
Truscon Steel Co.....15f/6; 16a/34
Wilson, J. G., Corp.....15e/8

ash pit, trap or clean-out
Donley Brathers Ca.....28g/5
Flockhart Faundry Co.....6h/2
Heatilator, Inc. 28g/6
Hohmann & Barnard, Inc.....3f/3
Inland Steel Products Co.....12a/3
Majestic Co. 28g/8
Morse Boulgar Destructor Co.....25a/3
Superior Fireplace Co.....28g/9

balanced
Ellisan Bronze Co., Inc.....15a/10

bifolding
see doors—horizontal sliding; doors—vertical sliding

battams for—automatic
Accurate Metal Weather Strip Ca., Inc. 18b/1
Chamberlain Ca. of America.....18b/3
Hardwood Products Corp.....15c/4
Quaker City Metal Weatherstrip Co...18b/6
Reese Metal Weather Strip Co.....18b/7

bottams for—weatherstrip
Accurate Metal Weather Strip Co., Inc. 18b/1
Allmetal Weatherstrip Co.....18b/2
Chamberlin Co. of America.....18b/3
Monarch Metal Weatherstrip Co.....18b/S
Quaker City Metal Weatherstrip Co...18b/6
Reese Metal Weather Strip Co.....18b/7
Security Co. 18b/8

bulkhead
Bilco Co. 15h/3

cabinet
Corr, Adams & Collier Co.....5c/1
Poine Lumber Co., Ltd.....1Sc/7

canopy
Byrne Doors, Inc.....15f/1
Cornell Iron Works, Inc.....1Se/2
Fleming Steel Co.....15f/2
Overhead Daar Corp.....15g/6
Thorn, J. S., Co.....16a/32
Truscon Steel Co.....15f/6; 16a/34

casement
Bayley, William, Co.....16a/S
Carr, Adams & Collier Ca.....5c/1
Ceco Steel Products Corp.....16a/7
Crittall-Federal, Inc. 16a/9
Croft Steel Products, Inc.....16a/10
Flynn, Michael, Mfg. Co.....16a/16
Hope's Windows Inc.....16a/20
Thorn, J. S., Co.....16a/32
Truscon Steel Co.....16a/34
Williams & Willioms Products Corp...16a/39

casings for
see cosings

cell
see joil equipment

cellar
see doors—bulkhead; doors—sidewalk

doors cont.

closers far
see checks and closers

closet—sliding
(see also wordrobes)

American Steel Door Co.....1Sa/3
Virginia Metal Praducts Corp.....15a/20

caal
see chutes—coal

cold storage or refrigerator
Birkenwald, S., Co.....22b/1
Butcher Boy Cold Storage Door Ca...22b/2

combination—door and casing
Aetna Steel Products Carp.....15a/1
Art Metal Construction Co.....1Sa/4
Bliss Steel Products Corp.....16a/6
Ceco Steel Products Corp.....16a/7
Crooks, W. D., & Sons.....1Sc/2
Detroit Steel Products Co.....15a/7
Diebold, Inc. 15a/8
Dusing & Hunt, Inc.....15a/9
Ellison Bronze Co., Inc.....15a/10
Firecraft Carp.....15a/10a
Kawneer Co. 1Sa/12
Pittsburgh Plate Glass Ca.....15b/2
Reliance Art Metal Co.....15a/16
Richmand Fireproof Door Ca.....15a/17
Schacht Associates, Inc.....15b/3
Thorn, J. S., Co.....16a/32
Trussbilt Div. 15a/18a
Virginia Metal Products Corp.....15a/20
Western Pine Assn.....5a/4

combination—screen and storm
Alsco, Inc. 18a/1a
Burrowes Corp. 18a/2
Eagle-Picher Co. 10a/5
Kane Mfg. Corp.....18a/6
Russell, F. C., Co.....18a/7

cantrols for
see operators; checks and closers; hardware—door control

coordinating devices for double doors
Von Durprin Div.....17b/5

carrugated metal
Richards-Wilcox Mfg. Co.....17a/10
Richmond Fireproof Door Co.....15a/17
St. Louis Fire Door Co.....15f/4

crane
(see also doors—rolling—metal)
Byrne Doors, Inc.....15f/1
Fleming Steel Co.....1Sf/2
Truscon Steel Co.....15f/6; 16a/34
Wilson, J. G., Corp.....1Se/8

dumbwaiter—counterbalanced
Chelsea Elevator Co.....32a/2
Dusing & Hunt, Inc.....15a/9
Peelle Co. 32a/12
St. Louis Fire Door Co.....15f/4
Security Fire Door Co.....15f/5
Sedgwick Machine Works.....32a/14

dumbwaiter—hallaw metal, metal cavered ar steel plate
Chelsea Elevator Co.....32a/2
Dusing & Hunt, Inc.....1Sa/9
Peelle Co. 32a/12

doors cont.

dumbwaiter—hollow metal, metal covered or steel plate cont.
5t. Louis Fire Door Co.....15f/4
Security Fire Door Co.....15f/5
Sedgwick Machine Works.....32o/14

electrically operated
see doors—mechanically or motor operated

elevator—counterbalanced
Peelle Co. 32o/12
5t. Louis Fire Door Co.....15f/4
Security Fire Door Co.....15f/5

elevator—freight
(see also enclosures—elevator)
Monarch Elevator & Machine Co.....32o/7
Montgomery Elevator Co.....32o/8
Peelle Co. 32a/12
5t. Louis Fire Door Co.....15f/4
Security Fire Door Co.....15f/5
Wnrsow Elevator Co.....32o/16

elevator—passenger
(see also enclosures—elevator)
Aetna Steel Products Corp.....15o/1
Dohlstrom Metollic Door Co.....15o/6
General Bronze Corp.....6e/7
Monarch Elevator & Machine Co.....32o/7
Montgomery Elevator Co.....32o/8
Peelle Co. 32o/12
Worsow Elevator Co.....32o/16

elevator—passenger—hangers for
see hongers—door

elevator—sidewalk
see doors—sidewalk

elevator—telescoping
Security Fire Door Co.....15f/5

entrance—glass
see doors—gloss

entrance—metal
(commercial buildings, stores, etc.)
Aetna Steel Products Corp.....15o/1
American Art Metals Co.....15o/2
Art Metal Construction Co.....15a/4
Boch, Oscar B., Industries, Inc.....6e/1
Blum, Julius, & Co., Inc.....6e/5
Detroit Steel Products Co.....15o/7
Ellison Bronze Co., Inc.....15o/10
Flour City Ornamental Iron Co.....6e/6o
General Bronze Corp.....6e/7; 15d/1
Illinois Bronze Works.....6e/8
International Steel Co.....15d/2
Jamestown Metal Corp.....15o/11
Kawneer Co. 15a/12
National Assn. of Ornamental Metal Mfrs. 6e/9o
Newman Brothers, Inc.....6e/10
Pioneer Fireproof Door Corp.....15o/15
Reliance Art Metal Co.....15o/16

entrance—wood
see doors—wood

fire
see specific type of door

folding
see doors—horizontal sliding; doors—vertical sliding

doors cont.

folding—fabric covered
see partitions—folding—fabric covered

free standing
see doors—combination—door and casing

freezer
see doors—cold storage or refrigerator

french
see doors—casement

full vision
see doors—combination—door and casing

garage
Acme Door Corp.....15e/1
Atlas Overhead Door Co.....15g/1
Barber-Colman Co. 15g/2
Boyley, William, Co.....16a/5
Byrne Doors, Inc.....15f/1
Carr, Adams & Collier Co.....5c/1
Ceco Steel Products Corp.....16o/7
Cornell Iron Works, Inc.....15e/2
Crawford Door Co.....15g/3
Fir Door Institute.....15c/3
Fleming Steel Co.....15f/2
Kinnear Mfg. Co.....15e/3
McKee Door Co.....15g/5
Mesker Bros. 16o/22
Moeschl-Edwards Corrugating Co., Inc..15e/6
National Mfg. Co.....15g/5a
North American Iron & Steel Co., Inc. 15e/7
Overhead Door Co.....15g/6
Peelle-Richmond 15f/3
Raynor Mfg. Co.....15g/7
Richards-Wilcox Mfg. Co.....17o/10
Richmond Fireproof Door Co.....15o/17
Rowe Mfg. Co.....15g/8
Security Fire Door Co.....15f/5
Shlagro Steel Products Corp.....15g/9
Truscon Steel Co.....16o/34
Wilson, J. G., Corp.....15e/8

glass
Anco Mfg. Co., Inc.....20/2
Applemon Art Glass Works.....7c/2
Ellison Bronze Co., Inc.....15o/10
Illinois Bronze Works.....6e/8
International Steel Co.....15d/2
Libbey-Owens-Ford Glass Co.....15b/1
Pittsburgh Plate Glass Co.....7o/4; 15b/2
Schocht Associates, Inc.....15b/3

glass—shower stall
see doors—shower stall—glass

guards for
see grilles

hangar
see doors—airplane hangar

hardware for
see hardware

hollow metal
Aetna Steel Products Corp.....15a/1
American Art Metals Co.....15o/2
Art Metal Construction Co.....15o/4
Bliss Steel Products Corp.....16o/6
Blum, Julius, & Co., Inc.....6e/5
Ceco Steel Products Corp.....16a/7
Crittall-Federal, Inc. 16o/9

doors cont.

hollow metal cont.
Dohlstrom Metallic Door Co.....15o/6
Decatur Iron & Steel Co.....22h/1
Detroit Steel Products Co.....15o/7
Diebold, Inc.....15o/8
Housemman, E. F., Co.....21o/2
International Steel Co.....15d/2
Jamestown Metal Corp.....15o/11
Kawneer Co.....15a/12
Martin-Parry Corp.....21o/4
Overhead Door Corp.....15g/6
Peelle-Richmond 15f/3
Reliance Art Metal Co.....15o/16
Richmond Fireproof Door Co.....15o/17
Thorn, J. S., Co.....16o/32
Truscon Steel Co.....15f/6; 16o/34
Trussbilt Div.....15o/18o
Vallos, Lionel.....15o/19
World Steel Products Corp.....15a/21

hopper
American Incinerator Corp.....25o/1
Donley Brothers Co.....28g/5
Kellogg-Mann Corp.....25o/2o
Morse Boulger Destructor Co.....25o/3
Sargent Building Specialties Inc.....25a/4

horizontal sliding—folding, telescoping or trolley
(see also hardware—sliding door)
American Steel Door Co.....15o/3
Boyley, William, Co.....16o/5
Bliss Steel Products Corp.....16a/6
Byrne Doors, Inc.....15f/1
Ceco Steel Products Corp.....16o/7
Crittall-Federal Inc. 16a/9
Detroit Steel Products Co.....15o/7
Dusing & Hunt, Inc.....15o/9
Fleming Steel Co.....15f/2
Flynn, Michael, Mfg. Co.....16o/16
Housemman, E. F., Co.....21o/2
International Steel Co.....15d/2
Mesker Bros. 16o/22
Mills Co. 21o/5
Moeschl-Edwards Corrugating Co., Inc..15e/6
National Mfg. Co.....15g/5o
New Castle Products.....15o/13
North American Iron & Steel Co., Inc...15e/7
Overly Mfg. Co.....15a/14
Peelle-Richmond 15f/3
Pioneer Fireproof Door Corp.....15o/15
Richards-Wilcox Mfg. Co.....17o/10; 21c/2
Richmond Fireproof Door Co.....15o/17
St. Louis Fire Door Co.....15f/4
Security Fire Door Co.....15f/5
Thorn, J. S., Co.....16a/32
Truscon Steel Co.....15f/6; 16o/34
Virginia Metal Products Corp.....15o/20

industrial
see specific kind of door

interlocks for—elevator
see interlocks

jail
see jail equipment

jalousie
see blinds—louvered; jalousies; doors—ventilator paneled

doors cont.

kolomein
see doors—metal covered

kitchenette
see doors—rolling—metal

louvered gloss
Air-Vue Products Carp.....16a/2a
Casement Hardware Co.....18c/2
VentiLite Corp.....16a/37a

morine
see specific type of door

mechonicolly or motor operoted
Acme Door Corp.....15e/1
Atlas Overhead Door Co.....15g/1
Barber-Calman Co.....15g/2
Byrne Doors, Inc.....15f/1
Cornell Iron Works, Inc.....15e/2
Crawford Door Co.....15g/3
Fleming Steel Co.....15f/2
Kinnear Mfg. Co.....15e/3
Lawrence Steel Co.....15e/4
Mahon, R. C., Co.....15e/5
McKee Door Co.....15g/5
Moeschl-Edwards Corrugating Co., Inc..15e/6
New Castle Products.....15a/13
North American Iron & Steel Co., Inc...15e/7
Overhead Door Corp.....15g/6
Peelle-Richmond 15f/3
Raynar Mfg. Co.....15g/7
Richards-Wilcox Mfg. Co.....17a/10
Rowe Mfg. Co.....15g/B
St. Louis Fire Door Co.....15f/4
Security Fire Door Co.....15f/5
Shlagro Steel Products Corp.....15g/9
Truscon Steel Co.....15f/6; 16a/34
Wilson, J. G., Corp.....15e/8

metal covered
Aetna Steel Products Corp.....15a/1
Barber-Colman Co.....15g/2
Dusing & Hunt, Inc.....15a/9
Firecraft Corp. 15a/10a
International Steel Co.....15d/2
Kinnear Mfg. Co.....15e/3
Moeschl-Edwards Corrugating Co., Inc..15e/6
Overhead Door Corp.....15g/6
Overly Mfg. Co.....15a/14
Peelle-Richmond 15f/3
Pioneer Fireproof Door Corp.....15a/15
Richards-Wilcox Mfg. Co.....17a/10
Richmond Fireproof Door Co.....15a/17
Rowe Mfg. Co.....15g/B
St. Louis Fire Door Co.....15f/4
Security Fire Door Co.....15f/5
World Steel Products Corp.....15a/21

operators for
see operators

overhead type
Atlas Overhead Door Co.....15g/1
Barber-Colman Co.....15g/2
Byrne Doors, Inc.....15f/1
Carr, Adams & Collier Co.....5c/1
Cornell Iron Works, Inc.....15e/2
Crawford Door Co.....15g/3
Fir Door Institute 15c/3
Fleming Steel Co.....15f/2
Kinnear Mfg. Co.....15e/3
McKee Door Co.....15g/5
National Mfg. Co.....15g/5o
North American Iron & Steel Co., Inc...15e/7

doors cont.

overhead type cont.
Overhead Door Corp.....15g/6
Raynar Mfg. Co.....15g/7
Rowe Mfg. Co.....15g/B
Thorn, J. S., Co.....16a/32
Truscon Steel Co.....15f/6; 16a/34
Wilson, J. G., Corp.....15e/8

pit
see doors—sidewalk

plywood
American Plywood Corp.....15c/1
Atlas Overhead Door Co.....15g/1
Crawford Door Co.....15g/3
Crooks, W. D., & Sons.....15c/2
Fir Door Institute.....15c/3
Mengel Co. 15c/5
Paine Lumber Co., Ltd.....15c/7
Peelle-Richmond 15f/3
Roddis Plywood Corp.....15c/8
Rowe Mfg. Co.....15g/B
United States Plywood Corp.....15c/5

refrigerator
see doors—cold storage or refrigerator

removable post
see specific type of door

revolving
General Bronze Corp.....6e/7; 15d/1
International Steel Co.....15d/2

rolling—for trucks, trailers, etc.
see doors—rolling

rolling—metal
Acme Door Corp.....15e/1
Cornell Iron Works, Inc.....15e/2
Kinnear Mfg. Co.....15e/3
Lawrence Steel Co.....15e/4
Mahon, R. C., Co.....15e/5
Moeschl-Edwards Corrugating Co., Inc..15e/6
North American Iron & Steel Co., Inc...15e/7
Wilson, J. G., Corp.....15e/8

rolling—wood
Acme Door Corp.....15e/1
Cornell Iron Works, Inc.....15e/2
Kinnear Mfg. Co.....15e/3
Wilson, J. G., Corp.....15e/8

roundhouse
see doors—rolling

saddles for
see thresholds

screen
see screens

sheet metal
Acme Door Corp.....15e/1
American Steel Door Co.....15a/3
Barber-Colman Co.....15g/2
Bayley, William, Co.....16a/5
Byrne Doors, Inc.....15f/1
Ceco Steel Products Corp.....16a/7
Crittall-Federal, Inc. 16a/9
Detroit Steel Products Co.....15a/7
Dusing & Hunt, Inc.....15a/9
Ellison Bronze Co., Inc.....15a/10
Fleming Steel Co.....15f/2
Flynn, Michael, Mfg. Co.....16a/16
Hauserman, E. F., Co.....21a/2
Hope's Windows Inc.....16a/20

doors cont.

sheet metal cont.
Kinnear Mfg. Co.....15e/3
Mesker Bros. 16a/22
Mills Co. 21a/5
Moeschl-Edwards Corrugating Co., Inc..15e/6
North American Iron & Steel Co., Inc...15e/7
Peelle-Richmond 15f/3
Pioneer Fireproof Door Corp.....15a/15
Richards-Wilcox Mfg. Co.....17a/10
Richmond Fireproof Door Co.....15a/17
St. Louis Fire Door Co.....15f/4
Security Fire Door Co.....15f/5
Shlagro Steel Products Corp.....15g/9
Thorn, J. S., Co.....16a/32
Truscon Steel Co.....15f/6; 16a/34
Virginia Metal Products Corp.....15a/20
Wilson, J. G., Corp.....15e/8

showcase
Brasco Mfg. Co.....20/3

shower stall—glass
Fiat Metal Mfg. Co.....24b/1
Kawneer Co.....20/5
Ketcham, G. M., Mfg. Corp.....24c/11
Milwaukee Stamping Co.....24b/2
Tiletone Co.....24b/3

shower stall—metal
see partitions—toilet, shower, etc.

sidewalk
Bilco Co.....15h/2
Ernst, Charles K., Inc.....32c/1
Potts Ash Hoist Corp.....32c/2

sidewalk—grating
see gratings

sliding
see doors—vertical sliding;
doors—horizontal sliding

sound retarding
American Steel Door Co.....15a/3
Crooks, W. D., & Sons.....15c/2
Decatur Iron & Steel Co.....22h/1
Diebold, Inc. 15a/8
Firecraft Corp. 15a/10o
Hardwood Products Corp.....15c/4
Peelle-Richmond 15f/3
Richmond Fireproof Door Co.....15a/17
Roddis Plywood Corp.....15c/8
Trussbilt Div.....15a/18o

steel
see specific type of door

stops for
see stops—door

storage or record room
see doors—vault

telescoping
see doors—horizontal sliding;
doors—vertical sliding

tin clad
see doors—metal covered

toilet—metal
All Metal Partition Co., Inc.....21b/1
American Sanitary Partition Co.....21b/2
Mills Co. 21b/4
Milwaukee Stamping Co.....21b/5
Sanymetal Products Co., Inc.....21b/6
Weis, Henry, Mfg. Co., Inc.....21b/7

doors cont.

trock for
see trock

tubular steel
see doors—hollow metal

vault—bonk
Diebold, Inc. 22a/7
Herring-Hall-Marvin Safe Co.....22a/8
Mosler Safe Co.....22a/9

veneered—fire resisting asbestos or wood
Richards-Wilcox Mfg. Co.....17a/10
Roddis Plywood Corp.....15c/8

veneered—plastic
Formica Insulation Co.....13i/4
International Steel Co.....15d/2

veneered—wood
American Plywood Corp.....15c/1
Carr, Adams & Collier Co.....5c/1
Crooks, W. D., & Sons.....15c/2
Hardwood Products Corp.....15c/4
International Steel Co.....15d/2
Mengel Co. 15c/5
Paine Lumber Co., Ltd.....15c/7
Roddis Plywood Corp.....15c/8
United States Plywood Corp.....15c/5

ventilating panels for
see louvers—door—ventilating

ventilator paneled
Aetna Steel Products Corp.....15a/1
Air-Vue Products Corp.....16a/2a
Art Metal Construction Co.....15a/4
Casement Hardware Co.....18c/2
Crooks, W. D., & Sons.....15c/2
Detroit Steel Products Co.....15a/7
Hauserman, E. F., Co.....21a/2
Mills Co. 21a/5
Paine Lumber Co., Ltd.....15c/7
Pro-Tect-U Jalousie Corp.....18c/4
Trussbilt Div.....15a/18a
VentiLite Corp. 16a/37a
World Steel Products Corp.....15a/21

vertical sliding—folding or telescoping
Atlas Overhead Door Co.....15g/1
Barber-Colman Co.....15g/2
Byrne Doors, Inc.....15f/1
Cornell Iron Works, Inc.....15e/2
Crawford Door Co.....15g/3
Dusing & Hunt, Inc.....15a/9
Fleming Steel Co.....15f/2
Kinnear Mfg. Co.....15e/3
National Mfg. Co.....15g/5a
North American Iron & Steel Co., Inc...15e/7
Overhead Door Corp.....15g/6
Overly Mfg. Co.....15a/14
Peelle-Richmond 15f/3
Richards-Wilcox Mfg. Co.....17a/10
Security Fire Door Co.....15f/5
Shlagro Steel Products Corp.....15g/9
Thorn, J. S., Co.....16a/32
Truscon Steel Co.....15f/6; 16a/34

wire—woven
Acorn Wire & Iron Works.....21f/1

wood
American Plywood Corp.....15c/1
Atlas Overhead Door Co.....15g/1
Barber-Colman Co.....15g/2

doors cont.

wood cont.
Carr, Adams & Collier Co.....5c/1
Cornell Iron Works, Inc.....15e/2
Crawford Door Co.....15g/3
Crooks, W. D., & Sons.....15c/2
Curtis Companies Service Bureau.....5c/2
Fir Door Institute.....15c/3
Hardwood Products Corp.....15c/4
International Steel Co.....15d/2
McKee Door Co.....15g/5
Mengel Co. 15c/5
National Mfg. Co.....15g/5a
Overhead Door Corp.....15g/6
Paine Lumber Co., Ltd.....15c/7
Para Corp. 15c/7a
Peelle-Richmond 15f/3
Raynor Mfg. Co.....15g/7
Richards-Wilcox Mfg. Co.....17a/10
Roddis Lumber & Veneer Co.....15c/8
Rowe Mfg. Co.....15g/8
Security Fire Door Co.....15f/5
United States Plywood Corp.....15c/5
Wilson, J. G., Corp.....15e/8

wood—fire resistant
Fox Bros. Mfg. Co.....5c/4

wood—metal frame
Peelle-Richmond 15f/3
Richards-Wilcox Mfg. Co.....17a/10
Roddis Plywood Corp.....15c/8

x-ray protective
Bar-Ray Products, Inc.....21d/1
Crooks, W. D., & Sons.....15c/2
General Lead Construction Corp.....21d/3
Hardwood Products Corp.....15c/4
Ray Proof Corp.....21d/2
Roddis Plywood Corp.....15c/8

downspouts

see pipe—conductor

drainboards

(see also tops)
Alberene Stone Corp. of Virginia.....26b/1
Armstrong Cork Co.....13e/2
Chicago Drainboard Co., Inc.....23a/2a
Congoleum-Nairn Inc. 13e/3
Elkay Mfg. Co.....23a/4
Mutschler Bros. Co.....23a/15
United States Quarry Tile Co.....13b/6

drains

areaway
see drains—floor, yard, etc.

backwater
Boosey, Narman, Mfg. Co.....27e/2
Crampton-Farley Mfg. Co.....27e/3
Haffman Specialty Co.....27e/3a
Josam Mfg. Co.....27e/4
Wade Mfg. Co.....27e/5

double drainage
Hoffman Specialty Co.....27e/3a
Josam Mfg. Co.....27e/4

floor, yard, etc.
Boosey, Norman, Mfg. Co.....27e/2
Contractors Foundry 6h/1
Crampton-Farley Mfg. Co.....27e/3
Drehmann Paving & Flooring Co.....13c/8

drains cont.

floor, yard, etc. cont.
Fiske, J. W., Iron Works.....6e/6
Josam Mfg. Co.....27e/4
Wade Mfg. Co.....27e/5
Zurn, J. A., Mfg. Co.....27e/6

floor, yard, etc.—acidproof
Duriron Co., Inc.....26b/2
Hoffman Specialty Co.....27e/3a

garage
Boosey, Narman, Mfg. Co.....27e/2
Hoffman Specialty Co.....27e/3a
Josam Mfg. Co.....27e/4
Wade Mfg. Co.....27e/5

gutter
see drains—roof

hospital
see drains—floor, yard, etc.

marine
Josam Mfg. Co.....27e/4

non-clog
Boosey, Norman, Mfg. Co.....27e/2
Hoffman Specialty Co.....27e/3a
Josam Mfg. Co.....27e/4
Wade Mfg. Co.....27e/5
Zurn, J. A., Mfg. Co.....27e/6

non-clog—triple drainage
Josam Mfg. Co.....27e/4

oil or grease
see interceptors

roof, gutter or promenade
Barrett Div.....8a/2
Boosey, Norman, Mfg. Co.....27e/2
Contractors Foundry.....6h/1
Crampton-Farley Mfg. Co.....27e/3
Fiske, J. W., Iron Works.....6e/6
Hoffman Specialty Co.....27e/3a
Josam Mfg. Co.....27e/4
Mahon, R. C., Co.....3c/6
Wade Mfg. Co.....27e/5
Zurn, J. A., Mfg. Co.....27e/6

scupper
see scuppers

shower
see drains—floor

swimming pool
see swimming pool—drains

trap
Boosey, Norman, Mfg. Co.....27e/2
Crampton-Farley Mfg. Co.....27e/3
Donley Brothers Co.....28g/5
Duriron Co., Inc.....26b/2
Hoffman Specialty Co.....27e/3a
Josam Mfg. Co.....27e/4
Wade Mfg. Co.....27e/5

urinal
see drains—floor

drawer

slides
Knape & Vogt Mfg. Co.....17b/13

drawers

see shelving—steel

products

drawn shapes
see *shapes*

dressers
see *cabinets—kitchen*

drills
Rawlplug Co., Inc.....3f/4

drinking water systems
see *fountains—drinking; coolers—drinking water*

drives
gear reducing, v-belt, etc.
Worthington Pump & Machinery Corp..28o/10

dryers
air
see *fans; blowers; air conditioning*

air—silica gel
Bryant Heater Co.....28d/1

clothes
Chicago Dryer Co.....24d/1
Frigidaire Div.....23a/4o
General Electric Co.....23a/5
Hamilton Mfg. Co.....24d/1o
Hotpoint Inc.....23o/9
Lamson Corp.....32d/1
United Metal Box Co., Inc.....24c/17
Westinghouse Electric Corp.....23a/20

ducts
air—insulated
Armstrong Cork Co.....10b/1
Celotex Corp. 10o/4o

asbestos-cement
Carey, Philip, Mfg. Co.....10a/4

electrical
see *conduit—electrical; floor construction—cellular beam and electrical duct system; electrical underfloor distribution systems*

insulation for
see *specific type of insulation*

linings for—sound retardant
Celotex Corp. 11o/3o
Johns-Manville 11o/5

metal
Mueller, L. J., Furnace Co.....28e/7o

dumbwaiters
doors for
see *doors—dumbwaiter*

electric
Capitol Elevator & Mfg. Co.....32o/1
Chelsea Elevator Co.....32o/2
Montgomery Elevator Co.....32o/8
Otis Elevator Co.....32a/10
Payne, F. S., Co.....32o/11
Sedgwick Machine Works.....32o/14
Warsow Elevator Co.....32o/16
Wilkinson Chutes, Inc.....24d/3

dumbwaiters cont.
hand power
Capitol Elevator & Mfg. Co.....32o/1
Chelsea Elevator Co.....32a/2
Motor, D. A., Inc.....32o/6
Sedgwick Machine Works.....32a/14
Wilkinson Chutes, Inc.....24d/3

signal systems for
see *elevators—signal systems for*

tray
Lamson Corp.....32d/1
Olson, Samuel, Mfg. Co., Inc.....23b/4o

undercounter
Chelsea Elevator Co.....32a/2
Motor, D. A., Inc.....32o/6
Otis Elevator Co.....32a/10
Sedgwick Machine Works.....32o/14

dumps
ash
Donley Brothers Co.....28g/5
Heatilator, Inc.....28g/6
Hohmann & Bernard, Inc.....3f/3
Superior Fireplace Co.....28g/9

dustproofing compounds
see *hardeners and densifiers*

e

eave troughs
see *gutters—roof; sheet metal work*

ecclesiastical equipment
see *metal—ornamental; furniture*

edgings
counter, sink, etc.
see *trim; sinks*

flooring—metal
American Mason Safety Tread Co.....13a/10
B & T Metals Co.....13j/1
Chase Brass & Copper Co., Inc.....13c/1
Werner, R. D., Co., Inc.....13j/2

flooring—plastic
Goodyear Tire & Rubber Co., Inc.....13e/6
Moulding, Thos., Floor Mfg. Co.....13d/7
Tile-Tex Co., Inc.....13d/8

granite
Fletcher, H. E., Co.....4a/3

stair
see *nosings*

efflorescence
deterrents
see *waterproofing*

ejectors
cellar draining
Yeomans Bros. Co.....27d/3

sewage
Kaustine Co., Inc.....27f/1
Yeomans Bros. Co.....27d/3

elbows
see *fittings—pipe or tube*

electrical contractors and engineers
Faley, Howard P., Co.....1b/3
Terminal Construction Corp.....1o/5

electrical underfloor distribution systems
General Electric Co.....29b/1
National Electric Products Corp.....29b/2
Republic Steel Corp.....29b/4
Robertson, H. H., Co.....3c/7
Walker Bros. 29b/5

electrodes
welding
Republic Steel Corp.....6c/5
Revere Copper & Brass Inc.....27o/7

elevators
(see also dumbwaiters; hoists)

cash
see *elevators—sidewalk; hoists*

cars for
Inclinator Co. of America.....32o/5
Manarch Elevator & Machine Co.....32o/7
Rotary Lift Co.....32a/13
Warsow Elevator Co.....32o/16

controls for
see *controls—elevator*

door hangers for
see *hangers*

door—interlocks for
see *interlocks—elevator or dumbwaiter door*

door operators for
see *operators—elevator door*

doors for
see *doors*

electric
Capitol Elevator & Mfg. Co.....32a/1
Chelsea Elevator Co.....32o/2
Ernst, Charles K., Inc.....32c/1
Inclinator Co. of America.....32a/5
Monarch Elevator & Machine Co.....32a/7
Montgomery Elevator Co.....32o/8
Otis Elevator Co.....32o/10
Payne, F. S., Co.....32o/11
Potts Ash Hoist Corp.....32c/2
Sedgwick Machine Works.....32a/14
Warner Elevator Mfg. Co.....32a/15
Warsaw Elevator Co.....32o/16
Watsan Elevator Co., Inc.....32o/18
Westinghouse Electric Corp.....32a/19

entrances for
see *enclosures—elevator; doors—elevator*

freight
Capitol Elevator & Mfg. Co.....32o/1
Chelsea Elevator Co.....32o/2
Ernst, Charles K., Inc.....32c/1
Globe Hoist Co.....32o/4

elevators cont.

freight cont.
Matot, D. A., Inc.....32a/6
Manorch Elevator & Machine Co.....32a/7
Montgamery Elevator Co.....32a/8
Otis Elevotor Co.....32a/10
Payne, F. S., Co.....32a/11
Potts Ash Haist Corp.....32c/2
Rotary Lift Co.....32a/13
Sedgwick Machine Warks.....32a/14
Warner Elevatar Mfg. Co.....32a/15
Warsaw Elevator Co.....32a/16
Westinghouse Electric Corp.....32o/19

fronts for
see *enclosures—elevator*

gates for
see *gates—elevator; gates—folding*

hand power
Chelsea Elevator Co.....32a/2
Ernst, Charles K., Inc.....32c/1
Matot, D. A., Inc.....32a/6
Manarch Elevator & Machine Co.....32a/7
Potts Ash Hoist Corp.....32c/2
Sedgwick Machine Works.....32a/14

home
see *elevators—residentiol*

hydrauiic
Capital Elevotor & Mfg. Co.....32a/1
Globe Hoist Co.....32a/4
Monarch Elevator & Mochine Co.....32a/7
Montgomery Elevator Co.....32a/8
Rotary Lift Co.....32a/13
Warsaw Elevotor Co.....32a/16

invalid
see *elevators—residentiol*

loading dock
Globe Hoist Co.....32a/4
Rotory Lift Co.....32a/13

lubricators for
see *lubricators—elevator*

passenger
Copital Elevator & Mfg. Co.....32a/1
Chelsea Elevator Co.....32a/2
Inclinotor Co. of Americo.....32a/5
Monarch Elevator & Machine Co.....32a/7
Montgomery Elevator Co.....32a/8
Payne, F. S., Co.....32a/11
Otis Elevotor Co.....32a/10
Rotary Lift Co.....32a/13
Sedgwick Machine Works.....32a/14
Warner Elevator Mfg. Co.....32a/15
Warsaw Elevator Co.....32a/16
Westinghouse Electric Corp.....32a/19

pumping units for
see *elevators—hydraulic*

residential
Chelsea Elevotor Co.....32a/2
Inclinator Co. of America.....32a/5
Matot, D. A., Inc.....32a/6
Monarch Elevator & Machine Co.....32a/7
Otis Elevotor Co.....32o/10
Payne, F. S., Co.....32a/11
Sedgwick Machine Works.....32a/14
Warner Elevator Mfg. Ca.....32a/15
Watson Elevotor Co., Inc.....32a/18

elevators cont.

residential—inclined
Inclinator Co. of America.....32a/5
Sedgwick Machine Works.....32a/14

service station
Globe Hoist Co.....32a/4
Rotary Lift Co.....32a/13

sidewaik
Capital Elevator & Mfg. Co.....32a/1
Chelsea Elevator Co.....32a/2
Ernst, Charles K., Inc.....32c/1
Globe Haist Co.....32a/4
Potts Ash Hoist Corp.....32c/2
Rotary Lift Co.....32a/13
Sedgwick Machine Works.....32a/14

signai systems for
Chelsea Elevator Co.....32a/2
Monarch Elevator & Machine Ca.....32a/7
Otis Elevatar Co.....32a/10
Payne, F. S., Co.....32a/11
Sedgwick Machine Works.....32a/14
Warsaw Elevator Co.....32a/16
Westinghouse Electric Corp.....32a/19

stage
Rotary Lift Co.....32a/13
Vasconcellos, Joseph, Inc.....22e/1

thresholds for
see *thresholds—safety—non-slip*

eliminators

fog
Wing, L. J., Mfg. Co.....28d/21

ells

see *fittings—pipe*

embrasures

window—steel
see *panels—metal*

enameled sheets

see *sheet, strip, plate—vitreous or porcelain enomeled*

enameling sheets

see *metal—enomeling*

enamels

Armstrong Cork Co.....10b/1
Breinig 8rathers, Inc.....14/1a
Cork Import Corp.....10b/2
Cork Insulation Co., Inc.....10b/3
Devoe & Roynolds Co., Inc.....14/2
du Pont de Nemours, E. I., & Co., (Inc.).14/3
Empire Varnish Co.....14/5
Glidden Ca.....14/6
Haynes Products Co.....9a/9
Horn, A. C., Co., Inc.....9a/10
Keystone Varnish Co.....14/7
Koppers Co., Inc.....8a/6
O'8rien Carp. 14/12
Paragon Paint & Varnish Carp.....14/13
Patterson-Sargent Co.....14/14
Pittsburgh Plote Glass Ca.....14/15
Pratt & Lambert-Inc.....14/16

enamels cont.

Roberts Paint Corp.....14/17
Sherwin-Williams Co.....14/19a
Sonneborn, L., Sons, Inc.....9a/17
Standard Varnish Works.....14/19b
Tach Brathers Inc.....9a/19
U. S. Gutta Percha Paint Co.....14/21
Wilbur & Williams Co.....14/24

plastic
Glidden Co.....14/6

undercoat
Armstrong Cork Co.....10b/1
8reining 8rothers, Inc.....14/1a
Devae & Raynolds Co., Inc.....14/2
du Pont de Nemours, E. I., & Ca., (Inc.).14/3
Empire Varnish Co.....14/5
Glidden Co. 14/6
Horn, A. C., Co., Inc.....9a/10
O'Brien Corp. 14/12
Paragon Paint & Varnish Corp.....14/13
Patterson-Sargent Co. 14/14
Pittsburgh Plate Glass Co.....14/15
Pratt & Lambert-Inc.....14/16
Sherwin-Williams Co. 14/19a
Sonneborn, L., Sons, Inc.....9a/17
Standord Varnish Works.....14/19b
U. S. Gutta Percha Paint Co.....14/21
Wilbur & Williams Co.....14/24

wet surface
Glidden Co. 14/6
Toch 8rothers Inc.....9a/19
Wilbur & Williams Co.....14/24

enclosures

elevator
Aetna Steel Products Corp.....15a/1
Art Metal Construction Co.....15a/4
Dohlstrom Metallic Door Ca.....15a/6
Monarch Elevator & Machine Co.....32a/7
Montgomery Elevator Co.....32a/8
Warsaw Elevator Co.....32a/16

radiator
see *radiators—covers and cabinets for*

shower bath
see *shower baths—cabinet unit*

sink
see *cabinets; sinks—kitchen cabinet*

engineers

jail construction
see *jail equipment*

engines

internal combustion
Worthington Pump & Machinery Corp..28a/10

engraving

Spencer Studios, Inc.....22a/3

erectors

steel—contractors
American Institute of Steel Construction, Inc.....3d/1
International Chimney Corp.....28g/4
O'Connor, Thomas, & Co., Inc.....1a/4
Terminal Construction Corp.....1a/5

products

escalators
see *stairs—moving*

escutcheons
see *hardware*

evaporators
Trane Co. 28a/8

exhaust
fans
see *fans*

ventilators
see *ventilators*

exhibits
(see also cases—display)
Vascancellas, Joseph, Inc.....22e/1

exit hardware
(see also fire-escapes; turnstiles; hardware)

fire or panic
Clayton & Lambert Mfg. Co.....17b/2
Detroit Steel Products Co.....15a/7
Lockwood Hardware Mfg. Co.....17b/3
Richards-Wilcox Mfg. Co.....17a/10
Von Duprin Div.....17b/5

sliding pole
see *poles—sliding*

expanded metal lath
see *lath*

expansion
bolts
see *bolts—expansion*

joints
see *joints—expansion*

loops—pipe
see *piping—prefabricated*

extractors
laundry
Chicago Dryer Co.....24d/1

extrusions
see *shapes—metal—extruded*

f

fabric
concrete reinforcement
see *concrete—reinforcement—wire mesh*

flashing
see *waterproofing—membrane method—fabric*

glass
Lexington Supply Co.....9a/12

fabric *cont.*
metal—woven
see *wire—cloth*

wall coverings
see *wall coverings*

waterproofing
see *waterproofing—membrane method—fabric*

fabricators
metal plate
see *metal plate construction*

structural steel
see *structural—steel—fabricators, designers and welders*

wire
see *wire—work*

fans
(see also blowers; ventilators)

attic
see *ventilators*

ceiling
(see also ventilators—ceiling)
Hunter Fan & Ventilating Co., Inc.....28b/8

centrifugal
see *blowers—centrifugal*

desk, bracket or pedestal
Emerson Electric Mfg. Co.....28b/7
Hunter Fan & Ventilating Co., Inc.....28b/8
Ilg Electric Ventilating Co.....28b/9
Schwitzer-Cummins Co. 28b/12

disc or propeller
Acme Equipment Co.....28b/5
Allen Ventilator Div.....19b/1
American Blower Corp.....28a/2
American Coolair Corp.....28b/6
Clarage Fan Co.....28a/5
Emerson Electric Mfg. Co.....28b/7
Hunter Fan & Ventilating Co., Inc.....28b/8
Ilg Electric Ventilating Co.....28b/9
Joy Mfg. Co.....28b/10
Pryne & Co., Inc.....28b/11
Schwitzer-Cummins Co. 28b/12
Shepler Mfg. Co.....28b/13
Trane Co.....28a/8
Victor Electric Products, Inc.....28b/15
Westinghouse Electric Corp.....28a/9
Wing, L. J., Mfg. Co.....28d/21

exhaust—acidproof
Duriron Co., Inc.....26b/2
Emerson Electric Mfg. Co.....28b/7

hangar outlets for
see *boxes*

kitchen
see *kitchen equipment—fans and ventilators*

roof
see *ventilators*

ventilating or exhaust
Acme Equipment Co.....28b/5
American Blower Corp.....28a/2
American Coolair Corp.....28b/6
Carrier Corp.....28a/3

fans *cont.*
ventilating or exhaust *cont.*
Century Fan & Ventilator Co.....19b/5
Clarage Fan Co.....28a/5
Eagle-Picher Co.....10a/5
Emerson Electric Mfg. Co.....28b/7
General Electric Co.....23a/5
Hunter Fan & Ventilating Co., Inc.....28b/8
Ilg Electric Ventilating Co.....28b/9
Jay Mfg. Co.....28b/10
Pryne & Co., Inc.....28b/11
Schwitzer-Cummins Co. 28b/12
Shepler Mfg. Co.....28b/13
Trade-Wind Matorfans, Inc.....28b/14
Trane Co.....28a/8
Victor Electric Products, Inc.....28b/15
Westinghouse Electric Corp...23a/20; 28a/9
Winco Ventilator Co., Inc.....7c/6
Wing, L. J., Mfg. Co.....28d/21

window—ventilating
Acme Equipment Co.....28b/5
American Coolair Corp.....28b/6
Emerson Electric Mfg. Co.....28b/7
Hunter Fan & Ventilating Co., Inc.....28b/8
Ilg Electric Ventilating Co.....28b/9
Schwitzer-Cummins Co. 28b/12
Westinghouse Electric Corp.....28a/9

fasteners
acoustical and wallboard
Mid-West Acoustical & Supply Co.....11b/3
Miracle Adhesives Corp.....13J/3
Pomeroy, S. H., Co.....11b/2
Sanymetal Products Co., Inc.....11b/1
Upson Co.....12b/4

carpet
see *rugs and carpets*

door or window
see *hardware*

faucets
see *fittings—sink, lavatory or toilet*

feed water treatments
see *water—softeners and treating equipment*

feeders
chemical
Paddock Pool Equipment Co.....22f/5
Permutit Co.....27a/17
Wallace & Tiernan Co., Inc.....22f/6

felt
see *waterproofing—membrane method—fabric; insulation—building; paper and felts*

fencing
chain link or wire
Colorado Fuel & Iron Corp.....21g/1
Cyclone Fence Div.....21g/2
Page Fence Assn.....21g/3
Pittsburgh Steel Co.....21g/4
Stewart Iron Works Co., Inc.....21g/5

fencing cont.

iron or steel
Cyclone Fence Div.....21g/2
Decatur Iron & Steel Co.....22h/1
National Assn. of Ornamental Metal Mfrs. 6e/9o
Page Fence Assn.....21g/3
Pittsburgh Steel Co.....21g/4
Stewart Iron Works Co., Inc.....21g/5
Vulcan Rail & Construction Co.....6h/3

wood
Colonial Lumber Specialties, Inc.....8b/6o
Western Pine Assn.....5o/4

fiberboard

see wallboard

filing equipment

key
Moore, P. O., Inc.....17b/1

metal
All-Steel Equipment Inc.....22c/1
Art Metal Construction Co.....22o/10
Diebold, Inc. 22o/7
General Fireproofing Co.....22g/1
Herring-Hall-Marvin Safe Co.....22a/8
Lyon Metal Products, Inc.....22c/4
Mosler Safe Co.....22o/9
Standard Steel Equipment Co., Inc.....22c/8
Watson Mfg. Co., Inc.....22o/11; 22g/3

wood
Remington Rand Inc.....22d/8

fillers

cement patching
see cement—patching and resurfacing

concrete
Horn, A. C., Co., Inc.....9a/10
Koppers Co., Inc.....8o/6
Minwax Co., Inc.....9o/14
Ruberoid Co. 8o/7
Rust-Oleum Corp.....14/19
Sonneborn, L., Sons, Inc.....9o/17
Toch Brothers Inc.....9o/19
Wilbur & Williams Co.....14/24

crack or joint
see joints—expansion; caulking—compounds; waterproofing

wood—liquid or paste
Breinig Brothers, Inc.....14/1o
du Pont de Nemours, E. I., & Co., (Inc.).14/3
Glidden Co.....14/6
Horn, A. C., Co., Inc.....9o/10
Jennison-Wright Corp. 13g/5
Kuhls, H. B. Fred.....9o/11
Masury-Young Co.....13h/2
O'Brien Corp.....14/12
Patterson-Sargent Co. 14/14
Pittsburgh Plate Glass Co.....14/15
Pratt & Lambert-Inc.....14/16
Sherwin-Williams Co.....14/19o
Sonneborn, L., Sons, Inc.....9o/17
Toch Brothers Inc.....9o/19

filters

air
American Air Filter Co., Inc.....28b/1
Owens-Corning Fiberglas Corp.....28b/2
Trion, Inc.....28b/3
Westinghouse Electric Corp.....28b/4

drinking water
Filtrine Mfg. Co.....27o/16
Permutit Co.....27o/17

electronic
American Air Filter Co., Inc.....28b/1
Trion, Inc. 28b/3
Westinghouse Electric Corp.....28b/4

gravity, pressure or vacuum
American Air Filter Co., Inc.....28b/1
Filtrine Mfg. Co.....27o/16
Permutit Co.....27o/17
Trion, Inc. 28b/3
Westinghouse Electric Corp.....28b/4
Worthington Pump & Machinery Corp..28o/10

swimming pool
Filtrine Mfg. Co.....27o/16
Paddock Pool Equipment Co.....22f/5
Permutit Co. 27o/17

finishes

(see also paint; varnish; wax)

gymnasium floor—non-slippery
Bruce, E. L., Co.....13g/2
Empire Varnish Co.....14/5
Glidden Co. 14/6
Hillyard Soles Cos.....13h/1
O'Brien Corp.....14/12
Patterson-Sargent Co.....14/14
Pratt & Lambert-Inc.....14/16
Sherwin-Williams Co.....14/19o
Sonneborn, L., Sons, Inc.....9o/17
Truscon Laboratories.....14/20

stained wax
Minwax Co., Inc.....14/9
Sonneborn, L., Sons, Inc.....9o/17

fire

alarms
see alarms

detector systems
see alarms

doors
see specific type of door; shutters—fire

escapes
Potter Mfg. Co.....6g/3

exit devices
see exit hardware—fire or panic

extinguishing apparatus
Allen, W. D., Mfg. Co.....27c/1
Elkhart Brass Mfg. Co.....27c/2
Grinnell Co., Inc.....27c/3

hose cabinets
see cabinets—hose

hose, hose racks and reels
Allen, W. D., Mfg. Co.....27c/1
Elkhart Brass Mfg. Co.....27c/2

hose nozzles
see nozzles

fire cont.

resistant treatments of lumber
see preservatives—wood—fire retardant; lumber—fireproofed and/or fireproofing

shutters
see shutters—fire

siamese hose connections
see siamese hose connections; hydrants

sprinkler systems
Grinnell Co., Inc.....27c/3

station poles
see poles

valves
see valves—fire line

fireplace

accessories
Bach, Oscar B., Industries, Inc.....6e/1
Donley Brothers Co.....28g/5
Heatilator, Inc.....28g/6
Hohmann & Barnard, Inc.....3f/3
Jackson, Wm. H., Co.....28g/7
Majestic Co. 28g/8
Shepler Mfg. Co.....28b/13
Superior Fireplace Co.....28g/9

ash dumps
see dumps—ash

cleanouts
see doors—ash pit, trap or clean-out

dampers
see dampers or registers—fireplace

facings—granite, stone, tile, etc.
Alberene Stone Corp. of Virginia.....4o/11
Brier Hill Stone Co.....4a/12
Jackson, Wm. H., Co.....28g/7

grates
see fireplace—accessories

heaters
see heaters—fireplace unit

mantels
Brier Hill Stone Co.....4o/12
Carr, Adams & Collier Co.....5c/1
Curtis Companies Service Bureau.....5c/2
Jackson, Wm. H., Co.....28g/7

outdoor
Donley Brothers Co.....28g/5
Majestic Co. 28g/8

screens
see fireplace—accessories

smoke chambers
Majestic Co.....28g/8

fittings

conduit—electrical
see conduit—electrical—fittings for

fire hose
Allen, W. D., Mfg. Co.....27c/1
Elkhart Brass Mfg. Co.....27c/2

hot water
Bell & Gossett Co.....28c/1
Thrush, H. A., & Co.....28c/7
Trane Co. 28o/8

products

fittings cont.

lavatory
see *fittings—sink, lavatory or toilet; hardware —lavatory and toilet partition*

pipe—acid resistant
Duriron Co., Inc.....26b/2
Knight, Maurice A.....26b/3

pipe or tube
American Brass Co.....26a/1
Chase Brass & Copper Co., Inc.....26a/2
Duriron Co., Inc.....26b/2
Mueller Brass Co.....26a/7
Robinson Clay Product Co.....26a/6
Triplex Heating Specialty Co., Inc.....28c/8
Walworth Co.....26a/8

pipe railing
see *railings—pipe and fittings for*

radiator
Triplex Heating Specialty Co., Inc.....28c/B
Webster, Warren, & Co.....28c/9

shower bath
see *shower baths—fixtures for*

sink, lavatory or toilet
Eljer Co. 24a/1
Elkay Mfg. Co.....23a/4
Hoffman Specialty Co.....27e/3a
Midwest Mfg. Co.....23a/12
Speakman Co.....24a/12

fixtures

casement window
see *hardware—casement window*

laboratory
see *laboratory equipment*

lighting
see *lighting fixtures*

sink and lavatory
see *fittings—sink, lavatory or toilet*

flagging

Crab Orchard Stone Co., Inc.....4a/14
Eastern Quarries, Inc.....4a/2
Fletcher, H. E., Co.....4a/3
O'Brien Bros. Slate Co., Inc.....8b/9
Rising & Nelson Slate Co., Inc.....8b/10
Tennessee Stone Co., Inc.....4a/18
Vermont Structural Slate Co., Inc.....13b/13
Yorkmont Slate Co., Inc.....8b/11

flagpoles

accessories for—trucks, fixtures, etc.
American Flagpole Equipment Co.....6f/1
Babcock-Davis Corp.....6f/2
Lingo, John E., & San, Inc.....6f/3
North American Iron & Steel Co., Inc.....6f/4

bases for
American Flagpole Equipment Co.....6f/1
Babcock-Davis Corp. 6f/2
Fletcher, H. E., Co.....4a/3
General Bronze Corp.....6e/7
Lingo, John E., & San, Inc.....6f/3
North American Iron & Steel Co., Inc.....6f/4

flagpoles cont.

metal
American Flagpole Equipment Co.....6f/1
Babcock-Davis Corp.....6f/2
Lingo, John E., & San, Inc.....6f/3
North American Iron & Steel Co., Inc.....6f/4

tilting
American Flagpole Equipment Co.....6f/1
Babcock-Davis Corp.....6f/2
North American Iron & Steel Co., Inc.....6f/4

wood
American Flagpole Equipment Co.....6f/1

flanges

pipe
see *fittings—pipe*

pipe hanger
Grinnell Co., Inc.....26a/3

flashings

blocks, forms and receivers for
American Asphalt Roof Corp.....8a/1
American Brass Co.....8c/1
Barrett Div. 8a/2
Carey, Philip, Mfg. Co.....8a/3
Cheney Flashing Co.....8d/1
Elgin-Butler Brick Co.....4d/4
Hohmann & Barnard, Inc.....3f/3
National Fireproofing Corp.....4d/8
Ruberoid Co.....8a/7
Wasco Flashing Co.....8d/6

combination—metal with fiber, bituminous compound or fabric
American Brass Co.....8c/1
Angier Corp.....9c/1a
Barrett Div. 8a/2
Chase Brass & Copper Co., Inc.....8c/4
Koppers Co., Inc.....8a/6
Mitchell-Rand Mfg. Co.....8d/3
Robertson, H. H., Co.....8c/11
Sandell Mfg. Co., Inc.....8d/4
Sisalkraft Co.....9c/2
Vallas, Lionel 15a/19
Wasco Flashing Co.....8d/6

fabric, asbestos, plastic, mastic, etc.
American Asphalt Roof Corp.....8a/1
Barrett Div.....8a/2
Brisk Waterproofing Co., Inc.....9a/4
Carey, Philip, Mfg. Co....8a/3; 8b/2; 8c/3
Flintkote Co.....8a/4; 9a/7
Johns-Manville 8a/5
Lexington Supply Co.....9a/12

pipe flange
Barrett Div.....8a/2
Josam Mfg. Co.....27e/4
Koppers Co., Inc.....8a/6

sheet metal
Aluminum Co. of America.....6a/1
American Brass Co.....8c/1
Barrett Div. 8a/2
Bethlehem Steel Co.....3d/2
Chase Brass & Copper Co., Inc.....8c/4
Cheney Flashing Co.....8d/1
Follansbee Steel Corp.....8c/5
Koppers Co., Inc.....8a/6

flashings cont.

sheet metal cont.
Mitchell-Rand Mfg. Co.....8d/3
Nichols Wire & Aluminum Co.....8c/7a
Permanente Products Co.....6a/3
Republic Steel Corp.....6c/5
Revere Copper & Brass Inc.....8c/9
Ruberoid Co.....8a/7
Sharon Steel Corp.....8d/5
Wasco Flashing Co.....8d/6

floodlights

Century Lighting Inc.....30a/4
General Lighting Co.....30a/9
Globe Lighting Products, Inc.....30a/10
Leader Electric Co.....30a/13
Paddock Pool Equipment Co.....22f/5
Pittsburgh Reflector Co.....30a/15
Spero Electric Corp.....30a/16
Sylvania Electric Products Inc.....30a/17
Westinghouse Electric Corp.....30a/19

floor construction

Detroit Steel Products Co.....3c/3

acoustical
Durisol, Inc.....3c/13a
Flexicore Co., Inc.....3c/15
Johns-Manville 11a/5
POrete Mfg. Co.....3c/19
Rackle, Geo., & Sons Co.....3c/21
Waylite Co.....4e/10

cellular beam and electrical duct system
Robertson, H. H., Co.....3c/7

concrete—beamless
Elgin-Butler Brick Co.....4d/4
Flexicore Co., Inc.....3c/15
Smooth Ceilings System.....3b/6

concrete—metal forms
Alabama Metal Lath Co.....12a/1
Baker-Roos, Inc. 3e/1
Ceco Steel Products Corp.....3b/1
Concrete Reinforcing Steel Institute.....3b/3
Detroit Steel Products Co.....3c/3
Economy Forms Corp.....3e/2a
Goldsmith Metal Lath Co.....3b/4
Mahon, R. C., Co.....3c/6

concrete or lightweight concrete—poured-in-place
Concrete Reinforcing Steel Institute.....3b/3
Goldsmith Metal Lath Co.....3b/4
Lally Column Co.....3d/6
POrete Mfg. Co.....3c/19
Woylite Co.....4e/10

concrete slab—insulating
Cemenstone Corp. 3b/2
Durisol, Inc.....3c/13a
Flexicore Co., Inc.....3c/15
Mortin Fireproofing Corp.....3c/17
Precast Slab & Tile Co.....3c/20

concrete slab—lightweight
Cemenstone Corp. 3b/2
Concrete Plank Co., Inc.....3c/13
Durisol, Inc.....3c/13a
Flexicore Co., Inc.....3c/15
Lastik Products Co., Inc.....3c/16
Martin Fireproofing Corp.....3c/17

floor construction cont.

concrete slab—lightweight cont.
Morse Cement Tile Co.....3c/18
POrete Mfg. Co.....3c/19
Precast Slob & Tile Co.....3c/20
Rackle, Geo., & Sons Co.....3c/21
Waylite Co.....4e/10

concrete slab—nailing
Concrete Plonk Co., Inc.....3c/13
Durisol, Inc.....3c/13o
Lastik Products Co., Inc.....3c/16
Martin Fireproofing Corp.....3c/17
Morse Cement Tile Co.....3c/18
POrete Mfg. Co.....3c/19
Precost Slob & Tile Co.....3c/20
Rockle, Geo., & Sons Co.....3c/21
Woylite Co.....4e/10

contractors
Lastik Products Co., Inc.....3c/16
Morse Cement Tile Co.....3c/1B

electrical duct system
see *floor construction—cellular beam and electrical duct system*

filler tile
Elgin-Butler Brick Co.....4d/4
Woylite Co.....4e/10

glass and concrete
see *skylights—glass—concrete or metal construction*

hollow tile
Elgin-Butler Brick Co.....4d/4
Notionol Fireproofing Corp.....4d/B

lightweight
see *floor construction—concrete*

metal panel
Detroit Steel Products Co.....3c/3
Goldsmith Metol Lath Co.....3b/4
Robertson, H. H., Co.....3c/7

nailing concrete
see *floor construction—concrete slob*

steel truss, joist or I-beam
Bethlehem Steel Co.....3d/2
Ceco Steel Products Corp.....3d/3
Greot Lokes Steel Corp.....3d/4
Lith-I-Bor Co.....3d/7
Mocomber Inc.....3d/8
Truscon Steel Co.....3d/9

flooring

abrasive
Acme Asbestos Covering & Flooring Co..13c/6
Americon Abrosive Metols Co.....13o/9
Master Builders Co.....9o/13
Notionol Terrozzo & Mosoic Assn., Inc..13c/3
Norton Co.....13c/4
Oxychloride Cement Assn., Inc.....13c/10
Truscon Loborotories.....9o/20

acid resistant
Acme Asbestos Covering & Flooring Co..13c/6
Aquobor Co.....9o/3
Drehmonn Poving & Flooring Co.....13c/B
Duroflex Corp.....13d/1
Goodyeor Tire & Rubber Co., Inc.....13e/6
Knight, Maurice A.....26b/3
Mostic Tile Corp. of America.....13d/6

flooring cont.

acid resistant cont.
Moulding, Thos., Floor Mfg. Co.....13d/7
Murroy Tile Co., Inc.....13b/3
Oxychloride Cement Assn., Inc.....13c/10
Robbins Tire & Rubber Co., Inc.....13e/9
Rabinson Cloy Product Co.....26o/6
Stonhord Co.....13c/12
Structurol Slote Co.....4a/17
Taylor Mfg. Co.....13e/10
Tile-Tex Co., Inc.....13d/B
Truscon Loborotories.....9o/20

armor
see *grids—flooring*

asphalt mastic
Armstrong Cork Co.....13e/2
Duroflex Corp.....13d/1
Flintkote Co.....13d/2
Moulding, Thos., Floor Mfg. Co.....13d/7

asphalt tile
Armstrong Cork Co.....13e/2
Congoleum-Noirn Inc.....13e/3
Duroflex Corp.....13d/1
Hochmeister-Inc. 13d/3
Hood Rubber Co.....13e/7
Johns-Monville 13d/4
Kennedy, Dovid E., Inc.....13d/5
Mostic Tile Corp. of Americo.....13d/6
Moulding, Thos., Floor Mfg. Co.....13d/7
Tile-Tex Co., Inc.....13d/B
Uvolde Rock Aspholt Co.....13d/9

asphalt tile—non-slip
Armstrong Cork Co.....13e/2
Congoleum-Nairn Inc.....13e/3
Duroflex Corp.....13d/1
Kennedy, David E., Inc.....13d/5
Moulding, Thos., Floor Mfg. Co.....13d/7

brick
see *brick*

cement—aggregates for
see *oggregates*

cement—curing and protection
see *concrete—curing moteriols; paper and felts—concrete curing ond protection*

cement—finish for
Adensite Co., Inc.....9o/1
Anti-Hydro Waterproofing Co.....9o/2
Aquobor Co.....9o/3
Empire Vornish Co.....14/5
Flintkote Co.....13d/2
Glidden Co.....14/6
Hillyord Soles Cos.....13h/1
Horn, A. C., Co., Inc.....9a/10
Kolmon Floor Co., Inc.....13c/9
Kedmont Mfg. & Woterproofing Co...9a/10o
Moster Builders Co.....9o/13
Masury-Young Co.....13h/2
Meduso Portlond Cement Co.....4e/2
Minwox Co., Inc.....9o/14
Pittsburgh Plote Glass Co.....14/15
Portlond Cement Assn.....4e/4
Robertson, H. H., Co.....13c/11
Rust-Oleum Corp.....14/19
Sonneborn, L., Sons, Inc.....9o/17
Stonhord Co.....13c/12
Tremco Mfg. Co.....7b/3
Truscon Loborotories.....9a/20; 14/20
Wilbur & Williams Co.....14/24

flooring cont.

cement—patching for
see *cement—potching ond resurfocing*

cement—topping for
Adensite Co., Inc.....9a/1
Anti-Hydro Wóterproofing Co.....9a/2
Donoldson Floors, Inc.....13c/7
Flintkote Co.....13d/2
Horn, A. C., Co., Inc.....9a/10
Kolman Flaor Co., Inc.....13c/9
Kedmont Mfg. & Woterproofing Co...9o/10o
Moster Builders Co.....9a/13
Robertson, H. H., Co.....13c/11
Sonnebarn, L., Sons, Inc.....9a/17
Stonhard Co.....13c/12

concrete
Portland Cement Assn.....4e/4

contractors
Guoronteed Woterproofing Co.....1b/4
Kolmon Floor Co., Inc.....13c/9

cork and cork composition
Armstrong Cork Co.....13e/2
Cork Insulation Co., Inc.....13e/4
Kennedy, Dovid E., Inc.....13d/5

dividing strips
see *dividers*

edgings
see *edgings—flooring*

fiber block or board
Fir-Tex Insuloting Boord Co.....10o/6

finishes
see *finishes; paint; varnish; wax*

finishing, sanding, polishing machines
Hillyard Soles Cos.....13h/1
Mosury-Young Co.....13h/2

glass
Americon 3 Woy-Luxfer Prism Co.....19o/2

granite
Fletcher, H. E., Co.....4o/3

grating
see *gratings*

greaseproof
Americon Abrosive Metals Co.....13o/9
Armstrong Cork Co.....13e/2
Donoldson Floors, Inc.....13c/7
Drehmann Paving & Flooring Co.....13c/B
Flintkote Co.....13d/2
Goodyear Tire & Rubber Co., Inc.....13e/6
Hood Rubber Co.....13e/7
Johns-Monville 13d/4
Kedmont Mfg. & Woterproofing Co....9o/10o
Kennedy, Dovid E., Inc.....13d/5
Knight, Mourice A.....26b/3
Mostic Tile Corp. of Americo.....13d/6
Mosoic Tile Co.....13b/2
Moulding, Thos., Floor Mfg. Co.....13d/7
Murray Tile Co., Inc.....13b/3
Oxychloride Cement Assn., Inc.....13c/10
Robbins Tire & Rubber Co., Inc.....13e/9
Rabertson, H. H., Co.....13c/11
Stonhord Co.....13c/12
Taylor Mfg. Co.....13e/10
Tile-Tex Co., Inc.....13d/B
Uvolde Rock Asphalt Co.....13d/9

products

flooring cont.

grids
see *grids—flooring*

hardeners and densifiers
see *hardeners and densifiers*

hospital
see *grids—flooring—electrical grounding*

industrial
see *specific type of*

leather
United States Plywood Corp.....13i/12

lights for
see *lights—sidewalk, roof, etc.*

linoleum
see *linoleum*

magnesite composition
see *flooring—magnesium oxychloride cement*

magnesium oxychloride cement
Acme Asbestos Covering & Flooring Co..13c/6
Ceresit Waterproofing Corp.....9o/6
Moulding, Thos., Floor Mfg. Co.....13d/7
Oxychloride Cement Assn., Inc.....13c/10

mastic for wood blocks
see *cement—mastic*

mosaic
see *tile—clay*

non-sparking or static discharging
Acme Asbestos Covering & Flooring Co..13c/6
Aquabar Co.....9o/3
Armstrong Cork Co.....13e/2
Congoleum-Nairn Inc.....13e/3
Donaldson Floors, Inc.....13c/7
Goodyear Tire & Rubber Co., Inc.....13e/6
Kedmont Mfg. & Waterproofing Co....9o/10a
Master Builders Co.....9o/13
Moulding, Thos., Floor Mfg. Co.....13d/7
Oxychloride Cement Assn., Inc.....13c/10
Robertson, H. H., Co.....13c/11

parquetry
Appalachian Hardwood Mfrs., Inc.....5o/1
Bruce, E. L., Co.....13g/2
Connor Lumber & Land Co.....13g/2a
Harris Mfg. Co.....13g/3
Hoskelite Mfg. Corp.....13g/4
Maple Flooring Mfrs. Assn.....13g/6
Storm Flooring Co., Inc.....13g/8
Wood-Mosaic Co., Inc.....13g/9

plastic
Goodyear Tire & Rubber Co., Inc.....13e/6
Johns-Manville 13d/4
Moulding, Thos., Floor Mfg. Co.....13d/7
Robbins Tire & Rubber Co., Inc.....13e/9
Tile-Tex Co., Inc.....13d/8

plastic coating—non-slip
American Abrasive Metals Co.....13o/9
Flintkote Co.....13d/2
Mirocle Adhesives Corp.....13J/3

plates
see *plates*

pre-finished
see *specific type of flooring*

quartzite
Crab Orchard Stone Co., Inc.....4a/14
Tennessee Stone Co., Inc.....4a/1B

flooring cont.

resurfacers for
Aquabar Co.....9o/3
Ceresit Waterproofing Corp.....9o/6
Donaldson Floors, Inc.....13c/7
Duroflex Corp.....13d/1
Flintkote Co.....13d/2
Glidden Co.....14/6
Haynes Products Co.....9o/9
Horn, A. C., Co., Inc.....9a/10
Kalman Floor Co., Inc.....13c/9
Moulding, Thos., Floor Mfg. Co.....13d/7
Oxychloride Cement Assn., Inc.....13c/10
Robertson, H. H., Co.....13c/11
Stonhard Co.....13c/12

rubber
American Tile & Rubber Co.....13e/1
Armstrong Cork Co.....13e/2
Danbury Rubber Co.....13e/5
Goodyear Tire & Rubber Co., Inc.....13e/6
Hood Rubber Co.....13e/7
Kleistone Rubber Co., Inc.....13e/8
Robbins Tire & Rubber Co., Inc.....13e/9
Taylor Mfg. Co.....13e/10

slate
O'Brien Bros. Slate Co., Inc.....8b/9
Rising & Nelson Slate Co., Inc.....8b/10
Structurol Slate Co.....4o/17
Vermont Structural Slate Co., Inc.....13b/13
Yorkmont Slate Co., Inc.....8b/11

soapstone
Alberene Stone Corp. of Virginia.....4o/11

steel—open
see *gratings—walkway*

sub-surface leveling
Acme Asbestos Covering & Flooring Co..13c/6
Armstrong Cork Co.....13e/2
Ceresit Waterproofing Corp.....9o/6
Douglas Fir Plywood Assn.....5b/1
Duroflex Corp.....13d/1
Flintkote Co.....13d/2
Hochmeister-Inc. 13d/3
Homosote Co.....10a/9
Koppers Co., Inc.....Bo/6
Mirocle Adhesives Corp.....13J/3
Moulding, Thos., Floor Mfg. Co.....13d/7
Oxychloride Cement Assn., Inc.....13c/10
Sisalkraft Co.....9c/2
Stonhard Co.....13c/12
Storm Flooring Co., Inc.....13g/8

surfacer for—non-slip
see *finishes—gymnasium floor—non-slippery*

terrazzo
Acme Asbestos Covering & Flooring Co..13c/6
Donaldson Floors, Inc.....13c/7
Integro, Inc. 13o/11
Monhotton Terrazzo Brass Strip Co., Inc.13c/2
Moulding, Thos., Floor Mfg. Co.....13d/7
National Terrazzo & Mosaic Assn., Inc..13c/3
Oxychloride Cement Assn., Inc.....13c/10

terrazzo—aggregates for
see *aggregates—terrazzo*

terrazzo—binding strips
see *terrazzo—strips for*

tile
see *tile; flooring—rubber; etc.*

flooring cont.

treatments for
(see also wax; finishes; varnish)
Adensite Co., Inc.....9a/1
Anti-Hydro Waterproofing Co.....9o/2
Aquabar Co. 9o/3
Breinig Brothers, Inc.....14/1o
Bruce, E. L., Co.....13g/2
Empire Varnish Co.....14/5
Haynes Products Co.....9a/9
Hillyard Soles Cos.....13h/1
Horn, A. C., Co., Inc.....9o/10
Jennison-Wright Corp. 13g/5
Kedmont Mfg. & Waterproofing Co..9a/10a
Master Builders Co.....9a/13
Mosury-Young Co. 13h/2
Minwax Co., Inc.....14/9
Pittsburgh Plate Glass Co.....14/15
Pratt & Lambert-Inc.....14/16
Sonneborn, L., Sons, Inc.....9a/17
Toch Brothers Inc.....9o/19
Tremco Mfg. Co.....7b/3
Truscon Laboratories.....9o/20; 14/20

underlayment
see *flooring—sub-surface leveling*

wood—beech
Appalachian Hardwood Mfrs., Inc.....5o/1
Bradley Lumber Co.....13g/1
Bruce, E. L., Co.....13g/2
Harris Mfg. Co.....13g/3
Maple Flooring Mfrs. Assn.....13g/6
National Oak Flooring Mfrs. Assn.....13g/7
Storm Flooring Co., Inc.....13g/8

wood—birch
Connor Lumber & Land Co.....13g/2o
Maple Flooring Mfrs. Assn.....13g/6
National Oak Flooring Mfrs. Assn.....13g/7
Storm Flooring Co., Inc.....13g/8

wood—maple
Appalachian Hardwood Mfrs., Inc.....5a/1
Bruce, E. L., Co.....13g/2
Connor Lumber & Land Co.....13g/2a
Harris Mfg. Co.....13g/3
Maple Flooring Mfrs. Assn.....13g/6
National Oak Flooring Mfrs. Assn.....13g/7
Storm Flooring Co., Inc.....13g/8

wood—oak
Appalachian Hardwood Mfrs., Inc.....5o/1
Bradley Lumber Co.....13g/1
Bruce, E. L., Co.....13g/2
Harris Mfg. Co.....13g/3
Hoskelite Mfg. Corp.....13g/4
Jennison-Wright Corp. 13g/5
National Oak Flooring Mfrs. Assn.....13g/7
Storm Flooring Co., Inc.....13g/8
Wood-Mosaic Co., Inc.....13g/9

wood—pecan
Bradley Lumber Co.....13g/1
Bruce, E. L., Co.....13g/2
National Oak Flooring Mfrs. Assn.....13g/7

wood—pine
Jennison-Wright Corp. 13g/5

wood—walnut
Bruce, E. L., Co.....13g/2
Harris Mfg. Co.....13g/3
Storm Flooring Co., Inc.....13g/8

flooring cont.

wood block—built-up
Bruce, E. L., Co.....13g/2
Haskelite Mfg. Carp.....13g/4
Jennisan-Wright Corp. 13g/5

wood block—creosoted or treoted end groin
Jennisan-Wright Carp. 13g/5
Republic Creosoting Ca.....5d/6

wood block—mastic set
Appalachian Hardwood Mfrs., Inc.....5a/1
Bruce, E. L., Co.....13g/2
Cannar Lumber & Land Ca.....13g/2a
Harris Mfg. Ca.....13g/3
Haskelite Mfg. Corp.....13g/4
Jennison-Wright Corp. 13g/5
Maple Flaaring Mfrs. Assn.....13g/6
Republic Creasoting Co.....5d/6
Storm Flooring Co., Inc.....13g/8

wood block—naturol or untreoted
Appalachian Hardwood Mfrs., Inc.....5a/1
Bruce, E. L., Ca.....13g/2

wood pionk
Appalachian Hardwood Mfrs., Inc.....5a/1
Bradley Lumber Co.....13g/1
Bruce, E. L., Co.....13g/2
Cannar Lumber & Land Ca.....13g/2a
Harris Mfg. Co.....13g/3
Storm Flaaring Ca., Inc.....13g/8
Waad-Mosaic Ca., Inc.....13g/9

wood strip—mastic set
Appalachian Hardwood Mfrs., Inc.....5a/1
Cannor Lumber & Land Co.....13g/2a
Harris Mfg. Co.....13g/3
Maple Flooring Mfrs. Assn.....13g/6
Storm Flooring Ca., Inc.....13g/8
Waod-Mosaic Co., Inc.....13g/9

flues

dampers for
see dampers or registers

linings for
Elgin-Butler Brick Ca.....4d/4
Hocking Valley Brick Ca.....4d/7
Natianal Firepraafing Corp.....4d/8
Rabinson Clay Product Co.....26a/6

food preparation and service equipment

Blickman, S., Inc.....23b/1
Elkay Mfg. Ca.....23a/4
Habart Mfg. Co.....23b/2
Olson, Samuel, Mfg. Ca., Inc.....23b/4a
Van, John, Ronge Co.....23b/5

forgings

Allegheny Ludlum Steel Corp.....6c/1
Aluminum Co. of America.....6a/1
Revere Copper & Brass Inc.....27a/7

form liners

Douglas Fir Plywaad Assn.....5b/1
Fir-Tex Insulating Baard Co.....3e/3
Galdsmith Metal Lath Ca.....3b/4
Masonite Corp.....13i/9

forms—concrete

coating for
Harn, A. C., Ca., Inc.....9a/10
Tach Brothers Inc.....9a/19

contractors for
Ceca Steel Praducts Carp.....3b/1

fibre
Sonaca Products Ca.....3e/7

filler tile
see flaar canstructian—filler tile

flashing
see flashings—blacks, farms and receivers far

gypsum
United States Gypsum Ca.....3c/11

hangers for
Alabama Metal Lath Co.....12a/1
Canver Steel & Wire Co.....3e/2
Duplex Hanger Co.....3f/2
Hahmann & Barnard, Inc.....3f/3
Richmond Screw Anchar Ca., Inc.....3e/5

linings for
see farm liners

metal
Baker-Raos, Inc. 3e/1
Bethlehem Steel Ca.....3d/2
Ceca Steel Praducts Corp.....3b/1
Cancrete Reinfarcing Steel Institute.....3b/3
Detroit Steel Products Ca.....3c/3
Ecanamy Farms Corp.....3e/2a
Goldsmith Metal Lath Co.....3b/4
Mahan, R. C., Co.....3c/6

permanent
Cancrete Reinforcing Steel Institute.....3b/3
Detrait Steel Products Co.....3c/3
Durisal, Inc. 3c/13a
Galdsmith Metal Lath Ca.....3b/4
Mahon, R. C., Co.....3c/6
Sanaca Praducts Co.....3e/7

plywood
Douglas Fir Plywaad Assn.....5b/1

removable
Baker-Raas, Inc. 3e/1
Bethlehem Steel Ca.....3d/2
Ceca Steel Products Corp.....3b/1
Concrete Reinfarcing Steel Institute.....3b/3
Economy Farms Corp.....3e/2a
Richmand Screw Anchor Co., Inc.....3e/5

rentals or sale
Baker-Raas, Inc. 3e/1
Bethlehem Steel Ca.....3d/2
Ceca Steel Praducts Corp.....3b/1
Cancrete Reinforcing Steel Institute.....3b/3
Ecanomy Farms Carp.....3e/2a
Galdsmith Metal Lath Ca.....3b/4

rubber tube—inflated
Flexicare Co., Inc.....3c/15

ties, clamps and spreaders for
Alabama Metal Lath Ca.....12a/1
Baker-Raas, Inc. 3e/1
Canver Steel & Wire Ca.....3e/2
Economy Forms Carp.....3e/2a
Hahmann & Barnard, Inc.....3f/3
Laclede Steel Ca.....3d/5
Richmand Screw Anchor Co., Inc.....3e/5

foundation

contractors
(see alsa caissan contractars; piling contractars and engineers)
Drilled-In Caisson Corp. 2a/1
Eichleay Engineering Corp.....1b/2
MacArthur Concrete Pile Carp.....2a/2
Raymond Concrete Pile Ca.....2a/3
Spencer, White & Prentis, Inc.....2a/4
Western Faundatian Co.....2a/5

machinery isolation
see absorbers

foundry work

see castings; metal—ornamental; etc.

fountains

drinking
Century Brass Works, Inc.....27a/12
Cordley & Hayes.....27a/13
Eljer Co. 24a/1
Elkay Mfg. Co.....23a/4
Filtrine Mfg. Co.....27a/16
General Electric Ca.....28a/6
Taylar, Halsey W., Co.....27a/18

drinking—ice tank combination
Century Brass Works, Inc.....27a/12
Taylor, Halsey W., Co.....27a/18

drinking—refrigerating unit combination
Century Brass Works, Inc.....27a/12
Cordley & Hayes.....27a/13
Filtrine Mfg. Co.....27a/16
General Electric Ca.....28a/6
Taylor, Halsey W., Co.....27a/18

frames

blackboard
see blackboards—frames and mauldings far

bulletin board
see bulletin boards; directaries

door—angle iron or channel
Peelle-Richmond 15f/3
Richmond Fireproof Door Ca.....15a/17

door—buck and trim units
Aetna Steel Products Corp.....15a/1
American Art Metals Ca.....15a/2
American Steel Door Co.....15a/3
Anca Mfg. Ca., Inc.....20/2
Art Metal Canstructian Co.....15a/4
Craaks, W. D., & Sons.....15c/2
Dahlstram Metallic Daar Co.....15a/6
Detrait Steel Products Co.....15a/7
Diebold, Inc. 15a/8
Dusing & Hunt, Inc.....15a/9
Ellison Bronze Ca., Inc.....15a/10
Galdsmith Metal Lath Ca.....3b/4
Hauserman, E. F., Ca.....21a/2
Jamestawn Metal Carp.....15a/11
Kawneer Ca. 15a/12
Overly Mfg. Co.....15a/14
Peelle-Richmand 15f/3
Pianeer Fireproof Daar Carp.....15a/15
Pittsburgh Plate Glass Ca.....15b/2
Richmond Fireproof Daar Co..15a/17; 15a/18

frames cont.

door—buck and trim units cont.
Schacht Associotes, Inc.....15b/3
Trussbilt Div. 15o/18o
Virginio Metol Products Corp.....15o/20
World Steel Products Corp.....15o/21

door—metal
Aetno Steel Products Corp.....15o/1
Americon Art Metols Co.....15a/2
Americon Steel Door Co.....15o/3
Anco Mfg. Co., Inc.....20/2
Art Metol Construction Co.....15o/4
Boyley, Williom, Co.....16o/5
Dohlstrom Metollic Door Co.....15o/6
Detroit Steel Products Co.....15o/7
Diebold, Inc. 15o/8
Dusing & Hunt, Inc.....15o/9
Ellison Bronze Co., Inc.....15o/10
Flynn, Michoel, Mfg. Co.....16o/16
Illinois Bronze Works.....6e/8
Jomestown Metol Corp.....15o/11
Kowneer Co. 15o/12
Overly Mfg. Co.....15o/14
Peelle-Richmond 15f/3
Pioneer Fireproof Door Corp.....15o/15
Pittsburgh Plote Gloss Co.....15b/2
Relionce Art Metol Co.....15o/16
Richmond Fireproof Door Co..15o/17; 15o/18
Schocht Associotes, Inc.....15b/3
Thorn, J. S., Co.....16a/32
Trussbilt Div. 15o/18o
Vollos, Lionel 15o/19
Virginio Metol Products Corp.....15o/20
World Steel Products Corp.....15o/21

door—wood
Crooks, W. D., & Sons.....15c/2
Curtis Componies Service Bureou.....5c/2

glass block construction
Applemon Art Gloss Works.....7c/2
Richmond Fireproof Door Co.....15o/17
Willioms & Willioms Products Corp....16o/39

lightproof shade
Bor-Roy Products, Inc.....21d/1
Generol Leod Construction Corp.....21d/3
Roy Proof Corp.....21d/2

metal moulding
see mouldings; trim

showcase
Anco Mfg. Co., Inc.....20/2
Himmel Brothers Co.....20/4
Kowneer Co. 20/5
Universol Corp. 16o/36

window—interchangeable screen and storm sash
see windows—combinotion—screen ond storm sosh

window—metal or wood
see cosings; window trim

window—x-ray protective
Bor-Roy Products, Inc.....21d/1
Generol Leod Construction Corp.....21d/3
Roy Proof Corp.....21d/2

framing

see shopes—metol—structurol; beoms; joists, trusses; etc.

freezer units

Frigidoire Div. 23a/4o
Generol Electric Co.....23a/5; 28o/6
Hotpoint Inc. 23a/9
Jewett Refrigeratar Co., Inc.....22b/5
Worthington Pump & Mochinery Corp..28o/10
York Corp. 28o/11

front work

construction
see store front construction

elevator
see enclosures—elevotor

glass
see gloss—structurol

metal
see sheet, strip, plote; metol—ornomentol; store front construction

porcelain enameled
see sheet, strip, plote—vitreous or porcelain enomeled; store front construction

precast stone
see slobs—concrete—orchitecturol

refrigerator
see refrigerotors—front work for

slate
see slote—structurol

tile
see tile—cloy

fuel

handling systems
see liquids—storoge, hondling ond dispensing

fungus preventive treatment

see preservotives—wood

fur fixtures

cold storage
Morket Forge Co.....22b/6

furnaces

(see olso oir conditioning)

cast iron
Americon Foundry & Furnoce Co.....28e/1
Bryant Heoter Co.....28d/1
Mueller, L. J., Furnoce Co.....28e/7o
Surfoce Combustion Corp.....28d/19

coal fired
Americon Foundry & Furnoce Co.....28e/1
Chrysler Corp. 28o/4
Jockson & Church Co.....28e/6
Mueller, L. J., Furnoce Co.....28e/7a
Rheem Mfg. Co.....28e/8
Stokol Stoker Co., Inc.....28f/3
U. S. Mochine Corp.....28f/4
Wotermon-Woterbury Co.....28e/10
Wesix Electric Heoter Co.....28e/11

furnaces cont.

controls for
see controls; dompers or registers

floor or wall
Bryont Heoter Co.....28d/1
Rheem Mfg. Co.....28e/8
U. S. Mochine Corp.....28f/4

forced circulation
Americon Foundry & Furnoce Co.....28e/1
Chrysler Corp. 28o/4
Generol Electric Co.....28o/6
Jockson & Church Co.....28e/6
Koustine Co., Inc.....28e/7
Mueller, L. J., Furnoce Co.....28e/7a
Rheem Mfg. Co.....28e/8
Stokol Stoker Co., Inc.....28f/3
Surfoce Combustion Corp.....28d/19
U. S. Mochine Corp.....28f/4
Wotermon-Woterbury Co.....28e/10

gas fired
Americon Foundry & Furnoce Co.....28e/1
Bryont Heoter Co.....28d/1
Chrysler Corp. 28o/4
Generol Electric Co.....28o/6
Jockson & Church Co.....28e/6
Koustine Co., Inc.....28e/7
Mueller, L. J., Furnoce Co.....28e/7o
Rheem Mfg. Co.....28e/8
Surfoce Combustion Corp.....28d/19
U. S. Mochine Corp.....28f/4
Wotermon-Woterbury Co.....28e/10

gravity circulation
Americon Foundry & Furnoce Co.....28e/1
Bryont Heoter Co.....28d/1
Chrysler Corp. 28o/4
Jockson & Church Co.....28e/6
Mueller, L. J., Furnoce Co.....28e/7o
Rheem Mfg. Co.....28e/8
Stokol Stoker Co., Inc.....28f/3
Surfoce Combustion Corp.....28d/19
U. S. Mochine Corp.....28f/4
Wotermon-Woterbury Co.....28e/10

oil fired
Americon Foundry & Furnoce Co.....28e/1
Chrysler Corp. 28o/4
Generol Electric Co.....28o/6
Jockson & Church Co.....28e/6
Koustine Co., Inc.....28e/7
Mueller, L. J., Furnoce Co.....28e/7o
Rheem Mfg. Co.....28e/8
Stokol Stoker Co., Inc.....28f/3
U. S. Mochine Corp.....28f/4
Wotermon-Woterbury Co.....28e/10

steel
Bryont Heoter Co.....28d/1
Chrysler Corp. 28o/4
Internotionol Chimney Corp.....28g/4
Jockson & Church Co.....28e/6
Koustine Co., Inc.....28e/7
Mueller, L. J., Furnoce Co.....28e/7o
Rheem Mfg. Co.....28e/8
Stokol Stoker Co., Inc.....28f/3
Surfoce Combustion Corp.....28d/19
U. S. Mochine Corp.....28f/4
Wotermon-Woterbury Co.....28e/10

furniture

cafeteria
see *cafeteria equipment*

labaratory, hospital, library, etc.
see *hospital equipment; laboratory equipment; library equipment*

metal
All-Steel Equipment Inc.....22c/1
American Seating Co.....22d/7
Art Metal Construction Co.....22a/10
General Fireproofing Co.....22g/1
Lyon Metal Products, Inc.....22c/4
Pauly Jail Building Co.....22h/2
Penn Metal Corp. of Penno.....22c/6
Roanoke Iron & Bridge Works, Inc.....22h/3
Southern Prison Co.....22h/4
Stewart Iron Works Co., Inc.....22h/5
Watson Mfg. Co., Inc.....22g/3

vocational
Lyon Metal Products, Inc.....22c/4
Penn Metal Corp. of Penna.....22c/6
St. Charles Mfg. Co.....23a/17

wood
American Seating Co.....22d/7
Nuraco Woodwork Mfg. Div.....5c/3
Remington Rand Inc.....22d/8

furring and studding

channel, u-stud, bracket, hollow partition, etc.
Alabama Metal Lath Co.....12a/1
Goldsmith Metal Lath Co.....3b/4
Great Lakes Steel Corp.....3d/4
Inland Steel Products Co.....12o/3
K-M Building Products Co.....12a/4
Mid-West Acoustical & Supply Co.....11b/3
National Gypsum Co.....12b/2
Penn Metal Co., Inc.....12o/5
Pittsburgh Steel Products Co.....12o/6
Pomeroy, S. H., Co.....11b/2
POrete Mfg. Co.....3c/19
Sanymetal Products Co., Inc.....11b/1
Simplan Products Div.....12o/7
Truscon Steel Co.....3d/9
United States Gypsum Co.....12b/3
Wheeling Corrugating Co.....12o/8

gypsum
see *tile—hollow gypsum*

metal nailable systems
Great Lakes Steel Corp.....3d/4
Mid-West Acoustical & Supply Co.....11b/3
Pomeroy, S. H., Co.....11b/2
Sanymetal Products Co., Inc.....11b/1

tile
see *tile*

x-ray protective
Bar-Ray Products, Inc.....21d/1
Ray Proof Corp.....21d/2

fuses

Adam, Frank, Electric Co.....29a/1
General Electric Co.....29b/1

g

gages

pressure, temperature, altitude or vacuum
Friez Instrument Div.....22a/2
Hoffman Specialty Co.....28c/3
Paddock Pool Equipment Co.....22f/5

garage

door hangers
see *hangers—door, partition or gate*

door hardware
see *hardware—garage door*

door hinges
see *hinges—garage door*

door operators
see *operators—door*

drainage systems
see *drains—garage*

garbage

burners
see *incinerators*

disposers—electric
American Central Div.....23a/1
General Electric Co.....23a/5
Given Mfg. Co.....23a/7
Hotpoint Inc.....23a/9
In-Sink-Erator Mfg. Co.....23a/9a
Mullins Mfg. Corp.....23a/14
Westinghouse Electric Corp.....23a/20

receivers
see *receivers—garbage*

gas

tanked or bottled
Pyrofax Gas Div.....28f/7

gaskets

Butcher Boy Cold Storage Door Co.....22b/2
Wood Conversion Co.....10a/20

gasoline

storage
see *liquids—storage, handling and dispensing*

gates

chain link or wire
Acorn Wire & Iron Works.....21f/1
Colorado Fuel & Iron Corp.....21g/1
Cyclone Fence Div.....21g/2
Page Fence Assn.....21g/3
Pittsburgh Steel Co.....21g/4
Stewart Iron Works Co., Inc.....21g/5

elevator
Montgomery Elevator Co.....32a/8
Peelle Co.....32o/12
Rotary Lift Co.....32a/13
St. Louis Fire Door Co.....15f/4

gates *cont.*

folding
Acorn Wire & Iron Works.....21f/1
Western Wire & Iron Works, Inc.....21f/2

metal—plain or ornamental
Cyclone Fence Div.....21g/2
Decatur Iron & Steel Co.....22h/1
Illinois Bronze Works.....6e/8
Martin-Parry Corp.....21o/4
Stewart Iron Works Co., Inc.....21g/5

operators for
see *operators—gate*

rolling or coiling
see *grilles—rolling, coiling or sliding*

sidewalk door
see *doors—sidewalk*

turnstiles
see *turnstiles*

gauges

see gages

generating sets

internal combustion
Onan, D. W., Sons, Inc.....29o/7

generators

(see also motor-generators)

electric
General Electric Co.....25o/4

steam
see *boilers*

steam turbine and engine
Worthington Pump & Machinery Corp.....28o/10

girders

American Institute of Steel Construction, Inc.....3d/1
Bethlehem Steel Co.....3d/2
Robberson Steel Co.....1b/6

concrete
see *joists—reinforced concrete; shapes—concrete—structural*

glass

actinic
see *glass—anti-glare*

anti-glare
American Window Glass Co.....7a/1
Libbey-Owens-Ford Glass Co.....7a/2
Mississippi Glass Co.....7a/3
Pennsylvania Wire Glass Co.....19a/4
Pittsburgh Corning Corp.....7c/2a; 7c/3
Pittsburgh Plate Glass Co.....7a/4
Southwestern Sheet Glass Co.....7a/5

block—joint compounds
see *cement—grouting or pointing*

brick or block
see *blocks—glass*

bullet resisting
see *glass—safety*

products

glass cont.

corrugated
Mississippi Glass Co.....7a/3
Pennsylvania Wire Glass Co.....19a/4

decorative treatments for
Libbey-Owens-Ford Glass Co.....7a/2

diffusing
see *glass—figured*

double glazing method
(see also glass—insulating panel)
Reese Metal Weather Strip Co.....18b/7

figured
American Structural Products Co.....7c/1
American 3 Way-Luxfer Prism Co.....19a/2
Appleman Art Glass Works.....7c/2
Libbey-Owens-Ford Glass Co.....7a/2
Mississippi Glass Co.....7a/3
Pittsburgh Corning Corp.....7c/2a; 7c/3
Pittsburgh Plate Glass Co.....7a/4
Richards, J. Merrill.....7a/4a
Southwestern Sheet Glass Co.....7a/5

flexible cloth-backed
see *wall coverings—glass unit—flexible cloth-backed*

heat absorbing
see *glass—anti-glare*

insulating panel
(see also glass—double glazing method)
Libbey-Owens-Ford Glass Co.....7a/2
Pittsburgh Plate Glass Co.....16b/7

masonry
see *blocks—glass*

mirrors
see *mirrors*

obscuring
see *glass—figured*

plate
Libbey-Owens-Ford Glass Co.....7a/2
Mississippi Glass Co.....7a/3
Pittsburgh Plate Glass Co.....7a/4

plate—tempered
Appleman Art Glass Works.....7c/2
Libbey-Owens-Ford Glass Co.....7a/2
Pittsburgh Plate Glass Co.....7a/4

safety
American Window Glass Co.....7a/1
Libbey-Owens-Ford Glass Co.....7a/2
Pittsburgh Plate Glass Co.....7a/4

sheet
American Window Glass Co.....7a/1
Libbey-Owens-Ford Glass Co.....7a/2
Pittsburgh Plate Glass Co.....7a/4
Southwestern Sheet Glass Co.....7a/5

shower doors
see *doors—shower stall—glass*

structural
Ketcham, G. M., Mfg. Corp.....24c/11
Libbey-Owens-Ford Glass Co...7a/2; 13b/11
Pittsburgh Plate
Glass Co.....7a/4; 13b/12; 15b/2

thermal shock resisting
see *glass—plate—tempered*

vaults—sidewalk and skylight
see *lights—sidewalk, roof, etc.*

glass cont.

wire
Libbey-Owens-Ford Glass Co.....7a/2
Mississippi Glass Co.....7a/3
Pennsylvania Wire Glass Co.....19a/4
Southwestern Sheet Glass Co.....7a/5

x-ray protective
Bar-Ray Products, Inc.....21d/1
General Lead Construction Corp.....21d/3
Pittsburgh Plate Glass Co.....7a/4
Ray Proof Corp.....21d/2

glassware

illuminating
General Lighting Co.....30a/9
Libbey-Owens-Ford Glass Co.....7a/2

glazing compounds

Concord Paint Co., Inc.....7b/1
Horn, A. C., Co., Inc.....9a/10
Kedman Mfg. & Waterproofing Co...9a/10a
Kuhls, H. B. Fred.....9a/11
Master Builders Co.....9a/13
Pecora Paint Co., Inc.....7b/2
Sannebarn, L., Sons, Inc.....9a/17
Tremco Mfg. Co.....7b/3
Truscon Laboratories.....9a/20

gold and imitation gold

leaf
Hastings & Co., Inc.....14/6a

gongs

see *bells and buzzers—electric*

governors

steam turbine
Worthington Pump
& Machinery Corp.....28a/10

grandstands

indoor
American Seating Co.....22d/7
Horn Brothers Co.....21c/1a; 22f/1a
Leavitt Corp.....22f/2
Medart, Fred, Mfg. Co.....22f/1
Shlagra Steel Products Corp.....15g/9
Universal Bleacher Co.....22f/3
Vascoancellas, Joseph, Inc.....22e/1
Wayne Iron Works.....22f/4

outdoor
American Seating Co.....22d/7
Cemenstone Corp. 3b/2
Leavitt Corp.....22f/2
Shlagra Steel Products Corp.....15g/9
Timber Structures, Inc.....3b/9
Wayne Iron Works.....22f/4

granite

ashlar
Cold Spring Granite Co.....4a/1
Eastern Quarries, Inc.....4a/2
Fletcher, H. E., Co.....4a/3
National Building Granite Quarries
Assn., Inc.....4a/5
North Carolina Granite Corp.....4a/6

granite cont.

curbing
Fletcher, H. E., Co.....4a/3
North Carolina Granite Corp.....4a/6

fabricators
Cold Spring Granite Co.....4a/1
Eastern Quarries, Inc.....4a/2
Fletcher, H. E., Co.....4a/3
National Building Granite Quarries
Assn., Inc.....4a/5
North Carolina Granite Corp.....4a/6

manufactured
Granux Corp.....4b/1

masonry
Cold Spring Granite Co.....4a/1
Eastern Quarries, Inc.....4a/2
Fletcher, H. E., Co.....4a/3
National Building Granite Quarries
Assn., Inc.....4a/5
North Carolina Granite Corp.....4a/6

memorials
Fletcher, H. E., Co.....4a/3
North Carolina Granite Corp.....4a/6

modular units
Fletcher, H. E., Co.....4a/3

paving blocks
see *blocks—granite*

standard sections
Cold Spring Granite Co.....4a/1
Fletcher, H. E., Co.....4a/3
Granux Corp.....4b/1
National Building Granite Quarries
Assn., Inc.....4a/5
North Carolina Granite Corp.....4a/6

grates

fireplace
see *fireplace—accessories*

shaking and dumping
Danley Brothers Co.....28g/5
Washburn & Granger, Inc.....25a/5

gratings

drainage—roadway
Contractors Foundry.....6h/1
Fiske, J. W., Iron Works.....6e/6
Flackhart Foundry Co.....6h/2

walkway
American Abrasive Metals Co.....13a/9
Blaw-Knox Div.....13a/1
Borden Metal Products Co.....13a/2
Contractors Foundry.....6h/1
Fiske, J. W., Iron Works.....6e/6
Flackhart Foundry Co.....6h/2
Hendrick Mfg. Co.....13a/3; 28b/21
Irving Subway Grating Co., Inc.....13a/4
Kerrigan Iron Works, Inc.....13a/5
Reliance Steel Products Co.....13a/6
United States Gypsum Co.....13a/7
Wheeling Corrugating Co.....13a/8

gravel stops

Aluminum Co. of America.....6a/1
Hahmann & Barnard, Inc.....3f/3

grids

flooring—electrical grounding
Chose Bross & Copper Co., Inc.....13c/1
Monhotton Terrozzo
8ross Strip Co., Inc.....13c/2

flooring—for armoring
Borden Metol Products Co.....13o/2
Hendrick Mfg. Co.....13o/3
Irving Subwoy Groting Co., Inc.....13a/4
Woshburn & Gronger, Inc.....25o/5

grilles

(see olso guords)

bonk
Acorn Wire & Iron Works.....21f/1
Art Metol Construction Co.....22a/10
Generol 8ronze Corp.....6e/7
Wotson Mfg. Co., Inc.....22o/11

cast
see costings; metol—ornomentol

controlled
see dompers or registers; louvers

door, floor or window
Acorn Wire & Iron Works.....21f/1
Boch, Oscor B., Industries, Inc.....6e/1
Decotur Iron & Steel Co.....22h/1
Flour City Ornomentol Iron Co.....6e/6o
Fries & Son Steel Construction
& Engineering Co.....22h/1o
Generol 8ronze Corp.....6e/7
Hendrick Mfg. Co.....28b/21
Illinois 8ronze Works.....6e/8
Kinnear Mfg. Co.....15e/3
Mohon, R. C., Co.....15e/5
Notionol Assn. of Ornomentol
Metol Mfrs.....6e/9o
Poge Fence Assn.....21g/3
Pouly Joil 8uilding Co.....22h/2
Roanoke Iron & 8ridge Works, Inc....22h/3
Southern Prison Co.....22h/4
Stewort Iron Works Co., Inc.....22h/5
Von Dorn Iron Works Co.....22h/6
Wilson, J. G., Corp.....15e/8

heating, ventilating or
oir conditioning
Americon Worming & Ventiloting Co..28b/16
Anemostot Corp. of Americo.....28b/17
8arber-Colmon Co.....28b/18
Brosco Mfg. Co.....20/3
Contractors Foundry.....6h/1
Donley 8rothers Co.....28g/5
Horrington & King Perforoting Co....28b/20
Heotilotor, Inc.....28g/6
Hendrick Mfg. Co.....28b/21
Hunter Fon & Ventiloting Co., Inc....28b/8
Pyle-Notionol Co.....28b/21o
Superior Fireploce Co.....28g/9
Trode-Wind Motorfons, Inc.....28b/14
Tuttle & 8oiley, Inc.....28b/22
United Stotes Register Co.....28b/23
Young Regulotor Co.....28c/10

rodiator
see rodiotors—covers ond cobinets for

rolling, coiling, folding or sliding
Acorn Wire & Iron Works.....21f/1
Cornell Iron Works, Inc.....15e/2
Kinneor Mfg. Co.....15e/3

grilles cont.

rolling, coiling, folding or sliding cont.
Lowrence Steel Co.....15e/4
Mohon, R. C., Co.....15e/5
Moeschl-Edwords Corrugating Co., Inc. 15e/6
Notionol Assn.
of Ornomentol Metol Mfrs.....6e/9o
North American Iron & Steel Co., Inc..15e/7
Wilson, J. G., Corp.....15e/8

grounding equipment

St. Louis Lightning Protection Co.....22i/5
Security Mfg. & Cantracting Co.....22i/6

grounds

see screeds

grouting

see cement—grouting ond pointing

grouting contractors

pressure
Mony, B. J., Co., Inc.....1b/5

guards

column
Contractors Foundry.....6h/1
Flockhart Foundry Co.....6h/2

door
see grilles

doorway—concrete armored
Flockhart Foundry Co.....6h/2

doorway—metol
Contractors Foundry.....6h/1
Donley Brothers Co.....28g/5

expanded or perforated
metol sheets for
see sheet, strip, plate—exponded

joil
see joil equipment

rolling or coiling
see grilles

skylight
Cyclone Fence Div.....21g/2
Western Wire & Iron Warks, Inc.....21f/2

snow
Levow, Dovid.....8d/2

wheel
Contractors Faundry.....6h/1
Donley Brothers Co.....28g/5
Fiske, J. W., Iron Works.....6e/6
Flockhart Foundry Co.....6h/2

window
Acorn Wire & Iron Works.....21f/1
Austrol Soles Corp.....18a/1
Chamberlin Co. of Americo.....18a/4
Cyclone Fence Div.....21g/2
Flour City Ornomental Iron Ca.....6e/6o
Kinneor Mfg. Co.....15e/3
Page Fence Assn.....21g/3
Von Dorn Iron Works Co.....22h/6
Western Wire & Iron Warks, Inc.....21f/2
Wilson, J. G., Corp.....15e/8

guards cont.

window screen
Austrol Soles Corp.....18a/1

gunite contractors

Guoronteed Waterproofing Co.....1b/4
Mony, B. J., Co., Inc.....1b/5
Western Woterproofing Cos.....9o/21

guns

coulking
Kuhls, H. 8. Fred.....9o/11
Pecora Paint Co., Inc.....7b/2

gutters

droins for
see droins—roof, gutter or promenade

roof
Aluminum Co. of Americo.....6o/1
Chose Bross & Copper Co., Inc.....8c/4
Follonsbee Steel Corp.....8c/5
Nichols Wire & Aluminum Co.....8c/7a
Republic Steel Corp.....6c/5
Revere Capper & 8rass Inc.....8c/9
Shoron Steel Corp.....8d/5
United States Steel.....6c/6

gymnasium apparatus

(see olso grondstonds; wordrobes; etc.)
Medort, Fred, Mfg. Co.....22f/1

gypsum

see roof construction; loth; wollboord

h

halyard tops

see flogpoles—occessories for—trucks, fixtures, etc.

hampers

see bothroom occessories—hompers; loundry equipment—hompers

hangars

airplane
Greot Lokes Steel Corp.....3d/4
Roberts & Schoefer Co.....3b/5

contractors for
see oirport contractors ond engineers

hangers

bar—concrete reinforcement
see clips

beom, joist, woll, etc.
Clevelond Steel Specialty Co., Inc.....3f/1
Donley 8rothers Co.....28g/5
Duplex Honger Co.....3f/2
Hohmann & Barnard, Inc.....3f/3

products

hangers cont.

door, partition or gate
Allith-Prouty, Inc.....17a/B
Knape & Vagt Mfg. Co.....17b/13
Metal Products Corp.....17a/9
Nationol Mfg. Co.....15g/5a
Richards-Wilcox Mfg. Co.....17a/10
Westinghouse Electric Corp.....32a/19

form—concrete
see forms—concrete—hangers far

garment
Knape & Vogt Mfg. Co.....17b/13
Vogel-Peterson Co.....22c/9

lighting fixture
see *lighting fixtures*

pipe
Grinnell Co., Inc.....26a/3
Market Forge Co.....22b/6

pipe—spring
Grinnell Co., Inc.....26a/3

suspended ceiling
see *clips*

hardboard

Celotex Corp.....10a/4a
Fir-Tex Insuloting Board Ca.....10o/6
Flintkote Co.....10a/7
Insulite Div.....10a/10

hardeners and densifiers

Adensite Co., Inc.....9a/1
Anti-Hydro Waterpraofing Co.....9a/2
Aquabar Co.....9a/3
Ceresit Waterproofing Corp.....9a/6
Haynes Products Co.....9a/9
Horn, A. C., Co., Inc.....9a/10
Kedmont Mfg. & Waterproofing Co...9a/10a
Master Builders Co.....9a/13
Minwax Co., Inc.....9o/14
Sherwin-Williams Co.....14/19a
5ika Chemicol Corp.....9a/16
5onneborn, L., Sons, Inc.....9a/17
5tonhard Co.....13c/12
Toch Brothers Inc.....9a/19
Tremco Mfg. Co.....7b/3
Truscon Laboratories.....9a/20
Wilbur & Willioms Ca.....14/24

hardware

oirplone hongar door
Allith-Prouty, Inc.....17a/B
Richards-Wilcox Mfg. Co.....17a/10

owning
see *awnings—operating mechanisms for*

butts
see *hinges—butt*

cobinet
Casement Hardware Co.....17b/15
Knape & Vogt Mfg. Co.....17b/13
McKinney Mfg. Co.....17b/B

hardware cont.

cosement window
A.B.C. 5teel Equipment Ca., Inc.....16a/1
Bayley, Williom, Co.....16a/5
Casement Hardware Co.....17b/15
Ceco 5teel Products Corp.....16a/7
Crittall-Federal, Inc.....16o/9
Croft Steel Products, Inc.....16a/10
Detroit 5teel Products Co.....16a/13
Flynn, Michael, Mfg. Ca.....16a/16
Getty, H. S., & Co., Inc.....17b/16
Goodcraft Metal Products Co.....16a/19
Hope's Windaws Inc.....16a/20
McKinney Mfg. Co.....17b/8
Mesker Bros.....16a/22
Reynolds Metals Co.....16/25a
Rolscreen Co.....16b/6
Steelcroft Mfg. Ca.....16a/28
5unlight Metal Products Co.....16a/31
Thorn, J. 5., Co.....16a/32
Truscon Steel Co.....16a/34
Universal Window Co.....17b/17
Whitney, Vincent, Co.....17b/18

cold storage or refrigerotor door
Butcher Boy Cold 5torage Door Co.....22b/2

door—holders
see *holders—door or windaw*

door control
Bommer 5pring Hinge Co. Inc.....17b/6
Decatur Iron & 5teel Ca.....22h/1
Detroit Steel Products Co.....15a/7
Dusing & Hunt, Inc.....15a/9
Ellison Bronze Co., Inc.....15a/10
Fries & 5on Steel Construction & Engineering Co.....22h/1o
Kinnear Mfg. Co.....15e/3
LCN Closers, Inc.....17b/10
Lockwood Hardware Mfg. Co.....17b/3
McKinney Mfg. Co.....17b/B
Pauly Joil Building Co.....22h/2
Pittsburgh Plate Glass Co.....15b/2
Richmond Fireproof Door Ca.....15a/17
Roanoke Iron & Bridge Works, Inc.....22h/3
Southern Prison Co.....22h/4
Stanley Works.....17b/11
Stewart Iron Works Ca., Inc.....22h/5
Van Dorn Iron Works Co.....22h/6
Yale & Towne Mfg. Co.....17b/12

finish—door
Adams-Rite Mfg. Co.....17b/1a
Bayley, William, Co.....16a/5
Blum, Julius, & Co., Inc.....6e/5
Ceco Steel Products Corp.....16a/7
Detroit 5teel Products Co.....15a/7
Dusing & Hunt, Inc.....15a/9
Ellison Bronze Co., Inc.....15a/10
Illinois Bronze Works.....6e/8
Kawneer Co.....15a/12
Lockwood Hardware Mfg. Co.....17b/3
McKinney Mfg. Co.....17b/8
National Mfg. Co.....15g/5o
Reliance Art Metal Co.....15a/16
Richmond Fireproof Door Co.....15o/17
5chlage Lock Co.....17b/4
Truscon 5teel Co.....16a/34
Von Duprin Div.....17b/5

hardware cont.

fire door or shutter
(see olso exit hardwore—fire or ponic)
Clayton & Lambert Mfg. Co.....17b/2
Richards-Wilcox Mfg. Co.....17a/10
Richmond Fireproof Door Co.....15a/17
Von Duprin Div.....17b/5

folding door or folding partition
Allith-Prouty, Inc.....17a/8
Richards-Wilcox Mfg. Co.....17a/10

forged
McKinney Mfg. Co.....17b/8

goroge door
Allith-Prouty, Inc.....17a/B
Barber-Colman Co.....15g/2
Crawford Door Co.....15g/3
Fir Door Institute.....15c/3
National Mfg. Co.....15g/5a
Richards-Wilcox Mfg. Co.....17o/10
Richmond Fireproof Door Co.....15a/17

hangers
see *hangers*

hinges
see *hinges*

Institutionol
Bommer Spring Hinge Co. Inc.....17b/6
Decatur Iron & 5teel Co.....22h/1
Fries & 5on 5teel Construction & Engineering Co.....22h/1o
Pauly Jail Building Co.....22h/2
Roanoke Iron & Bridge Works, Inc.....22h/3
Southern Prison Co.....22h/4
5tewart Iron Works Co., Inc.....22h/5
Van Dorn Iron Works Co.....22h/6

jolousie
Casement Hardware Co.....18c/2

lovotory and toilet partition
American 5onitory Partition Co.....21b/2
Bommer 5pring Hinge Co. Inc.....17b/6
Chicago 5pring Hinge Co.....17b/7
Mills Co.....21b/4
Milwaukee 5tamping Ca.....17b/9; 21b/5
Sanymetal Products Co., Inc.....21b/6
Weis, Henry, Mfg. Co., Inc.....21b/7

locks
Adoms-Rite Mfg. Co.....17b/1a
American 5anitary Partition Co.....21b/2
Bayley, William, Co.....16o/5
Blum, Julius, & Co., Inc.....6e/5
Ceco Steel Products Corp.....16a/7
Detroit 5teel Products Co.....15o/7
Fir Door Institute.....15c/3
Flynn, Michael, Mfg. Co.....16a/16
Lockwood Hardware Mfg. Ca.....17b/3
Richmond Fireproof Door Ca.....15a/17
5chlage Lock Co.....17b/4
Truscon 5teel Ca.....16a/34
Von Duprin Div.....17b/5
Yale & Towne Mfg. Co.....17b/12

overheod type door
Allith-Prouty, Inc.....17o/8

revolving door
see *doors—revolving*

sosh choin
see *chain—sash*

hardware cont.

sash operators
see operators—sash

sash pulleys
see pulleys—sash

sash weights
Hohmann & Barnard, Inc.....3f/3

screen
A.B.C. Steel Equipment Co., Inc.....16a/1
Bayley, William, Co.....16a/5
Ceco Steel Products Corp.....16a/7; 18a/3
Crittall-Federal, Inc.....16a/9
Craft Steel Products, Inc.....16a/10
Detrait Steel Praducts Co.....16a/13
Flynn, Michael, Mfg. Co.....16a/16
Hope's Windaws Inc.....16a/20
Mesker Bros.....16a/22
Quaker City Metal Weatherstrip Co....18b/6
Truscon Steel Co.....16a/34

shelving
Knape & Vogt Mfg. Co.....17b/13

show case or counter
Knape & Vogt Mfg. Co.....17b/13

sliding door
(see also hangers—door, partition or gate)
Accurate Metal Weather Strip Ca., Inc.....18b/1
Adams-Rite Mfg. Co.....17b/1a
Ceca Steel Products Corp.....16a/7
Detroit Steel Praducts Ca.....15a/7
Metal Praducts Corp.....17a/9
Richards-Wilcox Mfg. Co.....17a/10
Richmond Firepraaf Daar Co.....15a/17

transom
Whitney, Vincent, Co.....17b/18

window
Adams & Westlake Co.....16a/2
Austral Sales Corp.....17b/14
Bayley, William, Ca.....16a/4; 16a/5
Ceca Steel Praducts Corp.....16a/7
Crittall-Federal, Inc.....16a/9
Craft Steel Products, Inc.....16a/10
Dalmo Continental Inc.....16b/2
Detroit Steel Products Co.....16a/13
Flynn, Michael, Mfg. Co.....16a/16
Hope's Windaws Inc.....16a/20
Lockwood Hardware Mfg. Co.....17b/3
Mesker Bras.....16a/22
Tharn, J. S., Co.....16a/32
Truscon Steel Co.....16a/34
Universal Window Ca.....17b/17
Whitney, Vincent, Co.....17b/18

window—awning type
Dalmo Continental Inc.....16b/2

hatchways

doors
see doars—bulkhead

floor
Babcock-Davis Carp.....15h/1

roof
Babcock-Davis Corp.....15h/1
Bilca Ca.....15h/2

heat exchangers

Patterson-Kelley Co., Inc.....27a/5
Trane Ca.....28a/8
Westinghouse Electric Carp.....28a/9
Yark Carp.....28a/11

heaters

auxiliary or bathroom
Adam, Frank, Electric Co.....29a/1
General Electric Co.....23a/5
Jackson, Wm. H., Co.....28g/7
Miami Cabinet Div.....24c/13
Rheem Mfg. Ca.....28e/8
Shepler Mfg. Co.....28b/13
Wesix Electric Heater Ca.....28e/11

coils for
see coils

convector
see convectors

deaerating
Permutit Co.....27a/17
Worthingtan Pump & Machinery Corp.....28a/10

feed water
Patterson-Kelley Co., Inc.....27a/5
Worthington Pump & Machinery Carp.....28a/10

fireplace unit
Donley Brathers Co.....28g/5
Heatilatar, Inc.....28g/6
Majestic Ca.....28g/8
Shepler Mfg. Co.....28b/13
Superiar Fireplace Co.....28g/9

industrial—process equipment
Pattersan-Kelley Co., Inc.....27a/5

space
Bryant Heater Co.....28d/1
Carrier Corp.....28a/3
Day & Night Mfg. Co.....28e/3
Drava Corp.....28e/4
Dunham, C. A., Co.....28c/2
General Electric Co.....23a/5
Mueller, L. J., Furnace Co.....28e/7a
Reznar Mfg. Ca.....28d/18
Rheem Mfg. Ca.....28e/8
Shepler Mfg. Co.....28b/13
Surface Combustion Corp.....28d/19
Trane Ca.....28a/8
Wesix Electric Heater Co.....28e/11
Westinghouse Electric Carp.....28d/20
Young Radiator Ca.....28a/12

unit—coal or oil fired
American Foundry & Furnace Ca.....28e/1
Dravo Corp.....28e/4
Mueller, L. J., Furnace Co.....28e/7a
Rheem Mfg. Co.....28e/8

unit—electric
Grinnell Co., Inc.....28d/17
Ilg Electric Ventilating Co.....28b/9
Shepler Mfg. Co.....28b/13
Wesix Electric Heater Ca.....28e/11

unit—gas fired
American Foundry & Furnace Co.....28e/1
Bryant Heater Co.....28d/1
Carrier Carp.....28a/3

heaters cont.

units—gas fired cont.
Day & Night Mfg. Co.....28e/3
Drava Carp.....28e/4
Mueller, L. J., Furnace Co.....28e/7a
Reznar Mfg. Co.....28d/18
Rheem Mfg. Ca.....28e/8
Surface Cambustion Corp.....28d/19
Wing, L. J., Mfg. Ca.....28d/21

unit—steam or hot water
American Blower Corp.....28a/2
Carrier Carp.....28a/3
Clarage Fan Ca.....28a/5
Dunham, C. A., Ca.....28c/2
Grinnell Co., Inc.....28d/17
Ilg Electric Ventilating Co.....28b/9
Madine Mfg. Co.....28d/13
National Radiator Co.....28d/6
Trane Co.....28a/8
Webster, Warren, & Co.....28c/9
Westinghouse Electric Corp...28a/9; 28d/20
Wing, L. J., Mfg. Co.....28d/21
Warthingtan Pump & Machinery Corp..28a/10
Young Radiatar Ca.....28a/12

water—coal fired
Chrysler Corp.....28a/4
Fitzgibbans Boiler Ca., Inc.....28d/3
Kewanee Boiler Carp.....28d/5
National Radiatar Co.....28d/6
Pacific Steel Boiler Div.....28d/7
Smith, H. B., Ca., Inc.....28d/9
Spencer Heater Div.....28d/10
Stokal Stoker Co., Inc.....28f/3
United States Radiator Corp.....28d/12

water—continuous flow
see heaters—water—instantaneous

water—electric
Frigidaire Div.....23a/4a
General Electric Co.....23a/5
Hotpoint Inc.....23a/9
McGraw Electric Co.....27a/4
Rheem Mfg. Co.....27a/8
Smith, A. O., Carp.....27a/10
Wesix Electric Heater Co.....28e/11
Westinghouse Electric Corp.....23a/20
Wood, Jahn, Mfg. Ca., Inc.....27a/11

water—gas fired
Bryant Heater Ca.....28d/1
Day & Night Mfg. Co.....27a/2
Fitzgibbons Boiler Co., Inc.....28d/3
Kewanee Boiler Carp.....28d/5
National Radiatar Co.....28d/6
Pacific Steel Boiler Div.....28d/7
Rheem Mfg. Co.....27a/8
Ruud Mfg. Co.....27a/9
Smith, A. O., Carp.....27a/10
Smith, H. B., Co., Inc.....28d/9
Spencer Heater Div.....28d/10
Surface Combustion Corp.....28d/19
Waad, John, Mfg. Co., Inc.....27a/11

water—instantaneous
Bell & Gossett Co.....28c/1
Pattersan-Kelley Co., Inc.....27a/5
Ruud Mfg. Ca.....27a/9

water—oil fired
Chrysler Corp.....28a/4
Day & Night Mfg. Co.....27a/2

heaters cont.

water—oil fired cont.
Fitzgibbons Boiler Co., Inc.....2Bd/3
Kewonee Boiler Corp.....2Bd/5
Notionol Rodiotor Co.....2Bd/6
Pocific Steel Boiler Div.....28d/7
Rheem Mfg. Co.....27o/8
Smith, H. 8., Co., Inc.....28d/9
Spencer Heoter Div.....28d/10
Stokol Stoker Co., Inc.....2Bf/3
United Stotes Rodiator Corp.....2Bd/12

woter—sheet metol for
see sheet, strip, plote—copper or copper alloy

water—storoge
Bell & Gossett Co.....28c/1
Bryont Heoter Co.....28d/1
Day & Night Mfg. Co.....27a/2
Kewanee Boiler Corp.....28d/5
McGrow Electric Co.....27o/4
National Rodiotor Co.....2Bd/6
Potterson-Kelley Co., Inc.....27o/5
Rheem Mfg. Co.....27o/8
Ruud Mfg. Co.....27a/9
Smith, A. O., Corp.....27a/10
Stokol Stoker Co., Inc.....28f/3
Surfoce Combustion Corp.....28d/19
Thrush, H. A., & Co.....28c/7
Triplex Heating Speciolty Co., Inc.....28c/8
Wesix Electric Heater Co.....28e/11

heating

speciolties
see heoting systems—speciolties; controls

heating systems

air
see oir conditioning; furnoces

boseboord
Bell & Gossett Co.....2Bc/1
Dunham, C. A., Co.....28c/2
Smith, H. B., Co., Inc.....2Bd/9
Webster, Worren, & Co.....28d/16
Wesix Electric Heater Co.....28e/11

electric
see heoters—unit—electric

hot woter
Bell & Gossett Co.....28c/1
Bryont Heoter Co.....2Bd/1
Hoffmon Speciolty Co.....2Bc/3
Smith, H. B., Co., Inc.....2Bd/9
Spencer Heoter Div.....28d/10
Surface Combustion Corp.....2Bd/19
Thrush, H. A., & Co.....28c/7
Webster, Worren, & Co.....28c/9

hot water—circulators for
Bell & Gossett Co.....2Bc/1
Hoffmon Speciolty Co.....2Bc/3
Thrush, H. A., & Co.....2Bc/7
Trone Co.....2Bo/8
Triplex Heoting Speciolty Co., Inc.....2Bc/8
Yeomons 8ros. Co.....27d/3

panel
see specific type of system

heating systems cont.

speciolties
Bell & Gossett Co.....28c/1
Dunham, C. A., Co.....28c/2
Hoffmon Specialty Co.....2Bc/3
Thrush, H. A., & Co.....2Bc/7
Trone Co.....2Bo/B
Triplex Heoting Speciolty Co., Inc.....28c/8
Webster, Worren, & Co.....28c/9; 28d/16

vacuum—vapor and moduiation
Dunhom, C. A., Co.....2Bc/2
Webster, Worren, & Co.....28c/9; 28d/16

hinges

(see olso hordwore)

butt
Blum, Julius, & Co., Inc.....6e/5
Bommer Spring Hinge Co. Inc.....17b/6
Crittoll-Federol, Inc.....16o/9
McKinney Mfg. Co.....17b/B
Milwoukee Stomping Co.....17b/9
Richords-Wilcox Mfg. Co.....17o/10
Richmond Fireproof Door Co.....15o/17

butt—spring
8ommer Spring Hinge Co. Inc.....17b/6
Chicogo Spring Hinge Co.....17b/7
Milwoukee Stomping Co.....17b/9

cosement window
Casement Hordwore Co.....17b/15

checking
see checks ond closers—door

friction
Cosement Hordwore Co.....17b/15
Crittoll-Federol, Inc.....16o/9

gorage door
Allith-Prouty, Inc.....17a/B
Richords-Wilcox Mfg. Co.....17o/10
Richmond Fireproof Door Co.....15a/17

gate—spring pivot or spring butt
8ommer Spring Hinge Co. Inc.....17b/6
Chicogo Spring Hinge Co.....17b/7
Milwoukee Stomping Co.....17b/9

gravity
Milwoukee Stomping Co.....17b/9
Weis, Henry, Mfg. Co., Inc.....21b/7

heavy duty
Allith-Prouty, Inc.....17o/8
Butcher 8oy Cold Storage Door Co.....22b/2
Milwoukee Stomping Co.....17b/9
Richords-Wilcox Mfg. Co.....17a/10
Richmond Fireproof Door Co.....15o/17

lavotory ond toilet door
Bommer Spring Hinge Co. Inc.....17b/6
Chicogo Spring Hinge Co.....17b/7
McKinney Mfg. Co.....17b/8
Milwoukee Stomping Co.....17b/9
Weis, Henry, Mfg. Co., Inc.....21b/7

pivot—boll bearing
Allith-Prouty, Inc.....17o/B
Bommer Spring Hinge Co. Inc.....17b/6
McKinney Mfg. Co.....17b/8
Milwoukee Stomping Co.....17b/9

spring butt
see hinges—butt—spring

hinges cont.

spring pivot—floor
Bommer Spring Hinge Co. Inc.....17b/6
Chicogo Spring Hinge Co.....17b/7
Milwoukee Stomping Co.....17b/9

hoists

sidewoik—ash or merchandise
Copitol Elevotor & Mfg. Co.....32o/1
Ernst, Chorles K., Inc.....32c/1
Potts Ash Hoist Corp.....32c/2

holders

door or window
Bommer Spring Hinge Co. Inc.....17b/6
Cosement Hordwore Co.....17b/15
Ellison Bronze Co., Inc.....15o/10
Getty, H. S., & Co., Inc.....17b/16
Rossboch & Sons, Inc.....16o/26
Von Duprin Div.....17b/5
Yole & Towne Mfg. Co.....17b/12

home equipment and utilities

home equipment to insuiotion—
see oir conditioning; bothroom accessories; heoters; heating systems; kitchen equipment; loundry equipment; refrigerotors; etc.

honeycomb structural panels

see ponels—honeycomb

hoods

awning
see awnings—bors, hoods, etc. for

fume
Alberene Stone Corp. of Virginio.....26b/1
General Fireproofing Co.....22g/1

hoppers

see doors—hopper; sinks

horns and sirens

Autocoll Co.....31b/1
Internotionol Business Mochines Corp...31c/1
Stromberg Time Corp.....31c/3

hose

cobinets
see cobinets—hose

fire
see fire—hose, hose rocks ond reels

hospital

cubicles
see cubicles

equipment
(see olso grids—flooring—electrical grounding)

8lickmon, S., Inc.....23b/1
Elkoy Mfg. Co.....23o/4

hospital cont.

equipment cont.
General Fireproofing Co.....22g/1
Jamestown Metal Products, Inc.....22g/2
Jewett Refrigerator Co., Inc.....22b/5
Just Mfg. Co.....23a/10
Ohio Chemical & Mfg. Co.....22g/2a
Olson, Samuel, Mfg. Co., Inc.....23b/4a
Van, John, Range Co.....23b/5
Watson Mfg. Co., Inc.....22g/3

x-ray planning service
see x-roy

houses
see buildings

housing contractors
prefabricated
see *buildings—prefabricated*

housing development contractors
Barnes, James I., Construction Co.....1a/1
H. R. H. Construction Corp.....1a/3
O'Connor, Thomas, & Co., Inc.....1a/4
Terminal Construction Corp.....1a/5

humidifiers
American Blower Corp.....2Ba/2
American Foundry & Furnace Co.....2Be/1
Bryant Heoter Co.....2Bd/1
Carrier Corp.....2Ba/3
Clorage Fan Co.....2Ba/5
Mueller, L. J., Furnace Co.....28e/7a
Westinghouse Electric Corp.....2Bo/9

humidostats
see *controls—humidity*

hydrants
fire
Elkhart Brass Mfg. Co.....27c/2
McIntire, F. N., Brass Works.....22h/7
Zurn, J. A., Mfg. Co.....27e/6

fire—boxes for
Flockhart Foundry Co.....6h/2

hygrostats
see *controls—humidity*

hypochlorinators
see *water—softeners and treating equipment*

i

ice
making equipment, containers, etc.
Frigidoire Div. 23a/4a
Jewett Refrigerator Co., Inc.....22b/5
York Corp.....2Ba/11

incinerator contractors
Goder, Joseph, Incinerators.....25a/2
Morse Boulger Destructor Co.....25a/3
Washburn & Granger, Inc.....25a/5

incinerators
American Incinerator Corp.....25a/1
Donley Brothers Co.....2Bg/5
Goder, Joseph, Incinerators.....25a/2
Kellogg-Mann Corp. 25a/2a
Majestic Co.....2Bg/B
Morse Boulger Destructor Co.....25a/3
Sargent Building Specialties Inc.....25a/4
Woshburn & Gronger, Inc.....25a/5

indicators
temperature
Friez Instrument Div.....22a/2

wind velocity
Friez Instrument Div.....22a/2

inserts
concrete—nailable continuous
Mid-West Acoustical & Supply Co.....11b/3
Pomeroy, S. H., Co.....11b/2
Sanymetal Products Co., Inc.....11b/1

concrete—slotted
see *onchors—slot and slots for*

concrete, brick, etc.
Bayley, William, Co.....16a/5
Clevelond Steel Specialty Co., Inc.....3f/1
Donley Brothers Co.....28g/5
Duplex Hanger Co.....3f/2
Goldsmith Metal Lath Co.....3b/4
Grinnell Co., Inc.....26a/3
Hohmann & Barnard, Inc.....3f/3
K-M Building Products Co.....12a/4
Richmond Screw Anchor Co., Inc.....3e/5
Sargent Building Specialties Inc.....25a/4
Simplon Products Div.....12a/7
Truscon Steel Co.....3d/9

flooring
see *flooring—asphalt tile; linoleum; etc.*

hanger
Cleveland Steel Specialty Co., Inc.....3f/1
Duplex Hanger Co.....3f/2
Goldsmith Metal Lath Co.....3b/4
Hohmann & Barnord, Inc.....3f/3

installing contractors
machinery, heavy equipment, etc.
Eichleay Engineering Corp.....1b/2

instruments
see *controls; gages; indicators; etc.*

insulation—building
aluminum or copper covered—board, paper, fiber or fabric
Air-O-Cel Co.....10a/1
Alfol 10a/2
Sisalkraft Co.....9c/2
United States Gypsum Co.....12b/3

insulation—building cont.
blanket or bat form
Alfol 10a/2
Barrett Div.....Ba/2
Carey, Philip, Mfg. Co.....10a/4
Celotex Corp.....10a/4a
Eagle-Picher Co.....10a/5
Flintkote Co.....10a/7
Johns-Manville 10a/12
Kimberly-Clark Corp.....10a/13
Lockport Cotton Batting Co.....10a/14
National Gypsum Co.....12b/2
Owens-Corning Fiberglas Corp.....10c/1
Sprayo-Flake Co.....10a/18
United States Gypsum Co.....10a/19
Wood Conversion Co.....10a/20

blocks—fiber
Fir-Tex Insulating Board Co.....10a/6
Owens-Corning Fiberglas Corp.....10c/1

blocks—glass
Armstrong Cork Co.....10b/1
Pittsburgh Corning Corp.....10b/5

blown-in
Barrett Div.....Ba/2
Carey, Philip, Mfg. Co.....10a/4
Celotex Corp.....10a/4a
Eagle-Picher Co.....10a/5
Johns-Manville 10a/12
National Gypsum Co.....12b/2
Owens-Corning Fiberglas Corp.....10c/1
Pacific Lumber Co.....10a/15

board—asbestos-cement
Carey, Philip, Mfg. Co.....Bb/2; 10a/4
Celotex Corp.....10a/4a
Johns-Manville 1Ba/5; 12b/1a

board—cork
Armstrong Cork Co.....10a/3; 10b/1
Cork Import Corp.....10b/2
Cork Insulation Co., Inc.....10b/3
Johns-Manville Ba/3
Mundet Cork Corp.....10b/4

board—fiber
Air-O-Cel Co.....10a/1
Armstrong Cork Co.....10a/3
Celotex Corp.....10a/4a
Creo-Dipt Co., Inc.....Bb/7
Fir-Tex Insulating Board Co.....10a/6
Flintkote Co.....Ba/4; 10a/7
Homasote Co.....10a/9
Insulite Div.....10a/10
Johns-Manville Ba/5
National Gypsum Co.....12b/2
New England Fibre Co.....10a/14a
Owens-Corning Fiberglas Corp.....10c/1
Simpson Logging Co.....10a/16
United States Gypsum Co.....10a/19
Wood Conversion Co.....10a/20

board—mineral wool
Armstrong Cork Co.....10b/1
Cork Import Corp.....10b/2
Owens-Corning Fiberglas Corp.....10c/1

cement form—dry or plastic
American Acoustics, Inc.....11a/1
POrete Mfg. Co.....3c/19
Zonolite Co.....10a/21

insulation—building cont.

cotton
Lockport Cotton Batting Co.....10a/14

double glazed panels
see glass—insulating panels; glass—double glazing method

duct—air conditioning
see specific type of insulation

felt
see insulation—building—blanket or bat form; paper and felts

machinery vibration
see absorbers

paper
see paper and felts—building

plaster—aggregates for
see plaster—insulating

powdered, granulated or shredded
Armstrong Cork Co.....10b/1
Barrett Div.....8a/2
Carey, Philip, Mfg. Co.....10o/4
Celatex Corp.....10a/4o
Cork Import Corp.....10b/2
Cork Insulation Co., Inc.....10b/3
Eagle-Picher Co.....10a/5
Flintkote Co.....10o/7
Johns-Manville 10a/12
Owens-Corning Fiberglas Corp.....10c/1
Pacific Lumber Co.....10a/15
Sprayo-Flake Co.....10a/18
Zonolite Co.....10a/21

protection for
see paper and felts; flashings—sheet metal

reflective
Air-O-Cel Co.....10a/1
Alfol 10a/2
Sisalkraft Co.....9c/2
Sprayo-Floke Co.....10a/18

setting cement
see cement—for application of insulation

sound
see acoustical

sprayed on
Sprayed Insulation, Inc.....10a/17; 11a/10
Sprayo-Flake Co.....10a/1B

vermiculite
Zonalite Co.....10a/21

wool type
Barrett Div.....8a/2
Carey, Philip, Mfg. Co.....10o/4
Celotex Carp.....10a/4a
Eagle-Picher Co.....10a/5
Flintkote Co.....10a/7
Johns-Manville 10a/12
National Gypsum Co.....12b/2
Owens-Corning Fiberglas Corp.....10c/1
Pacific Lumber Co.....10o/15
Sprayo-Flake Co.....10a/18
United States Gypsum Co.....10a/19
Wood Conversian Co.....10a/20

x-ray protective
see x-ray—protective products

insulation—cold storage or refrigeration

blanket or bat form
Kimberly-Clark Corp.....10a/13
National Gypsum Co.....12b/2

blocks—glass
Armstrong Cork Co.....10b/1
Owens-Corning Fiberglas Corp.....10c/1
Pittsburgh Corning Corp.....10b/5

blown-in
Pacific Lumber Co.....10o/15

board—fiber
Celotex Corp.....10a/4a
Fir-Tex Insulating Board Co.....10a/6
Owens-Corning Fiberglas Corp.....10c/1

board—mineral wool
Armstrong Cork Co.....10b/1
Cork Import Corp.....10b/2

cement form—dry or plastic
Owens-Corning Fiberglas Corp.....10c/1
Zonolite Co.....10o/21

cork
Armstrong Cork Co.....10b/1
Cork Import Corp.....10b/2
Cork Insulation Co., Inc.....10b/3
Mundet Cork Corp.....10b/4

cotton
Lockport Cotton Batting Co.....10a/14

logging
see logging

pipe or tank
Armstrong Cork Co.....10b/1
Carey, Philip, Mfg. Co.....10a/4
Cork Import Corp.....10b/2
Cork Insulation Co., Inc.....10b/3
Johns-Manville 10o/12
Mundet Cork Corp.....10b/4
Owens-Corning Fiberglas Corp.....10c/1

powdered, granulated or shredded
Cork Import Corp.....10b/2
Cork Insulation Co., Inc.....10b/3
Owens-Corning Fiberglas Corp.....10c/1
Pacific Lumber Co.....10a/15
Zonolite Co.....10a/21

protection for
Armstrong Cork Co.....10b/1
Bird & Son, Inc.....9c/1
Cork Import Corp.....10b/2
Cork Insulation Co., Inc.....10b/3
Mundet Cork Corp.....10b/4

reflective
Hogan, C. T., & Co., Inc.....10b/3a

sheet metal
Hogan, C. T., & Co., Inc.....10b/3o

sprayed on
Sprayed Insulation, Inc.....10a/17

vermiculite
Zonolite Co.....10o/21

waterproofing compounds for
see waterproofing—paint and compounds

insulation—high temperature

brick, block or pipe covering—asbestos, felt, fiber, cement, etc.
Armstrong Cork Co.....10b/1
Corey, Philip, Mfg. Co.....10o/4
Johns-Manville 10a/12
Owens-Corning Fiberglas Corp.....10c/1
Ric-wil Co.....10d/1

brick, block or pipe covering—magnesia
Armstrong Cork Co.....10b/1
Corey, Philip, Mfg. Co.....10a/4
Johns-Manville 10o/12

brick, block or pipe covering—wool
Armstrong Cork Co.....10b/1
Johns-Manville 10a/12
National Gypsum Co.....12b/2
Owens-Corning Fiberglas Corp.....10c/1

cement form—dry or plastic
(see also refractory)
Armstrong Cork Co.....10b/1
National Gypsum Co.....12b/2
Owens-Corning Fiberglas Corp.....10c/1

pipe, boiler or tank
Armstrong Cork Co.....10b/1
Carey, Philip, Mfg. Co.....10a/4
Johns-Manville 10a/12
National Gypsum Co.....12b/2
Owens-Corning Fiberglas Corp.....10c/1
Pittsburgh Corning Corp.....10b/5
Ric-wil Co.....10d/1

protection for
Armstrong Cork Co.....10b/1
Owens-Corning Fiberglas Corp.....10c/1

refractory
see refractory

sheet
Armstrong Cork Co.....10b/1
Corey, Philip, Mfg. Co.....10o/4

underground pipe
see pipe—underground or overhead systems—insulated

insulation contractors

building
Guaranteed Waterproofing Co.....1b/4
Johns-Manville 10o/12
Mundet Cork Corp.....10b/4

cold storage
Birkenwald, S., Co.....22b/1
Hogan, C. T., & Co., Inc.....10b/3a
Mundet Cork Corp.....10b/4

high temperature
Guaranteed Waterproofing Co.....1b/4

interceptors

gas, grease or oil
Boosey, Narman, Mfg. Co.....27e/2
Hoffman Specialty Co.....27e/3a
Josam Mfg. Co.....27e/4
Kaustine Co., Inc.....27f/1
Rheem Mfg. Co.....27o/B
Wade Mfg. Co.....27e/5
Zurn, J. A., Mfg. Co.....27e/6

interceptors cont.

plaster, sediment, etc.
Boasey, Narman, Mfg. Co.....27e/2
Jasam Mfg. Ca.....27e/4
Wade Mfg. Co.....27e/5

interlocks

elevatar ar dumbwaiter daor
Montgomery Elevator Co.....32a/8
Peelle Ca.....32a/12
St. Louis Fire Daor Ca.....15f/4
Security Fire Daar Ca.....15f/5
Sedgwick Machine Works.....32a/14

iron

see *castings; metal; sheet, strip, plate;* etc.

ironing

boards
(see also cabinets—ironing board)
Carr, Adams & Collier Ca.....5c/1

machines
Chicago Dryer Co.....24d/1
Frigidaire Div.....23a/4a
General Electric Co.....23a/5
Hotpoint Inc.....23a/9

isolators

see *absorbers—shock or vibration*

J

jail equipment

Decatur Iran & Steel Co.....22h/1
Fries & Son Steel Canstructian & Engineering Ca.....22h/1a
Pauly Jail Building Ca.....22h/2
Raanake Iran & Bridge Works, Inc.....22h/3
Southern Prison Co.....22h/4
Stewart Iron Works Co., Inc.....22h/5
Van Dorn Iron Works Ca.....22h/6

jalousies and jalousie hardware

Casement Hardware Co.....18c/2
Dalmo Continental Inc.....16b/2
Pro-Tect-U Jalousie Corp.....18c/4
Russell, F. C., Co.....18a/7
Thorn, J. S., Co.....16a/32

joints

expansian—flaar and raaf drain
Barrett Div.....8a/2
Hoffman Specialty Co.....27e/3a
Josam Mfg. Co.....27e/4
Revere Capper & Brass Inc.....8c/9
Wade Mfg. Co.....27e/5
Zurn, J. A., Mfg. Co.....27e/6

expansion—glass
American 3 Way-Luxfer Prism Co.....19a/2
Kuhls, H. B. Fred.....9a/11
Pennsylvonio Wire Glass Co.....19a/4

joints cont.

expansian—paving, roadway, etc.
Barrett Div.....8a/2
Celatex Carp.....10a/4a
Kuhls, H. B. Fred.....9a/11

expansian—pipe
Walworth Ca.....26a/B
Webster, Warren, & Co.....2Bc/9

expansian—waterproofing
Ceresit Waterpraafing Carp.....9a/6
Harn, A. C., Ca., Inc.....9a/10
Kedmont Mfg. & Waterpraafing Ca...9a/10a
Kappers Co., Inc.....8a/6
Kuhls, H. B. Fred.....9a/11
Minwax Co., Inc.....9a/14
Sondell Mfg. Co., Inc.....Bd/4
Sika Chemical Carp.....9a/16
Tach Brathers Inc.....9a/19

masanry—metal covering far
Dusing & Hunt, Inc.....9a/6a
Minwax Co., Inc.....9a/14

structural—pressure relieving
Cawing Pressure Relieving Jaint Co....4a/20

wallbaard—treatments far
see *wallbaard—joint finishers*

joists

bridging far
see *bridging*

cancrete—forms far
Bethlehem Steel Ca.....3d/2
Ceca Steel Products Carp.....3b/1
Concrete Reinforcing Steel Institute.....3b/3
Goldsmith Metal Lath Co.....3b/4

hangers for
see *hangers*

reinfarced cancrete
Cemenstone Corp.....3b/2
Cancrete Reinforcing Steel Institute.....3b/3
Lith-I-Bar Co.....3d/7

steel
Bethlehem Steel Ca.....3d/2
Ceca Steel Praducts Corp.....3d/3
Great Lakes Steel Corp.....3d/4
Laclede Steel Co.....3d/5
Macomber Inc.....3d/8
Robberson Steel Co.....1b/6
Shlagro Steel Products Corp.....15g/9
Truscon Steel Co.....3d/9

waad
Unit Structures, Inc.....3b/10

k

kalamein products

see *daars—metal covered; trim—metal*

kalsomine

see *paint—water thinned*

keene's cement

see *plaster—keene's cement*

kettles

Van, Jahn, Range Ca.....23b/5

key

cabinets
see *cabinets—key*

cantral systems
All-Steel Equipment Inc.....22c/1
Moore, P. O., Inc.....17b/1

kick plates

see *plates—door—kick or push*

kitchen equipment

dishwashers
see *dishwashing machines*

drains
see *droins—floor, yard,* etc.

fans and ventilatars
American Blower Carp.....28a/2
American Central Div.....23a/1
American Coolair Carp.....28b/6
Emersan Electric Mfg. Ca.....28b/7
General Electric Ca.....23a/5
Hunter Fan & Ventilating Co., Inc.....28b/8
Ilg Electric Ventilating Ca.....28b/9
Pryne & Co., Inc.....28b/11
Shepler Mfg. Co.....28b/13
Trade-Wind Motorfans, Inc.....2Bb/14
Victor Electric Products, Inc.....2Bb/15
Westinghouse Electric Corp.....23a/20

food cutters, choppers and slicers
Habart Mfg. Co.....23b/2

institutional
Blickman, S., Inc.....23b/1
Elkay Mfg. Co.....23a/4
Habart Mfg. Ca.....23b/2
Parsons Co.....23a/16
Van, Jahn, Range Co.....23b/5

kettles
see *kettles*

mixing machines
Habart Mfg. Co.....23b/2

avens
see *ovens*

ranges
see *ranges*

sinks
see *sinks*

units—metal ar wood
American Central Div.....23a/1
Berger Mfg. Div.....23a/2
Carr, Adams & Callier Ca.....5c/1
Curtis Companies Service Bureau.....5c/2
Dwyer Products Carp.....23a/3
Elkay Mfg. Co.....23a/4
General Electric Ca.....23a/5
Geneva Modern Kitchens, Inc.....23a/6
Harrisan Steel Cabinet Ca.....23a/B
Hotpaint Inc.....23a/9
Kitchen Maid Carp.....23a/11
Midwest Mfg. Co.....23a/12
Miller Metal Products, Inc.....23a/13

kitchen equipment cont.

units—metal or wood cont.
Mullins Mfg. Corp.....23o/14
Murphy Door Bed Co.....22i/2
Mutschler Bros. Co.....23a/15
St. Charles Mfg. Co.....23o/17
Steel Kitchen Cabinet Institute.....23o/18

units—self-contained
(including: oven, stove, refrigerator, sink and cabinets)
Dwyer Products Corp.....23o/3
Murphy Door Bed Co.....22i/2
Parsons Co.....23o/16
St. Charles Mfg. Co.....23o/17

vegetable peelers
Hobart Mfg. Co.....23b/2

knobs
see *hardware—finish—door*

knockers
see *hardware—finish—door; metal—ornamental*

L

laboratory analysis and research
see *testing services*

laboratory equipment
Alberene Stone Corp. of Virginia.....26b/1
Blickman, S., Inc.....23b/1
Duriron Co., Inc.....26b/2
Elkay Mfg. Co.....23a/4
General Fireproofing Co.....22g/1
Just Mfg. Co.....23o/10
Knight, Maurice A.....26b/3
St. Charles Mfg. Co.....23o/17
Structural Slate Co.....4o/17
Van, John, Range Co.....23b/5

ladders
disappearing
see *stairs—disappearing*

metal
Hohmann & Barnard, Inc.....3f/3
Paddock Pool Equipment Co.....22f/5

treads for
see *treads*

lagging
Armstrong Cork Co.....10b/1
Cork Import Corp.....10b/2
Cork Insulation Co., Inc.....10b/3
Mundet Cork Corp.....10b/4

lamps
(see also lighting fixtures; floodlights)

fluorescent
Sylvania Electric Products Inc.....30o/17
Westinghouse Electric Corp.....30o/19

lamps cont.

fluorescent—cold cathode
Sylvania Electric Products Inc.....30o/17
Westinghouse Electric Corp.....30o/19

fluorescent—starters for
General Electric Co.....29b/1
Sylvania Electric Products Inc.....30o/17
Westinghouse Electric Corp.....30a/19

germicidal
Westinghouse Electric Corp.....30o/19

incandescent
Sylvania Electric Products Inc.....30o/17
Westinghouse Electric Corp.....30o/19

infra-red
Sylvania Electric Products Inc.....30o/17
Westinghouse Electric Corp.....30a/19

mercury
Westinghouse Electric Corp.....30o/19

reflector—sealed in
Sylvania Electric Products Inc.....30o/17
Westinghouse Electric Corp.....30o/19

ultra-violet radiation
Westinghouse Electric Corp.....30o/19

latches
see *hardware*

lavatory door
see *bolts—lavatory door*

lath
arches or columns—formed
Inland Steel Products Co.....12o/3
National Gypsum Co.....12b/2
United States Gypsum Co.....12b/3
Wheeling Corrugating Co.....12o/8

base screeds for
see *screeds*

corner beads for
see *beads*

expanded or perforated metal
Alabama Metal Lath Co.....12o/1
Goldsmith Metal Lath Co.....3b/4
Inland Steel Products Co.....12o/3
National Gypsum Co.....12b/2
Penn Metal Co., Inc.....12o/5
Truscon Steel Co.....3d/9
United States Gypsum Co.....12b/3
Wheeling Corrugating Co.....12o/8

fiber
Celotex Corp.....10a/4a
Fir-Tex Insulating Board Co.....10o/6
Flintkote Co.....10o/7
Insulite Div.....10o/10
United States Gypsum Co.....10o/19
Wood Conversion Co.....10o/20

gypsum—aluminum foil covered
National Gypsum Co.....12b/2
United States Gypsum Co.....12b/3

gypsum—plain or perforated
Celotex Corp.....10o/4a; 12b/1b
National Gypsum Co.....12b/2
United States Gypsum Co.....12b/3

lath cont.

insulating
see *insulation—building*

interior corner reinforcement
Alabama Metal Lath Co.....12a/1
Goldsmith Metal Lath Co.....3b/4
Inland Steel Products Co.....12a/3
National Gypsum Co.....12b/2
Penn Metal Co., Inc.....12o/5
Pittsburgh Steel Products Co.....12o/6
Truscon Steel Co.....3d/9
United States Gypsum Co.....12b/3
Wheeling Corrugating Co.....12o/8

lead insulated
see *lath—x-ray protective*

metal—insulation or paper combination
Pittsburgh Steel Products Co.....12o/6
Wheeling Corrugating Co.....12a/8

picture moulding—metal
Alabama Metal Lath Co.....12a/1
Goldsmith Metal Lath Co.....3b/4
Housermon, E. F., Co.....21o/2
Inland Steel Products Co.....12a/3
National Gypsum Co.....12b/2
Penn Metal Co., Inc.....12o/5
Truscon Steel Co.....3d/9
United States Gypsum Co.....12b/3
Wallaeger Steel Corp.....12o/9

self-furring
see *lath—expanded or perforated metal*

tile back-up—metal
National Gypsum Co.....12b/2
United States Gypsum Co.....12b/3

wire
Pittsburgh Steel Products Co.....12a/6

x-ray protective
Bar-Ray Products, Inc.....21d/1
General Lead Construction Corp.....21d/3
Ray Proof Corp.....21d/2

laundry equipment
(see also chutes; dryers; ironing—machines; washers)
Chicago Dryer Co.....24d/1
General Electric Co.....23o/5
Hamilton Mfg. Co.....24d/1o
Hotpoint Inc.....23o/9
Westinghouse Electric Corp.....23o/20

hampers
(see also bathroom accessories)
Genevo Modern Kitchens, Inc.....23a/6

lavatories
Eljer Co.....24o/1
Elkay Mfg. Co.....23o/4
Just Mfg. Co.....23a/10
Richmond Radiator Co.....24o/2

carriers or supports for
Hoffman Specialty Co.....27e/3o
Relieble Metal Novelty Co., Inc.....24c/15
Zurn, J. A., Mfg. Co.....27e/6

doors for
see *doors—toilet*

lavatories cont.

fittings for
see *fittings—sink, lovotory or toilet*

hordwore for
see *hardware—lovatory ond toilet partition*

portitions for
see *portitions*

lead

blue—sublimed
Eagle-Picher Co. 14/4
Patterson-Sargent Co. 14/14

protective for x-ray
see *x-ray—protective products*

red
Devoe & Raynolds Co., Inc.....14/2
Eagle-Picher Co. 14/4
Glidden Co. 14/6
National Lead Co.....14/11
O'Brien Corp.....14/12
Paragon Paint & Varnish Corp.....14/13
Patterson-Sargent Co. 14/14
Pratt & Lambert-Inc.....14/16

white
Eagle-Picher Co. 14/4
Glidden Co. 14/6
National Lead Co.....14/11

leader pipe

see *pipe—conductor*

connections—roof
see *vent connections—roof*

leaf

aluminum, gold, pallodium
see *oluminum—leaf; gald—leaf; palladium—leaf*

lecterns

see *metal—ornamental, furniture*

lenses

glass—for lighting
see *glassware—illuminating; skylights*

letter boxes

(see also metal—ornamental)
Bammer Spring Hinge Co. Inc.....17b/6
Cutler Mail Chute Co.....22a/6
Donley Brothers Co.....2Bg/5
McKinney Mfg. Co.....17b/8

letters

asphalt tile
Kennedy, David E., Inc.....13d/5

inlaid vitreous or porcelain enameled
Barrows Porcelain Enamel Co.....6e/2
Davidson Enamel Products, Inc.....6d/1
Erie Enameling Co.....6d/2
Porcelain Enamel Institute, Inc.....6d/3
Seaporcel Metals, Inc.....6d/4
Spencer Studios, Inc.....22a/3
Texlite Inc. 6d/5
United States Bronze Sign Co., Inc....22a/5

letters cont.

metal
Barrows Porcelain Enamel Co.....6e/2
Illinois Bronze Works.....6e/B
Kawneer Co. 20/5
Manhattan Terrazzo Brass Strip Co., Inc. 13c/2
Newman Brothers, Inc.....6e/10
Spencer Studios, Inc.....22a/3
United States Bronze Sign Co., Inc.....22a/5

plastic
Rohm & Haas Co.....7d/1

wood
Spencer Studias, Inc. 22a/3

library equipment

Art Metal Construction Co.....22a/10
General Fireproofing Co.....22g/1
Remington Rand Inc.....22d/8
Virginia Metal Products Corp.....22d/9

lifts

see *elevators; dumbwaiters; hoists*

light arresters

Beckley-Cardy Co. 22d/1

light-reflecting products

see *reflectors or diffusers; paint; signs—illuminated or reflective*

lighting

controls for
see *controls—stage lighting; switchboards*

lighting fixtures

architectural
see *floodlights*

bathroom
see *bathroom accessories*

built-in
All-Bright Electric Products Co.....30a/2
Century Lighting Inc.....30a/4
Curtis Lighting, Inc. 30a/5
Day-Brite Lighting, Inc.....30a/6
Frink Corp. 30a/8
General Lighting Co.....30a/9
Globe Lighting Products, Inc.....30a/10
Gotham Lighting Corp.....30a/11
Leader Electric Co.....30a/13
Mitchell Mfg. Co.....30a/14
Pittsburgh Reflector Co.....30a/15
Spero Electric Corp.....30a/16
Sylvania Electric Products Inc.....30a/17
Westinghouse Electric Corp.....30a/19

ceiling grid type
see *lighting fixtures—fluorescent*

commercial
see *lighting fixtures—interior*

concealed or cove
see *lighting fixtures—built-in*

direct or indirect
see *lighting fixtures—built-in*

lighting fixtures cont.

exterior
Bach, Oscar B., Industries, Inc.....6e/1
Fiske, J. W., Iron Works.....6e/6

floodlight
see *floodlights*

fluorescent
Ainsworth Lighting, Inc.....30a/1
All-Bright Electric Products Co.....30a/2
Century Lighting Inc.....30a/4
Curtis Lighting, Inc. 30a/5
Day-Brite Lighting, Inc.....30a/6
Federal Enterprises, Inc.....30a/6a
Frink Corp. 30a/8
General Lighting Co.....30a/9
Globe Lighting Products, Inc.....30a/10
Gotham Lighting Corp.....30a/11
Kawneer Co. 30a/12
Leader Electric Co.....30a/13
Miami Cabinet Div.....24c/13
Mitchell Mfg. Co.....30a/14
Pittsburgh Reflector Co.....30a/15
Spero Electric Corp.....30a/16
Sylvania Electric Products Inc.....30a/17
Wakefield, F. W., Brass Co.....30a/18
Westinghouse Electric Corp.....30a/19

gasproof, vaporproof, weatherproof, etc.
see *reflectors or diffusers—gasproof, vaporproof, weatherproof, etc.*

glassware for
see *glassware—illuminating*

hospital
see *lighting fixtures—night light or hospital*

industrial
see *reflectors or diffusers—industrial; lighting fixtures—interior*

interior
Ainsworth Lighting, Inc.....30a/1
All-Bright Electric Products Co.....30a/2
Bach, Oscar B., Industries, Inc.....6e/1
Century Lighting Inc.....30a/4
Curtis Lighting, Inc.....30a/5
Day-Brite Lighting, Inc.....30a/6
Frink Corp. 30a/8
General Lighting Co.....30a/9
Globe Lighting Products, Inc.....30a/10
Gotham Lighting Corp.....30a/11
Leader Electric Co.....30a/13
Mitchell Mfg. Co.....30a/14
Pittsburgh Reflector Co.....30a/15
Spero Electric Corp.....30a/16
Sylvania Electric Products Inc.....30a/17
Wakefield, F. W., Brass Co.....30a/18
Westinghouse Electric Corp.....30a/19

louvered ceiling
see *lighting fixtures—fluorescent*

night light or hospital
Hart & Hegeman Div.....29c/2
Ohio Chemical & Mfg. Co.....22g/2a

reflectors or diffusers
see *reflectors or diffusers*

residential
see *lighting fixtures—interior*

show case or show window
see *lighting fixtures—built-in*

products

lighting fixtures cont.

shower bath
see reflectars ar diffusers—gaspraaf, vaparpraaf, weatherpraaf, etc.

surgical operating
see lighting fixtures—night light ar haspital

underwater
Paddack Paal Equipment Ca.....22f/5
Westinghause Electric Carp.....30a/19

ventilator combination
see louvers—light fixture cambinatian; bathraam accessaries—lighting fixtures—blawer cambinatian

lightning conductors

American Incineratar Carp.....25a/1
Cansalidated Chimney Ca.....28g/1
Custadis, Alphans, Chimney Canstructian Ca. 28g/2
Cutshall, J. M., & Sans.....28g/3
St. Lauis Lightning Pratectian Ca.....22i/5
Security Mfg. & Cantracting Ca.....22i/6

lights

sidewalk, roof, etc.
American 3 Way-Luxfer Prism Ca.....19a/2
Richards, J. Merrill.....19a/5
Rabertsan, H. H., Ca.....8c/11

lime

hydrated finishing
Finishing Lime Assn. af Ohio.....12b/1
Kelley Island Lime & Transpart Ca.....11a/6
Natianal Gypsum Ca.....12b/2
United States Gypsum Ca.....12b/3

hydrated masons'
Natianal Gypsum Ca.....12b/2
United States Gypsum Ca.....4e/8

quick
United States Gypsum Co.....4e/8; 12b/3

limestone

Indiana Limestone Institute.....4a/15
Rackwaad Alabama Stane Ca.....4a/16

linings

chimney
see chimneys—linings for

cioset
see closets—lining far

cioth—wall
see wall caverings

flue
see flues—linings far

interior wall—metal
see panels—metal

paper
see paper and felts—building

tank
(see alsa lagging)
Elgin-Butler Brick Ca.....4d/4
Rabinsan Clay Praduct Ca.....26a/6
Smith, A. O., Carp.....27b/1
Wilbur & Williams Ca.....14/24

linoleum

Armstrang Cark Ca.....13e/2
Cangaleum-Nairn Inc.....13e/3

base, lining or subfloor
Armstrang Cark Co.....13e/2
Cangaleum-Nairn Inc.....13e/3

cement for
Armstrang Cark Ca.....13e/2
Cangaleum-Nairn Inc.....13e/3
Kuhls, H. B. Fred.....9a/11
Miracle Adhesives Carp.....13j/3

cleaning compounds
see cleaners and palishes—flaar, wall, furniture, etc.

edgings
see edgings

finish for
Bruce, E. L., Ca.....13g/2
du Pant de Nemaurs, E. I., & Ca., (Inc.).14/3
Empire Várnish Ca.....14/5
Hillyard Sales Cas.....13h/1
Harn, A. C., Ca., Inc.....9a/10
Master Builders Ca.....9a/13
Minwax Ca., Inc.....14/9
Pattersan-Sargent Ca. 14/14
Pittsburgh Plate Glass Ca.....14/15

wall covering
see wall caverings—linaleum

lintels

Rabbersan Steel Ca.....1b/6
Steelcraft Mfg. Ca.....16a/28
Truscan Steel Ca.....16a/34

liquids

storage, handling and dispensing
Onan, D. W., & Sans, Inc.....29a/7

lockers

(see alsa wardrobes)

frozen food
All-Steel Equipment Inc.....22c/1

metal
All-Steel Equipment Inc.....22c/1
Berger Mfg. Div.....22c/2
Lyan Metal Praducts, Inc.....22c/4
Medart, Fred, Mfg. Ca.....22c/5
Penn Metal Carp. af Penna.....22c/6
Standard Steel Equipment Ca., Inc.....22c/8
Watsan Mfg. Ca., Inc.....22a/11
Western Wire & Iron Works, Inc.....21f/2

locks

see hardware

loudspeakers

see public address systems; saund systems

louvers

adjustable
see jalausies; lauvers—daar—ventilating; blinds—lauvered; daars—lauvered glass; windaws—lauvered glass; etc.

air conditioning or ventilating
Airalite Ca. 18c/1
American Caalair Carp.....28b/6
American Faundry & Furnace Ca.....28e/1
American Warming & Ventilating Ca..28b/16
Anemastat Carp. af America.....28b/17
Arex Ca. 19b/3
Asbestane Carp. 8c/2
Barber-Calman Ca.....28b/18
Bergmann, H. H. W., Ca.....19c/1
Burt Mfg. Ca.....19b/4
Carey, Philip, Mfg. Ca.....8c/3
Carr, Adams & Callier Ca.....5c/1
Ellisan Lauvre Ca., Inc.....18c/3
Emersan Electric Mfg. Ca.....28b/7
Hendrick Mfg. Ca.....28b/21
Hahmann & Barnard, Inc.....3f/3
Hunter Fan & Ventilating Ca., Inc.....28b/8
Ilg Electric Ventilating Ca.....28b/9
Sargent Building Specialties Inc.....25a/4
Schwitzer-Cummins Ca. 28b/12
Shepler Mfg. Ca.....28b/13
Super Steel Praducts Co.....19a/7
Swartwaut Ca. 19b/11
Trade-Wind Matarfans, Inc.....28b/14
Tuttle & Bailey, Inc.....28b/22
United States Register Ca.....28b/23
Ventilauvre Co., Inc.....18c/5
Victar Electric Praducts, Inc.....28b/15

air diffuser
see diffusers

door—ventilating
Airalite Ca. 18c/1
Barber-Calman Ca.....28b/18
Ellisan Lauvre Ca., Inc.....18c/3
Hendrick Mfg. Ca.....28b/21
Ventilauvre Ca., Inc.....18c/5

lead coated
see lauvers—ventilating—x-ray pratective

light fixture combination
Anemastat Corp. af America.....28b/17
Gatham Lighting Carp.....30a/11
Pryne & Ca., Inc.....28b/11

lightproof
see ventilatars—lightpraaf

ventilating
see lauvers—air canditianing ar ventilating; ventilatars; jalausies; daars—lauvered glass; windaws—lauvered glass

ventilating—x-ray protective
Airalite Ca. 18c/1
Bar-Ray Praducts, Inc.....21d/1
Ray Praaf Carp.....21d/2
Ventilauvre Ca., Inc.....18c/5

lubricators

elevator
Watsan Elevatar Ca., Inc.....32a/18

lumber

asbestos
see siding—asbestas—cement; roafing—asbestas-cement; wallboard—asbestos-cement

basswood and cherry
Appalachian Hardwaad Mfrs., Inc.....5a/1
Cannor Lumber & Land Ca.....13g/2a

beech and birch
Appalachian Hardwaad Mfrs., Inc.....5a/1
Connor Lumber & Land Ca.....13g/2a

creosoted or salt treated and/or creosoting or salt treating
American Lumber & Treating Ca.....5d/1
du Pant de Nemaurs, E. I., & Co., (Inc.).5d/4
Kappers Ca., Inc.....5d/4a
Republic Creasoting Co.....5d/6
Timber Structures, Inc.....3b/9
Wood Treating Chemicals Co.....5d/7

fireproofed and/or fireproofing
American Lumber & Treating Ca.....5d/1
Celcure Wood Preserving Carp.....5d/2
du Pont de Nemaurs, E. I., & Co., (Inc.).5d/4
Fax Bras. Mfg. Ca.....5c/4
Kappers Co., Inc.....5d/4a
Mengel Co. 5b/3
Protexol Carp. 5d/5
Timber Structures, Inc.....3b/9
United Stotes Plywood Corp.....5b/3

insect preventive treated and/or treating
American Lumber & Treating Ca.....5d/1
Celcure Wood Preserving Carp.....5d/2
Cuprinol Div. 5d/3
du Pont de Nemours, E. I., & Ca. (Inc.).5d/4
Fox Bras. Mfg. Co.....5c/4
Koppers Co., Inc.....5d/4a
Protexol Carp. 5d/5
Republic Creosoting Ca.....5d/6
Wood Treating Chemicals Co.....5d/7

maple
Appalachian Hardwaad Mfrs., Inc.....5a/1
Bruce, E. L., Ca.....13g/2
Connar Lumber & Land Ca.....13g/2a

moulding
see trim—wood

oak
Appalachian Hardwood Mfrs., Inc.....5a/1

pine
Bruce, E. L., Co.....13g/2

pine—idaho white, ponderosa and sugar
Western Pine Assn.....5a/4

plywood
see plywood

redwood
California Redwood Assn.....5a/2

termite preventive
see preservatives—wood—termite preventive; lumber—insect preventive treated and/or treating

treatment of
see preservatives—wood

yellow poplar
Appalachian Hardwaad Mfrs., Inc.....5a/1

luminaires
see lighting fixtures

m

machinery builders
special
Shlagra Steel Praducts Carp.....15g/9

magnesia
see insulation—high temperature

magnesite
see flaoring—mognesium oxychlaride cement

magnesium oxychloride cement
see flooring—magnesium axychlaride cement

mail boxes
see letter baxes; chutes—mail

manhole covers
see covers and frames

mantels
see fireplace—mantels

marble
Georgia Marble Co.....4a/7
Marble Institute of America, Inc.....4a/8
Tennessee Marble Praducers.....4a/9
Vermont Morble Ca.....4a/10

ashlar
Geargia Marble Co.....4a/7
Marble Institute of Americo, Inc.....4a/8
Tennessee Morble Praducers.....4a/9
Vermont Marble Co.....4a/10

cleaning compounds
see cleaners and polishes—floor, woll, furniture; etc.

dividing strips for
see dividers

marine treads and plates
see plates; treads

markers
boundary
Fletcher, H. E., Co.....4a/3

flooring
Kennedy, David E., Inc.....13d/5
Maulding, Thas., Floor Mfg. Co.....13d/7

marquees
Athey Shade Co.....18d/5
Flaur City Ornamental Iron Co.....6e/6a
Illinois Bronze Works.....6e/8
Natcar 20/6
Internotional Steel Co.....15d/2
Pennsylvania Wire Glass Co.....19a/4
Seaparcel Metals, Inc.....6d/4
Texlite Inc. 6d/5

mastic
see flooring—asphalt mastic; cement—mastic; glazing compounds; etc.

masts
flagpole
see flagpoles

radio, radar or television
American Flagpole Equipment Ca.....6f/1
Babcock-Davis Carp. 6f/2
Lingo, John E., & Son, Inc.....6f/3
North American Iron & Steel Co., Inc....6f/4

mats or matting
plastic
Rabbins Tire & Rubber Co., Inc.....13e/9

medicine cabinets
see cabinets—haspitol; bathroom accessaries

memorials
see specific type os: granite, etc.; toblets—metal

metal
acid resistant
see metal—carrasian and rust resistant

aluminum or aluminum alloy
Aluminum Co. af America.....6a/1
Kowneer Co. 6a/2
Revere Copper & Bross Inc.....6b/2

castings
see castings

copper or copper alloy
American Brass Co.....6b/1; Bc/1; 27a/1
Chase Bross & Copper Co., Inc.....8c/4
Revere Copper & Brass Inc..6b/2; 8c/9; 27a/7

corrosion and rust resistant
Allegheny Ludlum Steel Carp.....6c/1
Aluminum Co. af America.....6a/1
American Brass Co.....6b/1; 8c/1; 27a/1
Armco Steel Carp.....6c/3
Duriron Co., Inc.....26b/2
Inland Steel Co.....6c/4
Kawneer Co. 6a/2
Republic Steel Carp.....6c/5
Revere Copper & Bross Inc.....8c/9; 27a/7
United States Steel.....6c/6

enameled
see sheet, strip, plate—vitreous or porcelain enameled

enameling
Armco Steel Corp.....6c/3
Republic Steel Carp.....6c/5

expanded
see lath; sheet, strip, plate—expanded—lar partitions, guards, grilles, etc.

fabric
see wire—cloth

metal cont.

heat resistant
Republic Steel Corp.....6c/5

iron or iron alloy
Armco Steel Corp.....6c/3
Republic Steel Corp.....6c/5

lath
see *loth*

ornamental
Aluminum Co. of Americo.....6a/1
Americon Bross Co.....6b/1
Bach, Oscar B., Industries, Inc.....6e/1
Birmingham Ornomental Iron Co., Inc....6e/3
Blum, Julius, & Co., Inc.....6e/5
Chase Brass & Copper Co., Inc.....13c/1
Decatur Iron & Steel Co.....22h/1
Erie Enameling Co.....6d/2
Fiske, J. W., Iron Works.....6e/6
Flour City Ornamental Iron Co.....6e/6o
General Bronze Corp.....6e/7
Harrington & King Perforating Co.....2Bb/20
Hendrick Mfg. Co.....2Bb/21
Illinois Bronze Works.....6e/8
International Bronze Tablet Co., Inc.....6e/9
International Steel Co.....15d/2
Kawneer Co. 6o/2
National Assn. of
Ornamental Metal Mfrs.....6e/9a
Newman Brothers, Inc.....6e/10
Porceloin Enomel Institute, Inc.....6d/3
Reliance Art Metal Co.....15o/16
Revere Copper & Bross Inc.....6b/2
Robberson Steel Co.....1b/6
Seaporcel Metals, Inc.....6d/4
Spencer Studios, Inc.....22a/3
Stewart Iron Works Co., Inc.....21g/5
United States Bronze Sign Co., Inc.....22o/5
Universol Corp. 16o/36

plywood backed
see *ponels—metal—plywood bocked*

steel—stainless-clad
Allegheny Ludlum Steel Corp.....6c/1

steel or stainless steel
Allegheny Ludlum Steel Corp.....6c/1
American Institute of Steel
Construction, Inc.....3d/1
Armco Steel Corp.....6c/3
Republic Steel Corp.....6c/5
Sharon Steel Corp.....Bd/5
United States Steel.....6c/6

metal plate construction

Americon Institute of Steel
Construction, Inc.....3d/1
Decatur Iron & Steel Co.....22h/1
International Steel Co.....15d/2
Patterson-Kelley Co., Inc.....27a/5
Standard Steel Equipment Co., Inc.....22c/B
Universal Corp. 16a/36

meters

air
Anemostat Corp. of America.....2Bb/17

flow
Paddock Pool Equipment Co.....22f/5
Worthington Pump & Machinery Corp..28o/10

microphones

see *public oddress systems; sound systems*

mildew preventives

see *preservatives—wood*

milk bottle receivers

see *receivers*

millwork

Californio Redwood Assn.....5a/2
Carr, Adams & Collier Co.....5c/1
Curtis Companies Service Bureau.....5c/2
Fox Bros. Mfg. Co.....5c/4
Nuroco Woodwork Mfg. Div.....5c/3
Protexol Corp. 5d/5
Western Pine Assn.....5a/4

mineral wool

see *insulotion—building*

mirrors

(see olso bothroom occessories)
Libbey-Owens-Ford Gloss Co.....7o/2
Miami Cabinet Div.....24c/13
Pittsburgh Plate Glass Co.....7o/4

adhesives for
see *odhesives*

glass units—flexible—cloth-backed
see *woll coverings—gloss unit—flexible—cloth-bocked*

mixers

shower bath
see *volves—mixing*

money chests

see *safes*

mops

Mosury-Young Co. 13h/2

mortar

see *cement; lime*

mortuary racks and trays

Jewett Refrigerotor Co., Inc.....22b/5
Market Forge Co.....22b/6

mosaics

see *tile—cloy—floor or woll*

motor-generators

General Electric Co.....29a/4

motors

General Electric Co.....29o/4

controls for
see *controls—motor*

motors cont.

damper regulator or control
Burt Mfg. Co.....19b/4

starters for
see *switches—motor starting*

mouldings

(see olso trim)

base
see *cove bose; flooring*

blackboard
see *blockboards—fromes and mouldings for*

clip or snap-on
Brosco Mfg. Co.....20/3
Himmel Brothers Co.....20/4
Kawneer Co. 20/5
Morsh Wall Products, Inc.....13i/B
Nationol Store Fronts.....20/7
Tylac Co.....13i/10
Wolloeger Steel Corp.....12o/9

fiber
Armstrong Cork Co.....13e/2
Barclay Mfg. Co., Inc.....13i/1
Celotex Corp.....10a/4a
Marsh Wall Products, Inc.....13i/8
Masonite Corp.....13i/9
Tylac Co.....13i/10
Upson Co. 12b/4
Wood Conversion Co.....10a/20

metal
Acme Bulletin & Directory Board Corp...22o/1
Aetno Steel Products Corp.....15o/1
Alumiline Corp. 20/1
Aluminum Co. of America.....6a/1
American Bross Co.....6b/1
Anco Mfg. Co., Inc.....20/2
Armstrong Cork Co.....13e/2
Art Metal Construction Co.....15a/4
B & T Metals Co.....13J/1
Barcloy Mfg. Co., Inc.....13i/1
Blum, Julius, & Co., Inc.....6e/5
Brasco Mfg. Co.....20/3
Chase Brass & Copper Co., Inc.....13c/1
Dohlstrom Metallic Door Co.....15a/6
Himmel Brothers Co.....20/4
Illinois Bronze Works.....6e/B
Inland Steel Products Co.....12a/3
Internationol Steel Co.....15d/2
Kowneer Co. 20/5
Knapp Bros. Mfg. Co.....12a/4o
Morsh Wall Products, Inc.....13i/B
Martin-Porry Corp. 21a/4
Notcor 20/6
National Store Fronts.....20/7
Pittsburgh Plate Glass Co.....20/B
Relionce Art Metal Co.....15a/16
Revere Copper & Brass Inc.....6b/2
Sioux Metal Products Co.....20/9
Tylac Co.....13i/10
Werner, R. D., Co., Inc.....13J/2
Wolloeger Steel Corp.....12o/9

metal—wood veneer
Mengel Co. 5b/3
United Stotes Plywood Corp.....5b/3

picture—metal
see *lath*

mouldings cont.

plastic
Morsh Woll Products, Inc.....13i/8
Tile-Tex Co., Inc.....13d/B

rubber
see *flooring*

tile
see *tile*

wiring
see *conduit*

wood
see *trim—wood*

mountings

machinery and motor—isolation or insulation of vibrations
see *absorbers—shock or vibration*

moving contractors

buildings, machinery, etc.
Eichleay Engineering Corp.....1b/2
Spencer, White & Prentis, Inc.....2o/4

moving stairs

see *stairs—moving*

music dispersing systems

see *sound systems—electronic; carillons*

n

nailing concrete

see *concrete—nailing*

nails

Hohmann & Barnard, Inc.....3f/3

rust resistant
Aluminum Co. of America.....6o/1
Chase Brass & Copper Co., Inc.....8c/4
Creo-Dipt Co., Inc.....8b/7
Nichols Wire & Aluminum Co.....8c/7o
Pittsburgh Steel Products Co.....12o/6

self-furring
Penn Metal Co., Inc.....12o/5
Pittsburgh Steel Products Co.....12o/6

x-ray protective
Bar-Ray Products, Inc.....21d/1
General Lead Construction Corp.....21d/3
Ray Proof Corp.....21d/2

name plates

see *directories—building*

natatorium

see *swimming pool*

nickel copper alloys

see *metal—copper or copper alloy; sheet, strip, plate; etc.*

nipples

pipe
see *fittings—pipe or tube*

nosings

(see also treads; edgings)

metal
American Abrasive Metals Co.....13o/9
American Mason Safety Tread Co.....13o/10
B & T Metals Co.....13J/1
Blum, Julius, & Co., Inc.....6e/5
Himmel Brothers Co.....20/4
Werner, R. D., Co., Inc.....13J/2
Wooster Products, Inc.....13o/12

safety
American Abrasive Metals Co.....13o/9
American Mason Safety Tread Co.....13o/10
Kleistone Rubber Co., Inc.....13e/8
Moulding, Thos., Floor Mfg. Co.....13d/7
Murray Tile Co., Inc.....13b/3
Norton Co.....13c/4
Wooster Products, Inc.....13o/12

nozzles

fire hose
Allen, W. D., Mfg. Co.....27c/1
Elkhart Brass Mfg. Co.....27c/2
Grinnell Co., Inc.....27c/3
McIntire, F. N., Brass Works.....22h/7

numbers

house, etc—clay tile
Combridge Tile Mfg. Co.....13b/1

o

office construction

unit
Housermon, E. F., Co.....21o/2

office equipment

All-Steel Equipment Inc.....22c/1
Art Metal Construction Co.....22o/10
General Fireproofing Co.....22g/1
Remington Rand Inc.....22d/B
Watson Mfg. Co., Inc.....22o/11

oil

fired boilers
see *boilers—oil fired units*

floor finishing
Mosury-Young Co.....13h/2

furnaces
see *furnaces—oil fired*

storage tanks for
see *tanks—metal or metal lined*

oil-proofing

concrete
see *concrete—oil-proofing contractors*

operators

awning
see *awnings—operating mechanisms for*

casement window
see *operators—sash; hardware—casement window*

door
Barber-Colman Co.....15g/2
Byrne Doors, Inc.....15f/1
Cornell Iron Works, Inc.....15e/2
Crawford Door Co.....15g/3
Fleming Steel Co.....15f/2
International Steel Co.....15d/2
Kinnear Mfg. Co.....15e/3
Lawrence Steel Co.....15e/4
Mahon, R. C., Co.....15e/5
Moeschl-Edwards Corrugating Co., Inc..15e/6
North American Iron & Steel Co., Inc...15e/7
Overhead Door Corp.....15g/6
Peelle-Richmond.....15f/3
Raynor Mfg. Co.....15g/7
Richards-Wilcox Mfg. Co.....17o/10
Rowe Mfg. Co.....15g/8
Security Fire Door Co.....15f/5
Stanley Works.....17b/11
Wilson, J. G., Corp.....15e/8

door—fire house
Richards-Wilcox Mfg. Co.....17o/10
Rowe Mfg. Co.....15g/8

door—garage—electric
Atlas Overhead Door Co.....15g/1
Barber-Colman Co.....15g/2
Byrne Doors, Inc.....15f/1
Crawford Door Co.....15g/3
Kinnear Mfg. Co.....15e/3
Moeschl-Edwards Corrugating Co., Inc..15e/6
Overhead Door Corp.....15g/6
Peelle-Richmond.....15f/3
Raynor Mfg. Co.....15g/7
Richards-Wilcox Mfg. Co.....17o/10
Rowe Mfg. Co.....15g/8
Security Fire Door Co.....15f/5
Wilson, J. G., Corp.....15e/8

door—garage—radio control
Barber-Colman Co.....15g/2

door—garage—sound control
Vendo Co.....15g/10

door—photoelectric unit
International Steel Co.....15d/2
Stanley Works.....17b/11

elevator door
Montgomery Elevator Co.....32o/8
Payne, F. S., Co.....32o/11
Peelle Co.....32o/12
St. Louis Fire Door Co.....15f/4
Security Fire Door Co.....15f/5
Westinghouse Electric Corp.....32o/19

gate
Barber-Colman Co.....15g/2
Payne, F. S., Co.....32o/11
Peelle Co.....32o/12
Richards-Wilcox Mfg. Co.....17a/10
Security Fire Door Co.....15f/5

jail door
see *jail equipment*

products

operators cont.

sash

A.B.C. Steel Equipment Co., Inc.....16o/1
Boyley, William, Co.....16o/5
Bliss Steel Products Corp.....16o/6
Casement Hardware Co.....17b/15
Ceco Steel Products Corp.....16a/7
Crittoll-Federal, Inc.....16o/9
Croft Steel Products, Inc.....16a/10
Dolmo Continentol Inc.....16b/2
Detroit Steel Products Co.....16a/13
Flynn, Michael, Mfg. Co.....16o/16
Getty, H. S., & Co., Inc.....17b/16
Goodcroft Metol Products Co.....16o/19
Hope's Windows Inc.....16o/20
Levow, David Bd/2
Mesker Bros.....16a/22
Reynolds Metols Co.....16o/25o
Sunlight Metol Products Co.....16o/31
Thorn, J. S., Co.....16o/32
Truscon Steel Co.....16o/34
Universal Window Co.....17b/17

transom

see *hardwore*

ornamental metal work

see *metal—ornomentol*

outlets

see *receptocles—electric; boxes—electricol outlet;* etc.

ovens

industriol

International Chimney Corp.....2Bg/4
Trumbull Electric Mfg. Co.....29o/5

overhead doors

see *doors—overhead type*

hardware for

see *hardware*

p

package receivers

see *receivers*

paging systems

Executone, Inc. 31b/4
Internationol Business Machines Corp...31c/1
Stromberg-Corlson Co.....31b/5o
Webster Electric Co.....31b/6

paint

ocid, olkali or oil resistont

Armstrong Cork Co.....10b/1
Barrett Div. Bo/2
Devoe & Raynolds Co., Inc.....14/2
du Pont de Nemours, E. I., & Co., (Inc.).14/3
Empire Vornish Co.....14/5
Glidden Co. 14/6
Hoynes Products Co.....9a/9

paint cont.

acid, alkoli or oil resistant cont.

Horn, A. C., Co., Inc.....9o/10
Keystone Vornish Co.....14/7
Moster Builders Co.....9o/13
Meduso Portlond Cement Co.....4e/2
Mirocle Adhesives Corp.....13j/3
Notionol Chemical & Mfg. Co.....14/10
Porogon Point & Vornish Corp.....14/13
Potterson-Sorgent Co. 14/14
Pittsburgh Plote Gloss Co.....14/15
Prott & Lombert-Inc.....14/16
Rust-Oleum Corp. 14/19
Sherwin-Williams Co. 14/19o
Sonneborn, L., Sons, Inc.....9o/17
Stonhord Co. 13c/12
Toch Brothers Inc.....9o/19
Truscon Laboratories.....9o/20; 14/20
Tuckahoe Stucco Corp.....4e/7
U. S. Gutto Percho Point Co.....14/21
Wilbur & Williams Co.....14/24

oluminum

Armstrong Cork Co.....10b/1
Cork Insulotion Co., Inc.....10b/3
Devoe & Raynolds Co., Inc.....14/2
du Pont de Nemours, E. I., & Co., (Inc.).14/3
Empire Varnish Co.....14/5
Flintkote Co. 9o/7
Hastings & Co., Inc.....14/6a
Kedmont Mfg. & Waterproofing Co...9o/10a
Koppers Co., Inc.....Bo/6
Notionol Gypsum Co.....12b/2
O'Brien Corp.....14/12
Porogon Point & Vornish Corp.....14/13
Patterson-Sorgent Co. 14/14
Pittsburgh Plate Gloss Co.....14/15
Rust-Oleum Corp. 14/19
Sherwin-Willioms Co. 14/19o
Sonneborn, L., Sons, Inc.....9o/17
Stondord Varnish Works.....14/19b
Toch Brothers Inc.....9o/19
Truscon Loborotories.....14/20
U. S. Gutta Percho Point Co.....14/21
Wilbur & Willioms Co.....14/24

asphalt

Anti-Hydro Waterproofing Co.....9o/2
Armstrong Cork Co.....10b/1
Ceresit Waterproofing Corp.....9o/6
Cork Import Corp.....10b/2
Cork Insulotion Co., Inc.....10b/3
Flintkote Co. 9o/7
Haynes Products Co.....9o/9
Kedmont Mfg. & Woterproofing Co...9o/10a
Porogon Paint & Vornish Corp.....14/13
Sonneborn, L., Sons, Inc.....9a/17
Toch Brothers Inc.....9o/19
Wilbur & Williams Co.....14/24

boiler

see *paint—heat resistant*

brick, cement, concrete, stucco, stone

Aquabar Co. 9a/3
Armstrong Cork Co.....10b/1
Borrett Div. Bo/2
Cobot, Samuel, Inc.....14/1
Ceresit Waterproofing Corp.....9o/6
Cork Import Corp.....10b/2
Devoe & Raynolds Co., Inc.....14/2

paint cont.

brick, cement, concrete, stucco, stone cont.

du Pont de Nemours, E. I., & Co., (Inc.).14/3
Eagle-Picher Co. 14/4
Empire Vornish Co.....14/5
Flintkote Co. 9o/7
Glidden Co. 14/6
Haynes Products Co.....9o/9
Horn, A. C., Co., Inc.....9o/10
Kedmont Mfg. & Waterproofing Co...9o/10a
Keystone Varnish Co.....14/7
Kuhls, H. B. Fred.....9o/11
Master Builders Co.....9a/13
Medusa Portland Cement Co.....4e/2
Minwax Co., Inc.....9o/14
Mirocle Adhesives Corp.....13j/3
National Chemical & Mfg. Co.....14/10
Nationol Gypsum Co.....12b/2
Notionol Lead Co.....14/11
O'Brien Corp.....14/12
Porogon Point & Varnish Corp.....14/13
Potterson-Sorgent Co. 14/14
Pittsburgh Plate Gloss Co.....14/15
Prott & Lombert-Inc.....14/16
Roberts Point Corp.....14/17
Rust-Oleum Corp. 14/19
Sherwin-Willioms Co. 14/19o
Sonneborn, L., Sons, Inc.....9o/17
Stondard Varnish Works.....14/19b
Stonhord Co. 13c/12
Toch Brothers Inc.....9o/19
Truscon Loborotories.....9a/20; 14/20
Tuckahoe Stucco Corp.....4e/7
U. S. Gutta Percha Point Co.....14/21
United States Gypsum Co.....14/22
Universol Atlas Cement Co.....4b/3
Wesco Waterpaints, Inc.....14/23
Wilbur & Williams Co.....14/24

colcimine

see *point—water thinned*

convas or fobric

du Pont de Nemours, E. I., & Co., (Inc.).14/3
Empire Vornish Co.....14/5
Glidden Co. 14/6
Haynes Products Co.....9o/9
Keystone Vornish Co.....14/7
Notionol Lead Co.....14/11
O'Brien Corp.....14/12
Potterson-Sorgent Co. 14/14
Prott & Lambert-Inc.....14/16
Sherwin-Williams Co. 14/19o

cosein—poste

Notional Chemicol & Mfg. Co.....14/10
Notional Gypsum Co.....12b/2
United States Gypsum Co.....14/22

cosein—powder

Notionol Gypsum Co.....12b/2
United Stotes Gypsum Co.....14/22

cement bose

Ceresit Woterproofing Corp.....9o/6
Kedmont Mfg. & Woterproofing Co....9o/10a
Meduso Portland Cement Co.....4e/2
Toch Brothers Inc.....9o/19
Tuckohoe Stucco Corp.....4e/7
United Stotes Gypsum Co.....14/22
Universol Atlos Cement Co.....4b/3

paint cont.

colors for
see *paint—pigments*

deck—non-slip
American Abrasive Metals Co.....13a/9
Miracle Adhesives Carp.....13j/3
Wilbur & Williams Co.....14/24

enamel
see *enamels*

floor—non-slip
see *paint—deck—non-slip*

floor or deck
American Abrasive Metals Co.....13a/9
Devoe & Raynolds Co., Inc.....14/2
du Pont de Nemours, E. I., & Co., (Inc.).14/3
Glidden Co. 14/6
Haynes Products Co.....9a/9
Keystone Varnish Co.....14/7
Miracle Adhesives Corp.....13j/3
National Lead Co.....14/11
O'Brien Corp.....14/12
Paragon Paint & Varnish Corp.....14/13
Patterson-Sargent Co. 14/14
Pittsburgh Plate Glass Co.....14/15
Pratt & Lambert-Inc.....14/16
Rust-Oleum Corp. 14/19
Sherwin-Williams Co. 14/19a
Sonneborn, L., Sons, Inc.....9a/17
Standard Varnish Works.....14/19b
Truscon Laboratories.....14/20
U. S. Gutta Percha Paint Co.....14/21
Wilbur & Williams Co.....14/24

fume resistant
Armstrong Cork Co.....10b/1
Barrett Div. 8a/2
Devoe & Raynolds Co., Inc.....14/2
du Pont de Nemours, E. I., & Co., (Inc.).14/3
Empire Varnish Co.....14/5
Glidden Co. 14/6
Haynes Products Co.....9a/9
Horn, A. C., Co., Inc.....9a/10
Master Builders Co.....9a/13
National Chemical & Mfg. Co.....14/10
Paragon Paint & Varnish Corp.....14/13
Patterson-Sargent Co. 14/14
Pittsburgh Plate Glass Co.....14/15
Pratt & Lambert-Inc.....14/16
Rust-Oleum Corp. 14/19
Sherwin-Williams Co. 14/19a
Sonneborn, L., Sons, Inc.....9a/17
Stonhard Co. 13c/12
Tach Brothers Inc.....9a/19
Truscon Laboratories.....14/20
U. S. Gutta Percha Paint Co.....14/21
Wilbur & Williams Co.....14/24

fungi resistant
Devoe & Raynolds Co., Inc.....14/2
du Pont de Nemours, E. I., & Co., (Inc.).14/3
Glidden Co. 14/6
Haynes Products Co.....9a/9
Paragon Paint & Varnish Corp.....14/13
Patterson-Sargent Co. 14/14
Sherwin-Williams Co. 14/19a
Wilbur & Williams Co.....14/24

paint cont.

gas holder
see *paint—fume resistant*

gold
Hastings & Co., Inc.....14/6a

graphite
Devoe & Raynolds Co., Inc.....14/2
Glidden Co. 14/6
Rust-Oleum Corp. 14/19
Sherwin-Williams Co. 14/19a

heat resistant
Devoe & Raynolds Co., Inc.....14/2
Empire Varnish Co. 14/5
Glidden Co. 14/6
Haynes Products Co.....9a/9
Keystone Varnish Co.....14/7
Master Builders Co.....9a/13
Paragon Paint & Varnish Corp.....14/13
Patterson-Sargent Co. 14/14
Pittsburgh Plate Glass Co.....14/15
Pratt & Lambert-Inc.....14/16
Rust-Oleum Corp. 14/19
Sherwin-Williams Co. 14/19a
Sonneborn, L., Sons, Inc.....9a/17
Stonhard Co. 13c/12
Toch Brothers Inc.....9a/19
U. S. Gutta Percha Paint Co.....14/21
Wilbur & Williams Co.....14/24

house
Breinig Brothers, Inc.....14/1a
Cabot, Samuel, Inc.....14/1
Devoe & Raynolds Co., Inc.....14/2
du Pont de Nemours, E. I., & Co., (Inc.).14/3
Eagle-Picher Co. 14/4
Empire Varnish Co.....14/5
Glidden Co. 14/6
Keystone Varnish Co.....14/7
Medusa Portland Cement Co.....4e/2
National Chemical & Mfg. Co.....14/10
National Lead Co.....14/11
O'Brien Corp.....14/12
Paragon Paint & Varnish Corp.....14/13
Patterson-Sargent Co. 14/14
Pittsburgh Plate Glass Co.....14/15
Pratt & Lambert-Inc.....14/16
Sherwin-Williams Co. 14/19a
Sonneborn, L., Sons, Inc.....9a/17
Standard Varnish Works.....14/19b
Tuckahoe Stucco Corp.....4e/7
U. S. Gutta Percha Paint Co.....14/21
United States Gypsum Co.....14/22
Wilbur & Williams Co.....14/24

insulation protection
Armstrong Cork Co.....10b/1
Sprayo-Flake Co.....10a/18

machinery
Devoe & Raynolds Co., Inc.....14/2
du Pont de Nemours, E. I., & Co., (Inc.).14/3
Empire Varnish Co.....14/5
Haynes Products Co.....9a/9
Paragon Paint & Varnish Corp.....14/13
Pittsburgh Plate Glass Co.....14/15
Pratt & Lambert-Inc.....14/16
Rust-Oleum Corp. 14/19
Sonneborn, L., Sons, Inc.....9a/17
Stonhard Co. 13c/12
U. S. Gutta Percha Paint Co.....14/21

paint cont.

masonry
see *paint—brick, cement, etc.*

metal protective
Allen Ventilator Div.....19b/1
American Zinc Institute Inc.....6c/2
Armstrong Cork Co.....10b/1
Barrett Div. 8a/2
Devoe & Raynolds Co., Inc.....14/2
du Pont de Nemours, E. I., & Co., (Inc.).14/3
Eagle-Picher Co. 14/4
Empire Varnish Co.....14/5
Glidden Co. 14/6
Haynes Products Co.....9a/9
Keystone Varnish Co.....14/7
Koppers Co., Inc.....8a/6
Miracle Adhesives Corp.....13j/3
National Lead Co.....14/11
O'Brien Corp.....14/12
Paragon Paint & Varnish Corp.....14/13
Patterson-Sargent Co. 14/14
Pittsburgh Plate Glass Co.....14/15
Pratt & Lambert-Inc.....14/16
Rust-Oleum Corp. 14/19
Sherwin-Williams Co. 14/19a
Sonneborn, L., Sons, Inc.....9a/17
Standard Varnish Works.....14/19b
Stonhard Co. 13c/12
Toch Brothers Inc.....9a/19
Truscon Laboratories.....14/20
Tuckahoe Stucco Corp.....4e/7
U. S. Gutta Percha Paint Co.....14/21
Wilbur & Williams Co.....14/24

metallic
see *paint—aluminum; paint—gold*

mill white
Cabot, Samuel, Inc.....14/1
Devoe & Raynolds Co., Inc.....14/2
du Pont de Nemours, E. I., & Co., (Inc.).14/3
Glidden Co. 14/6
Keystone Varnish Co.....14/7
Paragon Paint & Varnish Corp.....14/13
Patterson-Sargent Co. 14/14
Sherwin-Williams Co. 14/19a
U. S. Gutta Percha Paint Co.....14/21
Wilbur & Williams Co.....14/24

pigments
Devoe & Raynolds Co., Inc.....14/2
du Pont de Nemours, E. I., & Co., (Inc.).14/3
Eagle-Picher Co. 14/4
Glidden Co. 14/6
National Lead Co.....14/11
Paragon Paint & Varnish Corp.....14/13
Sherwin-Williams Co. 14/19a
United States Gypsum Co.....14/22

plywood
Breinig Brothers, Inc.....14/1a
Harn, A. C., Co., Inc.....9a/10
Mengel Co. 5b/3
O'Brien Corp.....14/12
Sonneborn, L., Sons, Inc.....9a/17
United States Plywood Corp.....5b/3

porch floor
see *paint—floor or deck*

priming—metal
American Zinc Institute Inc.....6c/2
Barrett Div. 8a/2

paint cont.

priming—metal cont.
Cork Impart Corp.....10b/2
Devae & Raynalds Co., Inc.....14/2
du Pont de Nemaurs, E. I., & Co., (Inc.).14/3
Eagle-Picher Co. 14/4
Empire Vornish Co.....14/5
Glidden Co. 14/6
Keystone Varnish Ca.....14/7
Miracle Adhesives Carp.....13j/3
Notional Leod Co.....14/11
O'Brien Carp.....14/12
Paragon Paint & Vornish Carp.....14/13
Potterson-Sargent Ca. 14/14
Pittsburgh Plate Gloss Co.....14/15
Prott & Lambert-Inc.....14/16
Rust-Oleum Carp. 14/19
Sherwin-Williams Co. 14/19o
Sonneborn, L., Sons, Inc.....9a/17
Tach Brathers Inc.....9a/19
Truscon Labaratories.....14/20
U. S. Gutta Percha Paint Ca.....14/21
Wilbur & Williams Ca.....14/24

priming—plaster and concrete
see sealers; enamels—undercoat; paint—brick, cement, etc.

priming—wood
Cabat, Samuel, Inc.....14/1
Devoe & Raynolds Co., Inc.....14/2
du Pont de Nemaurs, E. I., & Co., (Inc.).14/3
Glidden Co. 14/6
Nationol Lead Co.....14/11
O'Brien Corp.....14/12
Paragon Paint & Varnish Carp.....14/13
Pattersan-Sargent Co. 14/14
Pittsburgh Plate Glass Co.....14/15
Prott & Lombert-Inc.....14/16
Sonneborn, L., Sans, Inc.....9o/17
U. S. Gutta Percha Paint Ca.....14/21
United Stotes Gypsum Co.....14/22

removers
Breinig Brothers, Inc.....14/1a
Hoynes Products Co.....9a/9
O'Brien Corp.....14/12
Sherwin-Williams Ca. 14/19a

resin
Devae & Raynolds Co., Inc.....14/2
Hoynes Praducts Ca.....9a/9
Medusa Partland Cement Ca.....4e/2
Miracle Adhesives Carp.....13j/3
Nationol Chemical & Mfg. Co.....14/10
National Gypsum Ca.....12b/2
Pittsburgh Plate Glass Ca.....14/15
United States Gypsum Ca.....14/22
Wesco Woterpaints, Inc.....14/23

roof
Cobot, Samuel, Inc.....14/1
Devoe & Raynolds Co., Inc.....14/2
du Pont de Nemours, E. I., & Ca., (Inc.).14/3
Glidden Co. 14/6
Haynes Products Co.....9a/9
Kedmant Mfg. & Waterpraafing Co....9a/10a
Medusa Portland Cement Ca.....4e/2
Paragan Point & Varnish Carp.....14/13
Pattersan-Sargent Ca. 14/14
Pittsburgh Plate Glass Ca.....14/15
Sherwin-Williams Co. 14/19a
Sanneborn, L., Sons, Inc.....9a/17

paint cont.

roof cant.
Standard Varnish Works.....14/19b
Stanhard Co. 13c/12
Tach Brathers Inc.....9a/19
Truscan Laboratories.....14/20
U. S. Gutta Percha Paint Co.....14/21
Wilbur & Williams Ca.....14/24

rubber base
Haynes Products Co.....9a/9
Medusa Partland Cement Ca.....4e/2
Parogon Paint & Varnish Corp.....14/13
Rust-Oleum Corp. 14/19
Truscan Labaratories.....14/20
Wilbur & Willioms Ca.....14/24

rust inhibitive
American Zinc Institute Inc.....6c/2
Armstrong Cark Co.....10b/1
Devae & Raynalds Co., Inc.....14/2
Eagle-Picher Co. 14/4
Glidden Co. 14/6
Miracle Adhesives Carp.....13j/3
Paragan Paint & Vornish Carp.....14/13
Patterson-Sargent Co. 14/14
Pittsburgh Plate Glass Ca.....14/15
Pratt & Lambert-Inc.....14/16
Rust-Oleum Carp. 14/19
Sherwin-Williams Ca. 14/19a
Sonnebarn, L., Sans, Inc.....9o/17
Stanhard Co. 13c/12
Truscon Laboratories.....9o/20; 14/20
U. S. Gutta Percho Paint Ca.....14/21
Wilbur & Williams Ca.....14/24

stack
see paint—heat resistant

structural steel
see paint—metal protective; paint—priming—metal

swimming pool
Ceresit Waterpraafing Carp.....9a/6
Horn, A. C., Ca., Inc.....9a/10
Master Builders Ca.....9a/13
Medusa Portland Cement Ca.....4e/2
Paddock Paal Equipment Ca.....22f/5
Parogan Paint & Varnish Corp.....14/13
Truscan Laboratories.....9a/20; 14/20
Tuckahoe Stucco Carp.....4e/7
Wilbur & Williams Co.....14/24

synthetic resin
see paint—resin

technical
see specific type of paint

texturing
Pratt & Lambert-Inc.....14/16
Sherwin-Williams Ca. 14/19a
Tuckahoe Stucca Carp.....4e/7
U. S. Gutta Percha Paint Ca.....14/21
United Stotes Gypsum Co.....14/22
Wesco Waterpaints, Inc.....14/23

vehicle for
du Pont de Nemaurs, E. I., & Ca., (Inc.).14/3
Eagle-Picher Co. 14/4
Empire Varnish Ca.....14/5
National Lead Co.....14/11
Paragan Paint & Varnish Carp.....14/13
Pattersan-Sargent Ca. 14/14
Pittsburgh Plate Glass Ca.....14/15

paint cont.

vehicle for cont.
Rust-Oleum Carp. 14/19
Sherwin-Williams Ca. 14/19a
U. S. Gutta Percha Paint Co.....14/21

wall finish
Breinig Brathers, Inc.....14/1a
Devoe & Raynalds Ca., Inc.....14/2
du Pont de Nemours, E. I., & Ca., (Inc.).14/3
Eagle-Picher Co. 14/4
Empire Varnish Co.....14/5
Glidden Ca. 14/6
Harn, A. C., Co., Inc.....9a/10
Keystane Varnish Co.....14/7
Medusa Portland Cement Ca.....4e/2
Minwax Ca., Inc.....14/9
National Chemical & Mfg. Co.....14/10
Notionol Gypsum Ca.....12b/2
Natianal Leod Co.....14/11
O'Brien Carp.....14/12
Paragon Paint & Varnish Carp.....14/13
Patterson-Sargent Ca. 14/14
Pittsburgh Plate Glass Ca.....14/15
Prott & Lombert-Inc.....14/16
Raberts Paint Carp.....14/17
Rust-Oleum Corp. 14/19
Sherwin-Williams Ca. 14/19a
Sonneborn, L., Sons, Inc.....9a/17
Standard Varnish Warks.....14/19b
Stonhard Co. 13c/12
Truscan Loborotaries.....14/20
Tuckahoe Stucco Carp.....4e/7
U. S. Gutta Percha Paint Ca.....14/21
United States Gypsum Ca.....14/22
Wesca Waterpaints, Inc.....14/23
Wilbur & Willioms Ca.....14/24

water thinned
du Pant de Nemaurs, E. I., & Ca., (Inc.).14/3
Glidden Co. 14/6
Medusa Portlond Cement Ca.....4e/2
Notional Chemicol & Mfg. Ca.....14/10
Notianal Gypsum Ca.....12b/2
O'Brien Carp.....14/12
Pittsburgh Plote Gloss Ca.....14/15
Sherwin-Williams Ca. 14/19a
Truscon Labaratories.....9a/20
Tuckohoe Stucca Carp.....4e/7
United States Gypsum Ca.....14/22
Wesco Woterpoints, Inc.....14/23

waterproofing
see waterproofing—point and compounds

zone marking
Devae & Raynolds Co., Inc.....14/2
Miracle Adhesives Carp.....13j/3
Parogan Point & Varnish Corp.....14/13
Pittsburgh Plote Glass Ca.....14/15
U. S. Gutta Percha Paint Ca.....14/21

palladium

leaf
Hastings & Ca., Inc.....14/6a

panel heating

see specific type heaters; heating systems

coils
see coils—pipe

panelboards

(see also switchboards)

electric
Adam, Frank, Electric Co.....29o/1
BullDog Electric Products Co.....29o/2
Federal Electric Products Co., Inc.....29o/3
Trumbull Electric Mfg. Co.....29a/5
Westinghouse Electric Corp.....29o/6

laboratory
International Business Machines Corp...31c/1

panels

access
see doors—access

acoustical
see tile—acoustical; test cells

door—ventilating
see louvers—door—ventilating

fiber
see wallboard—fiber

glass
see glass—structural

glass unit—flexible cloth-backed
see wall coverings—glass unit—flexible cloth-backed

gypsum—partition
United States Gypsum Co.....12b/3

honeycomb
Mengel Co. 5b/3
United States Plywood Corp.....5b/3

insulating glass
see glass—insulating panel; glass—double glazing method

metal—insulated
(see also siding—sheet—insulated)
Air & Refrigeration Corp.....28o/1
Detroit Steel Products Co.....3c/3
Housermon, E. F., Co.....21o/2
Mahon, R. C., Co.....8c/7
Martin-Parry Corp. 21o/4
Mills Co.....21o/5

metal—partition or wainscoting
Detroit Steel Products Co.....3c/3
Housermon, E. F., Co.....21o/2
Kawneer Co. 6o/2
Mahon, R. C., Co.....3c/6; 8c/7
Martin-Parry Corp. 21o/4
Mills Co.....21o/5
Virginia Metal Products Corp.....21o/7
Sonymetal Products Co., Inc.....21b/6

metal—plywood backed
Mengel Co.....5b/3
United States Plywood Corp.....5b/3

metal—sidewall
Detroit Steel Products Co.....3c/3
Kawneer Co. 6o/2
Mahon, R. C., Co.....3c/6; 8c/7
Republic Steel Corp.....6c/5
Robertson, H. H., Co.....8c/11
Sonymetal Products Co., Inc.....21b/6

partition—x-ray protective
Bar-Ray Products, Inc.....21d/1
General Lead Construction Corp.....21d/3
Ray Proof Corp.....21d/2

panels cont.

plastic
Borclay Mfg. Co., Inc.....13i/1
Consolidated Water Power & Paper Co..13i/2
Farley & Loetscher Mfg. Co.....13i/3
Formica Insulation Co.....13i/4
General Electric Co.....13i/5
Marsh Wall Products, Inc.....13i/8
Raddis Plywood Corp.....15c/8
Rohm & Haas Co.....7d/1
United States Plywood Corp.....13i/13

plywood
(see also plywood)
Douglas Fir Plywood Assn.....5b/1
Farley & Loetscher Mfg. Co.....13i/3
Formica Insulation Co.....13i/4
Mengel Co. 5b/3
Raddis Plywood Corp.....15c/8
United States Plywood Corp.....5b/3
Veneer Association 5o/3

porcelain enameled
see sheet, strip, plate—vitreous or porcelain enameled

veneered—wood
Farley & Loetscher Mfg. Co.....13i/3
Formica Insulation Co.....13i/4
Marsh Wall Products, Inc.....13i/8
Mengel Co. 5b/3
Raddis Plywood Corp.....15c/8
United States Plywood Corp....5b/3; 13i/13
Veneer Association 5o/3

wood—natural
Western Pine Assn.....5o/4
Wood-Mosaic Co., Inc.....13g/9

panic bolts

see exit hardware—fire or panic

pans

bunker
see bunker pans

shower
(see also shower baths—receptors for)
Mitchell-Rand Mfg. Co.....8d/3
Wasco Flashing Co.....8d/6

paper and felts

building
American Asphalt Roof Corp.....8o/1
Angier Corp. 9c/1o
Armstrong Cork Co.....10b/1
Barrett Div. 8o/2
Bird & Son, Inc.....9c/1
Carey, Philip, Mfg. Co.....8a/3; 8b/2
Celotex Corp.....10o/4o
Cork Import Corp.....10b/2
Cork Insulation Co., Inc.....10b/3
Graham Paper Co.....9c/1b
Johns-Manville 8o/5
Kedmont Mfg. & Waterproofing Co...9a/10o
Kimberly-Clark Corp. 10o/13
Koppers Co., Inc.....8o/6
Ruberoid Co. 8o/7
Sisalkraft Co. 9c/2

paper and felts cont.

concrete curing and protection
Graham Paper Co.....9c/1b
Sisalkraft Co. 9c/2

condensation retardant
Angier Corp. 9c/1o
Bird & Son, Inc.....9c/1
Carey, Philip, Mfg. Co.....10o/4
Celotex Corp.....10o/4a
Graham Paper Co.....9c/1b
Kimberly-Clark Corp. 10a/13
Sisalkraft Co. 9c/2

parquetry

see flooring

partition systems

glass block
American Structural Products Co.....7c/1
Applemon Art Glass Works.....7c/2
Pittsburgh Corning Corp.....7c/3

interlocking steel
Detroit Steel Products Co.....3c/3
Mahon, R. C., Co.....3c/6
Virginia Metal Products Corp.....21o/7
Wheeling Corrugating Co.....12o/8

structural members and finish board
Celotex Corp.....10o/4a
Johns-Manville 21o/3

structural members and lath for plastering
Conver Steel & Wire Co.....3e/2
Goldsmith Metal Lath Co.....3b/4
Great Lakes Steel Corp.....3d/4
Inland Steel Products Co.....12o/3
National Gypsum Co.....12b/2
Penn Metal Co., Inc.....12o/5
Pittsburgh Steel Products Co.....12o/6
PArete Mfg. Co.....3c/19
Truscon Steel Co.....3d/9
United States Gypsum Co.....12b/3
Wheeling Corrugating Co.....12o/8

structural members and plaster board for plastering
Celotex Corp.....10o/4o
Macomber Inc. 3d/8
United States Gypsum Co.....12b/3

partitions

(see also tile; panels)

blackboard combination
Fairhurst, John T., Co.....21c/1
Housermon, E. F., Co.....21o/2
Horn Brothers Co.....21c/1o

cubicle—hospital
see cubicles—hospital

fire retardant
Detroit Steel Products Co.....3c/3
Housermon, E. F., Co.....21o/2
Johns-Manville 21o/3
Mahon, R. C., Co.....3c/6
Martin-Parry Corp. 21o/4
Mills Co.....21o/5
Truscon Steel Co.....3d/9
United States Gypsum Co.....12b/3
Virginia Metal Products Corp.....21a/7

partitions cont.

folding—fabric covered
New Costle Products.....15o/13
Richords-Wilcox Mfg. Co.....21c/2

folding—mechonicolly operoted
Horn Brothers Co.....21c/1o
New Costle Products.....15o/13
Richords-Wilcox Mfg. Co.....21c/2

folding—wood
Foirhurst, John T., Co.....21c/1
Horn Brothers Co.....21c/1o
Richords-Wilcox Mfg. Co.....21c/2

gloss or plostic—corrugoted, flot, potterned, wire, etc.
(see olso portition systems—gloss block)
Libbey-Owens-Ford Gloss Co.....7o/2
Mississippi Gloss Co.....7o/3
Pennsylvonio Wire Glass Co.....19o/4
Pittsburgh Plote Gloss Co.....7o/4
Richords, J. Merrill.....7o/4o
Rohm & Hoos Co.....7d/1
Southwestern Sheet Gloss Co.....7o/5

gypsum—wollboord
Notionol Gypsum Co.....12b/2
United Stotes Gypsum Co.....12b/3

hollow metol
All Metol Portition Co., Inc.....21b/1
Americon Sonitory Portition Co..21o/1; 21b/2
Art Metol Construction Co.....15o/4
Housermon, E. F., Co.....21o/2
Mortin-Porry Corp. 21o/4
Mills Co.....21o/5
Notionol Steel Portition Co., Inc.....21o/6
Virginio Metol Products Corp.....21o/7

interchongeoble—osbestos-cement
Housermon, E. F., Co.....21o/2
Johns-Monville 21o/3

interchongeoble—metol
All Metol Portition Co., Inc.....21b/1
Americon Sonitory Portition Co.....21o/1
Art Metol Construction Co.....15o/4
Housermon, E. F., Co.....21o/2
Mortin-Porry Corp. 21o/4
Mills Co.....21o/5
Notionol Steel Portition Co., Inc.....21o/6
Virginio Metol Products Corp.....21o/7
Western Wire & Iron Works, Inc.....21f/2

interchongeoble—open mesh
see portitions—open mesh

joil
see joil equipment

office
Acorn Wire & Iron Works.....21f/1
All Metol Portition Co., Inc.....21b/1
Americon Sonitory Portition Co.....21o/1
Art Metol Construction Co.....15o/4
Housermon, E. F., Co.....21o/2
Johns-Monville 21o/3
Mortin-Porry Corp. 21o/4
Mills Co.....21o/5
Notionol Steel Portition Co., Inc.....21o/6
Virginio Metol Products Corp.....21o/7
Wotson Mfg. Co., Inc.....22o/11
Western Wire & Iron Works, Inc.....21f/2

partitions cont.

open mesh
Acorn Wire & Iron Works.....21f/1
Cyclone Fence Div.....21g/2
Housermon, E. F., Co.....21o/2
Mills Co.....21o/5
Poge Fence Assn.....21g/3
Wotson Mfg. Co., Inc.....22o/11
Western Wire & Iron Works, Inc.....21f/2

rolling
see doors—rolling

sound retordont
Americon Sonitory Portition Co.....21o/1
Art Metol Construction Co.....15o/4
Detroit Steel Products Co.....3c/3
Douglos Fir Plywood Assn.....5b/1
Foirhurst, John T., Co.....21c/1
Housermon, E. F., Co.....21o/2
Horn Brothers Co.....21c/1o
Johns-Monville 11o/5; 21o/3
Mohon, R. C., Co.....3c/6
Mortin-Porry Corp. 21o/4
Mills Co.....21o/5; 21b/4
Notionol Steel Portitian Co., Inc.....21o/6
POrete Mfg. Co.....3c/19
Richords-Wilcox Mfg. Co.....21c/2
Sonymetol Products Co., Inc.....21b/6
Truscon Steel Co.....3d/9
Virginio Metol Products Corp.....21o/7

steel plate
Detroit Steel Products Co.....3c/3
Mohon, R. C., Co.....3c/6
Western Wire & Iron Works, Inc.....21f/2

terrozzo
see terrozzo—precost

toilet, shower, etc.—osbestos-cement
Johns-Monville 21o/3

toilet, shower, etc.—gloss
Ketchom, G. M., Mfg. Corp.....24c/11
Libbey-Owens-Ford Gloss Co.....13b/11
Pittsburgh Plote Gloss Co.....13b/12

toilet, shower, etc.—metol
All Metol Portition Co., Inc.....21b/1
Americon Sonitory Portition Co.....21b/2
Fiot Metol Mfg. Co.....21b/3
Housermon, E. F., Co.....21o/2
Mills Co. 21b/4
Milwoukee Stamping Co.....21b/5
Sonymetol Products Co., Inc.....21b/6
Weis, Henry, Mfg. Co., Inc.....21b/7
Western Wire & Iron Works, Inc.....21f/2

toilet, shower, etc.—plostic
Formico Insulotion Co.....13i/4
Rohm & Hoas Co.....7d/1

toilet, shower, etc.—slote
Structurol Slote Co.....4o/17

wire
see portitions—open mesh

x-ray protective
Bor-Roy Products, Inc.....21d/1
Generol Leod Construction Corp.....21d/3
Roy Proof Corp.....21d/2

paving

flogstone
see flogging

granite
see blocks—gronite

roodway—moteriol for
Borrett Div. 8o/2

wood block
see flooring—wood

pedestals

see metol—ornomentol; flogpoles—bases for

perforated metal

concrete reinforcement
see loth—exponded or perforoted metol

grilles
see grilles

loth
see loth—exponded or perforoted metol

photoelectric devices

(see olso operotors—door)
General Electric Co.....29o/4

pigments

see point—pigments

piles or piling

Armco Droinoge & Metol Products, Inc...2b/1
Drilled-In Coisson Corp.....2o/1
MocArthur Concrete Pile Corp.....2o/2
Roymond Concrete Pile Co.....2o/3
Republic Creosoting Co.....5d/6
Union Metol Mfg. Co.....2b/2
Western Foundotion Co.....2o/5

protection for
Mony, B. J., Co., Inc.....1b/5

sheet
Inlond Steel Co.....6c/4

piling contractors and engineers for

(see olso coisson contractors; foundotion contractors)

composite—wood and concrete piles
MocArthur Concrete Pile Corp.....2o/2
Roymond Concrete Pile Co.....2o/3
Western Foundotion Co.....2o/5

concrete piles
MocArthur Concrete Pile Corp.....2o/2
Roymond Concrete Pile Co.....2o/3
Western Foundotion Co.....2o/5

piling protection
Mony, B. J., Co., Inc.....1b/5

pipe—concrete filled piles
Drilled-In Coisson Corp.....2o/1
MocArthur Concrete Pile Corp.....2o/2
Roymond Concrete Pile Co.....2o/3
Spencer, White & Prentis, Inc.....2o/4
Western Foundotion Co.....2o/5

pipe

(see also tubing)

aluminum or aluminum alloy
Aluminum Co. of America.....6a/1

asbestos-cement
Johns-Manville 8a/5

brass or copper
American Brass Co.....26a/1
Chase Brass & Copper Co., Inc.....26a/2
Mueller Brass Co.....26a/7
Revere Copper & Brass Inc.....26a/5

coils
see *coils—pipe*

conductor
Chase Brass & Copper Co., Inc.....8c/4
Nichols Wire & Aluminum Co.....8c/7a
Republic Steel Corp.....6c/5
Revere Copper & Brass Inc.....8c/9
Sharon Steel Corp.....8d/5
United States Steel.....6c/6

conductor—fittings for
Chase Brass & Copper Co., Inc.....8c/4
Contractors Foundry 6h/1
Fiske, J. W., Iron Works.....6e/6
Levaw, David 8d/2
Republic Steel Corp.....6c/5
Revere Copper & Brass Inc.....8c/9
Sharon Steel Corp.....8d/5

copper
see *pipe—brass or copper*

corrosion or rust resistant
American Brass Co.....26a/1
Chase Brass & Copper Co., Inc.....26a/2
Duriron Co., Inc.....26b/2
Knight, Maurice A. 26b/3
Mueller Brass Co.....26a/7
Republic Steel Corp.....26a/4
Revere Copper & Brass Inc.....26a/5
Robinson Clay Product Co.....26a/6

corrugated
Penn Metal Corp. of Penna.....22c/6

drain—joint wrapping
Hahmann & Barnard, Inc.....3f/3

drainage
Chase Brass & Copper Co., Inc.....26a/2
Duriron Co., Inc. 26b/2
Knight, Maurice A.....26b/3
Mueller Brass Co.....26a/7
Penn Metal Corp. of Penna.....22c/6
Revere Copper & Brass Inc.....26a/5
Robinson Clay Product Co.....26a/6

fittings
see *fittings—pipe*

floor and ceiling plates
see *plates—floor*

foundation
see *piles*

hangers
see *hangers—pipe*

insulation
see *insulation*

joints—expansion
see *joints—expansion*

pipe cont.

prefabricated systems
see *piping—prefabricated*

railings
see *railings—pipe*

steel—copper bearing
Penn Metal Corp. of Penna.....22c/6

steel or stainless steel
Allegheny Ludlum Steel Corp.....6c/1
Bethlehem Steel Co.....3d/2
Laclede Steel Co.....3d/5
Republic Steel Corp.....26a/4

supports for
see *hangers—pipe*

underground or overhead systems—insulated
Ric-wil Co. 10d/1

ventilating—acid resistant
Knight, Maurice A. 26b/3

welded
Allegheny Ludlum Steel Corp.....6c/1
Bethlehem Steel Co.....3d/2
Laclede Steel Co.....3d/5
Republic Steel Corp.....26a/4

piping

contractors and engineers
International Chimney Corp.....28g/4

prefabricated
Ric-wil Co. 10d/1
Vulcan Rail & Construction Co.....6h/3

systems—oxygen
Ohio Chemical & Mfg. Co.....22g/2a

pitch

American Asphalt Roof Corp.....8a/1
Barrett Div. 8a/2
Carey, Philip, Mfg. Co.....8a/3; 8b/2
Flintkote Co. 8a/4
Johns-Manville 8a/5
Kappers Co., Inc. 8a/6
Rubberoid Co. 8a/7

planks

see floor construction; roof construction; lumber; wallboard

planning service

see specific type as: hospital—equipment; laboratory equipment; library equipment; washroom accessories—advisory service; x-ray; etc.

plaques

see tablets

plaster

acoustical
American Acoustics, Inc.....11a/1
Guastavino, R., Co.....3b/8
Kelley Island Lime & Transport Co.....11a/6
National Gypsum Co.....11a/7
Tuckahoe Stucco Corp.....4e/7
United States Gypsum Co.....11a/12; 12b/3
Zonolite Co. 10a/21

plaster cont.

bases
see *lath; tile*

blocks
see *tile*

board
see *lath; wallboard*

bond
Anti-Hydro Waterproofing Co.....9a/2
Barrett Div. 8a/2
Celotex Corp.....12b/1b
Ceresit Waterproofing Corp.....9a/6
Goldsmith Metal Lath Co.....3b/4
Minwax Co., Inc.....9a/14
National Gypsum Co.....12b/2
Sonneborn, L., Sons, Inc.....9a/17
Spraya-Flake Co.....10a/18
Standard Dry Wall Products Inc.....9a/18
Tremco Mfg. Co.....7b/3
Tuckahoe Stucco Corp.....4e/7
United States Gypsum Co.....12b/3

casting and moulding
Celotex Corp.....12b/1b
Guastavino, R., Co.....3b/8
National Gypsum Co.....12b/2
United States Gypsum Co.....12b/3

cement—portland
see cement—portland; stucco—portland cement

fibered
Celotex Corp.....12b/1b
National Gypsum Co.....12b/2
United States Gypsum Co.....12b/3

finishing
see plaster—gypsum; plaster—lime; plaster—keene's cement

finishing—colored
National Gypsum Co.....12b/2
Tuckahoe Stucco Corp.....4e/7
United States Gypsum Co.....12b/3

gauging
Celotex Corp.....12b/1b
National Gypsum Co.....12b/2
United States Gypsum Co.....12b/3

gypsum
Celotex Corp.....10a/4a; 12b/1b
National Gypsum Co.....12b/2
United States Gypsum Co.....12b/3

gypsum—patching
see plaster—patching

insulating
American Acoustics, Inc.....11a/1
Zonolite Co. 10a/21

keene's cement
Celotex Corp.....12b/1b
National Gypsum Co.....12b/2
United States Gypsum Co.....12b/3

lime—finishing
Celotex Corp.....12b/1b
Finishing Lime Assn. of Ohio.....12b/1
Kelley Island Lime & Transport Co...11a/6
National Gypsum Co.....12b/2
United States Gypsum Co.....12b/3

moulding
see plaster—casting and moulding

products

plaster cont.

patching
National Gypsum Co.....12b/2
United States Gypsum Co.....14/22

sand finish
see plaster—gypsum; plaster—lime

sound absorbing
see plaster—acoustical

texturing
Kelley Island Lime & Transport Co...11o/6
National Gypsum Co.....12b/2
Tuckahoe Stucco Corp.....4e/7
United States Gypsum Co.....12b/3

vermiculite
United States Gypsum Co.....12b/3
Zonolite Co. 10a/21

waterproofing
see waterproofing—paint and compounds

wood fibered
see plaster—fibered

x-ray protective
Bar-Ray Products, Inc.....21d/1

plastic materials

acrylic
Rohm & Haas Co.....7d/1

acrylic—molding compounds
Rohm & Haas Co.....7d/1

laminated
Consolidated Water Power & Paper Co..13i/2
General Electric Co.....13i/5
Raddis Plywood Corp.....15c/8

polystyrene—molding compounds
Rohm & Haas Co.....7d/1

plates

door—kick or push
Anco Mfg. Co., Inc.....20/2
Ellisan Bronze Co., Inc.....15a/10
Formica Insulation Co.....13i/4
Illinois Bronze Works.....6e/8
International Steel Co. 15d/2
Lockwood Hardware Mfg. Co.....17b/3
Newman Brothers, Inc.....6e/10
Richmond Fireproof Door Co.....15a/17

electric switch and outlet receptacle
Bryant Electric Co.....29c/1
General Electric Co.....29b/1
Hart & Hegeman Div.....29c/2
McDonald Mfg. Co.....29c/3
Metal Tile Products, Inc.....13b/7
Spero Electric Corp.....30a/16

floor
Allen, W. D., Mfg. Co.....27c/1
American Abrasive Metals Co.....13a/9
American Mason Safety Tread Co.....13a/10
Drehmann Paving & Flooring Co.....13c/8
Hendrick Mfg. Co.....28b/21
Inland Steel Co.....6c/4
Robinson Clay Product Co.....26a/6
Wooster Products, Inc.....13a/12

hot
see kitchen equipment

plates cont.

illuminating glass
see glassware—illuminating

name
see metal—ornamental; tablets

stair
see treads

wall
Cleveland Steel Specialty Co., Inc.....3f/1
Duplex Hanger Co.....3f/2
Great Lakes Steel Corp.....3d/4
McDonald Mfg. Co.....29c/3

platforms—loading

protection for
Flockhart Foundry Co.....6h/2

plugs

for concrete, brick, etc.
Conver Steel & Wire Co.....3e/2
Donley Brothers Co.....2Bg/5
Hohmann & Bornard, Inc.....3f/3
Rowlplug Co., Inc.....3f/4

plywood

(see also wallboard—plywood; panels—plywood)
Douglas Fir Plywood Assn.....5b/1
Mengel Co. 5b/3
Protexol Corp. 5d/5
Raddis Plywood Corp.....15c/8
United States Plywood Corp.....5b/3
Veneer Association 5a/3

glue for
see adhesives

metal faced
see panels—metal—plywood backed

pneumatic tube systems

see tube systems—pneumatic

pointing cement

see cement—grouting or pointing; caulking—compounds

poles

clothes line
Donley Brothers Co.....2Bg/5
Hohmann & Bornard, Inc.....3f/3

flag
see flagpoles

sliding
McIntire, F. N., Brass Works.....22h/7

polish

see cleaners and polishes; finishes; wax

polishing machines

Hillyard Sales Cos.....13h/1
Masury-Young Co. 13h/2

pools

supply and overflow
Fiske, J. W., Iron Works.....6e/6

swimming
see swimming pool

porcelain enamel

see sheet, strip, plate—vitreous or porcelain enameled

portland cement

see cement—portland

posts

boundary
see markers

caps and bases for
see caps and bases

fence
see fencing

wood—creosoted
see preservatives—wood; lumber

power plant contractors

Bornes, James I., Construction Co.....1a/1
Eichleay Engineering Corp.....1b/2
International Chimney Corp.....28g/4
O'Conner, Thomas, & Co., Inc.....1a/4
Terminal Construction Corp.....1o/5

power plants

standby—electric
Onan, D. W., & Sons, Inc.....29a/7

power units

electrical and mechanical
Westinghouse Electric Corp.....28b/4

precast

terrazzo
see terrazzo

precipitators

see filters—electronic; collecting systems—dust

prefabricated buildings

see buildings—prefabricated

preservatives

canvas or fabric
see canvas—cement and preservatives

floor
see oil—floor finishing; hardeners and densifiers

masonry
see paint—brick, cement, etc.; waterproofing

metal
see paint—metal protective

preservatives cont.

shingle
see stains—shingle

wood—decay or termite preventive
American Lumber & Treating Co.....5d/1
Barrett Div. 8o/2
Bruce, E. L., Co.....13g/2
Cabot, Samuel, Inc.....14/1
Celcure Wood Preserving Corp.....5d/2
Cuprinol Div. 5d/3
du Pont de Nemours, E. I., & Co., (Inc.).5d/4
Haynes Products Co.....9o/9
Koppers Co., Inc. 5d/4a
Protexol Corp. 5d/5
Republic Creosoting Co. 5d/6
Sonneborn, L., Sons, Inc.....9o/17
Wood Treating Chemicals Co.....5d/7

wood—fire retardant
American Lumber & Treating Co.....5d/1
Celcure Wood Preserving Corp.....5d/2
du Pont de Nemours, E. I., & Co., (Inc.).5d/4
Koppers Co., Inc.....5d/4o
Protexol Corp. 5d/5
Republic Creosoting Co.....5d/6

wood floor
Barrett Div. 8o/2
Breinig Brothers, Inc.....14/1o
Bruce, E. L., Co. 13g/2
Glidden Co. 14/6
Hillyard Soles Cos.....13h/1
Horn, A. C., Co., Inc.....9a/10
Jennison-Wright Corp. 13g/5
Kedmont Mfg. & Waterproofing Co..9o/10a
Masury-Young Co. 13h/2
Minwax Co., Inc.....14/9
O'Brien Corp.....14/12
Pittsburgh Plate Glass Co.....14/15
Pratt & Lambert-Inc. 14/16
Rust-Oleum Corp. 14/19
Sherwin-Williams Co. 14/19o
Sonneborn, L., Sons, Inc.....9o/17
Toch Brothers Inc.....9o/19
Tremco Mfg. Co.....7b/3
Truscon Laboratories.....14/20

pressure chambers

altitude
York Corp. 28o/11

primers

see fillers—concrete; paint; sealers; etc.

prison equipment

see jail equipment

program clocks

see clocks and clock systems

public address systems

Executone, Inc. 31b/4
Stramberg-Carlson Co.....31b/5o
Webster Electric Co.....31b/6

pulleys

sash
Cleveland Lock Works.....17o/2
Grand Rapids Hardware Co.....17a/3

pumice

see aggregates—pumice

pumps

bilge
Yeomans Bros. Co.....27d/3

boiler feed
see specific type of pump

booster
see specific type of pump

centrifugal
Aurora Pump Co.....27d/1
Bell & Gossett Co.....28c/1
Myers, F. E., & Bro. Co.....27d/2
Worthington Pump & Machinery Corp..28o/10
Yeomans Bros. Co.....27d/3

circulating
see heating systems—hot water—circulators for

condensate
Aurora Pump Co.....27d/1
Dunham, C. A., Co.....28c/2
Hoffman Specialty Co.....28c/3
Worthington Pump & Machinery Corp..28a/10
Yeomans Bros. Co.....27d/3

deep well
Aurora Pump Co.....27d/1
Myers, F. E., & Bro. Co.....27d/2
Worthington Pump & Machinery Corp..28a/10

oil
Petroleum Heat & Power Co.....28f/6

sewage
(see also ejectors—sewage; pumps—bilge)
Aurora Pump Co.....27d/1
Yeomans Bros. Co.....27d/3

shallow well
Myers, F. E., & Bro. Co.....27d/2

sump
(see also pumps—bilge; ejectors—sewage)
Aurora Pump Co.....27d/1
Myers, F. E., & Bro. Co.....27d/2
Yeomans Bros. Co.....27d/3

turbine
Aurora Pump Co.....27d/1
Worthington Pump & Machinery Corp..28o/10

vacuum
Dunham, C. A., Co.....28c/2
Hoffman Specialty Co.....28c/3
Yeomans Bros. Co.....27d/3

water supply
see water—supply systems

push buttons

bell, buzzer, etc.
Lockwood Hardware Mfg. Co.....17b/3
Schlage Lock Co. 17b/4

putty

Cork Insulation Co., Inc.....10b/3
Pecora Paint Co., Inc.....7b/2
United States Gypsum Co.....14/22

q

quartzite

(see also sandstone)
Crab Orchard Stone Co., Inc.....4o/14
Tennessee Stone Co., Inc.....4a/18

r

raceway

see conduit—electrical—metal moulding or raceway; floor construction—cellular beam and electrical duct system; electrical underfloor distribution systems

racks

barrel storage
Market Forge Co.....22b/6

basket
All-Steel Equipment Inc.....22c/1
Berger Mfg. Div.....22c/2
Lyon Metal Products, Inc.....22c/4
Medart, Fred, Mfg. Co.....22c/5
Penn Metal Corp. of Penna.....22c/6

check room
see checkroom equipment

coat and hat
see racks—garment

fire hose
see fire—hose, hose racks and reels

garment
Knape & Vogt Mfg. Co.....17b/13
Market Forge Co.....22b/6
Penn Metal Corp. of Penna.....22c/6
Vogel-Peterson Co. 22c/9

luggage
see checkroom equipment

magazine, newspaper, etc.
General Fireproofing Co.....22g/1
Remington Rand Inc.....22d/8

mortuary
see mortuary racks and trays

refrigerator or cold storage
see refrigerators—shelving for

rug
Market Forge Co.....22b/6

tie
Knape & Vogt Mfg. Co.....17b/13

towel
see bathroom accessories

umbrella, overshoe, etc.
Vogel-Peterson Co. 22c/9

radiant heating

see specific type heaters; heating systems

coils
see coils—pipe

products

radiators

baseboard type
Dunham, C. A., Co.....28c/2
Smith, H. B., Co., Inc.....28d/9
United States Radiator Corp.....28d/12
Vulcan Radiator Co. 28d/15
Webster, Warren, & Co.....28d/16
Wesix Electric Heater Co.....28e/11

concealed—steam or hot water
see convectors; heaters—unit

convector type
see convectors

covers and cabinets for
Formica Insulation Co.....13i/4
National Radiator Co.....28d/6
Smith, H. B. Co., Inc.....28d/9
Vulcan Radiator Co.....28d/15

grilles for
see grilles; radiators—covers and cabinets for

metering orifices for
Dunham, C. A., Co.....28c/2

steam or hot water
Dunham, C. A., Co.....28c/2
National Radiator Co.....28d/6
Shaw-Perkins Mfg. Co.....28d/14
Trane Co. 28a/8
United States Radiator Corp.....28d/12
Vulcan Radiator Co.....28d/15

traps for
see traps—radiator

valves for
see valves—radiator supply

radio

masts or poles
see masts—radio, etc.

outlets for antenna, ground, etc.
Bryant Electric Co.....29c/1
Hart & Hegeman Div.....29c/2

receivers
Hallicrafters Co. 31a/1

speakers
see public address systems; sound systems

wiring devices
see wiring devices—radio

radium protective materials

Bar-Ray Products, Inc.....21d/1
General Lead Construction Corp.....21d/3
Ray Proof Corp.....21d/2

rafters

see trusses

raggle blocks

see flashings—blocks, forms and receivers for

railings

metal
Aluminum Co. of America.....6a/1
American Brass Co.....6b/1
Art Metal Construction Co.....22a/10
Birmingham Ornamental Iron Co., Inc...6e/3
Blum, Julius, & Co., Inc.....6e/5
Chase Brass & Copper Co., Inc.....13c/1
Decatur Iron & Steel Co.....22h/1
Fiske, J. W., Iron Works.....6e/6
General Bronze Corp.....6e/7
Hauserman, E. F., Co.....21a/2
Illinois Bronze Works.....6e/8
Martin-Parry Corp. 21a/4
Mills Co.....21a/5
National Assn. of Ornamental Metal Mfrs.....6e/9a
National Steel Partition Co., Inc.....21a/6
Newman Brothers, Inc.....6e/10
Reliance Art Metal Co.....15a/16
Revere Copper & Brass Inc.....6b/2
Robberson Steel Co.....1b/6
Virginia Metal Products Corp.....21a/7
Vulcan Rail & Construction Co. 6h/3

panel
see partitions

pipe and fittings for
Aluminum Co. of America.....6a/1
Blum, Julius, & Co., Inc.....6e/5
Vulcan Rail & Construction Co.....6h/3

wire
see partitions—open mesh

wood
Carr, Adams & Collier Co.....5c/1
Colonial Lumber Specialties, Inc.....8b/6a

rails

chair
Inland Steel Products Co.....12a/3
Knapp Bros. Mfg. Co.....12a/4a
Wollaeger Steel Corp.....12a/9

display
see blackboards—display rails for

ramps

treads for
see treads—safety

ranges

domestic
Frigidaire Div. 23a/4a
General Electric Co.....23a/5
Hotpoint Inc. 23a/9
Westinghouse Electric Corp.....23a/20

receivers

garbage
Danley Brothers Co.....28g/5
Majestic Co. 28g/8

milk bottle and package
Danley Brothers Co.....28g/5
Hohmann & Barnard, Inc.....3f/3
Inland Steel Products Co.....12a/3

receptacles—electric

convenience outlet
Bryant Electric Co.....29c/1
BullDog Electric Products Co.....29a/2
General Electric Co.....29b/1
Hart & Hegeman Div.....29c/2
McDonald Mfg. Co.....29c/3
National Electric Products Corp.....29b/2

convenience outlet and switch combined
Bryant Electric Co.....29c/1
Hart & Hegeman Div.....29c/2

outlet box
Adam, Frank, Electric Co.....29a/1
Bryant Electric Co.....29c/1
BullDog Electric Products Co.....29a/2
Century Lighting Inc.....30a/4
General Electric Co.....29b/1
Hart & Hegeman Div.....29c/2

plug, fan hanger or electric clock combination
see boxes—electric clock or fan hanger outlet

plug, pilot lamp, night light, etc.
Bryant Electric Co.....29c/1
Hart & Hegeman Div.....29c/2

radio outlet
Bryant Electric Co.....29c/1
Hart & Hegeman Div.....29c/2

range and accessories
Bryant Electric Co.....29c/1
General Electric Co.....29b/1
Hart & Hegeman Div.....29c/2

socket
see sockets

receptors

shower
see shower baths

recorders

alarm
Autocall Co. 31b/1

temperature
see thermometers

time—watchman's
see watchman's tour systems

time and elapsed time
Autocall Co. 31b/1
International Business Machines Corp...31c/1
Self Winding Clock Co., Inc.....31c/2
Stromberg Time Corp.....31c/3

recreation equipment

Brunswick-Balke-Collender Co. 22f/7
International Business Machines Corp...31c/1

floor markers
see markers

rectifiers

General Electric Co.....29a/4

water
Filtrine Mfg. Co.....27a/16

reflectors or diffusers

(see also lighting fixtures)

floodlight
see floodlights

gasproof, voparproof, weotherproof, etc.
Spero Electric Corp.....30o/16
Westinghouse Electric Corp.....30o/19

industrial
All-Bright Electric Products Co.....30o/2
Century Lighting Inc.....30o/4
Curtis Lighting, Inc.....30o/5
Doy-Brite Lighting, Inc.....30o/6
Gothom Lighting Corp.....30o/11
Leoder Electric Co.....30o/13
Mitchell Mfg. Co.....30o/14
Pittsburgh Reflector Co.....30o/15
Spero Electric Corp.....30o/16
Sylvonio Electric Products Inc.....30o/17
Wokefield, F. W., Bross Co.....30o/18
Westinghouse Electric Corp.....30o/19

library
see library equipment

metol, porceloin, glass, piostic, etc.
All-Bright Electric Products Co.....30o/2
Century Lighting Inc.....30o/4
Curtis Lighting, Inc.....30o/5
Doy-Brite Lighting, Inc.....30o/6
Generol Lighting Co.....30o/9
Gothom Lighting Corp.....30o/11
Leoder Electric Co.....30o/13
Mitchell Mfg. Co.....30o/14
Pittsburgh Reflector Co.....30o/15
Spero Electric Corp.....30o/16
Sylvonio Electric Products Inc.....30o/17
Wokefield, F. W., Bross Co.....30o/18
Westinghouse Electric Corp.....30o/19

refractory

brick or biack
Acme Brick Co.....4d/1
Armstrong Cork Co.....10b/1
Elgin-Butler Brick Co.....4d/4
Hocking Volley Brick Co.....4d/7
Nationol Fireproofing Corp.....4d/8

cement or mortar
Acme Brick Co.....4d/1
Armstrong Cork Co.....10b/1

contractors
Cutsholl, J. M., & Sons.....28g/3
Internotionol Chimney Corp.....28g/4

refrigeration equipment

(see also specific item as: coils; compressors; condensers; freezer units; etc.)
Boker Ice Mochine Co., Inc.....28o/2o
Corrier Corp. 28o/3
Chrysler Corp. 28o/4
Generol Electric Co.....28o/6
Worthington Pump & Mochinery Corp..28o/10
York Corp. 28o/11

refrigerators

(see also freezer units)

biaad storage
Jewett Refrigerator Co., Inc.....22b/5

refrigerators *cont.*

cammerciol
Chrysler Corp. 28o/4
Frigidoire Div. 23o/4o
Generol Electric Co.....28o/6
Jewett Refrigerotor Co., Inc.....22b/5

damestic
Frigidoire Div. 23o/4o
General Electric Co.....23o/5
Hotpoint Inc. 23o/9
Westinghouse Electric Corp.....23o/20

doors far
see doors

frant wark far
Birkenwold, S., Co.....22b/1
Butcher Boy Cold Storoge Door Co.....22b/2

hame freezer
see freezer units

ice cube making
Frigidoire Div. 23o/4o
Jewett Refrigerotor Co., Inc.....22b/5

insuiatian far
see insulotion—cold storoge or refrigerotion

martuary
Jewett Refrigerotor Co., Inc.....22b/5

shelving for
Morket Forge Co.....22b/6

windows far
see windows—cold storoge or refrigerotor

registers

see dompers or registers; grilles; louvers

reglets

see floshings—blocks, forms ond receivers for

regulators

see controls

reinforcement

see coging; clips; concrete—reinforcement; etc.

relays

Generol Electric Co.....29o/4
Hart & Hegemon Div.....29c/2
Mercoid Corp.....28c/5

repair and restoration

buiidings, bridges, dams, reservairs, chimneys, etc.
American Incinerotor Corp.....25o/1
Consolidoted Chimney Co.....28g/1
Custodis, Alphons, Chimney Construction Co. 28g/2
Cutsholl, J. M., & Sons.....28g/3
Eichleoy Engineering Corp.....1b/2
Guoronteed Waterproofing Co.....1b/4
Internotionol Chimney Corp.....28g/4
Mony, B. J., Co., Inc.....1b/5
St. Louis Lightning Protection Co.....22i/5
Western Woterproofing Co.....9a/22
Western Woterproofing Cos.....9o/21

restaurant equipment

see cofeterio equipment

revolving doors

see doors—revolving

ridge rolls or strips

see roofing

rigging

cantroctors
Eichleoy Engineering Corp.....1b/2
Weiss, I., & Sons.....22e/2

stage
Vosconcellos, Joseph, Inc.....22e/1
Weiss, I., & Sons.....22e/2

rims

sink
see sinks—rims for

rings

curtain
see curtoins—metol rods ond hooks for

rock wool

see insulotion—building

rods and bars

aiuminum or aiuminum ailoy
Aluminum Co. of Americo.....6o/1

copper ar copper oiloy
American Bross Co.....6b/1

iightning
see lightning conductors

reinfarcing—concrete
see bors—reinforcing

steei or stoinless steei
Allegheny Ludlum Steel Corp.....6c/1
Republic Steel Corp.....6c/5

weiding
see electrodes—welding

rollers

awning
see ownings—rollers for

daar
see hardware

window shade
see shades—window—rollers for

rolls

pipe
see hangers—pipe

products

roof construction

acousticol
Detroit Steel Products Co.....3c/3
Durisol, Inc. 3c/13o
Flexicore Co., Inc.....3c/15
Mohon, R. C., Co.....3c/6
POrete Mfg. Co.....3c/19
Rockle, Geo., & Sons Co.....3c/21
Truscon Laborotories 3c/22
Woylite Co.....4e/10

orch
Arch Roof Construction Co., Inc.....3b/7
Guostovino, R., Co.....3b/8
Roberts & Schoefer Co.....3b/5
Timber Structures, Inc.....3b/9
Unit Structures, Inc.....3b/10

awning sockets for
see *ownings*

calcium silicate slab
Americon Structurol Products Co.....3c/23

concrete—metal forms
Ceco Steel Products Corp.....3b/1
Economy Form Corp.....3e/2o
Goldsmith Metol Loth Co.....3b/4

concrete or lightweight concrete—poured-in-place
Concrete Reinforcing Steel Institute....3b/3
Goldsmith Metol Loth Co.....3b/4
POrete Mfg. Co.....3c/19
Woylite Co.....4e/10
Zonolite Co. 10o/21

concrete slab—insulating
Cemenstone Corp. 3b/2
Durisol, Inc. 3c/13a
Flexicore Co., Inc.....3c/15
Mortin Fireproofing Corp.....3c/17
Precost Slob & Tile Co.....3c/20
Truscon Loborotories 3c/22

concrete slab—lightweight
Alabomo Cement Tile Co.....3c/12
Cemenstone Corp. 3b/2
Concrete Plonk Co., Inc.....3c/13
Durisol, Inc. 3c/13o
Federol Cement Tile Co.....3c/14
Flexicore Co., Inc.....3c/15
Lostik Products Co., Inc.....3c/16
Mortin Fireproofing Corp.....3c/17
Morse Cement Tile Co.....3c/18
POrete Mfg. Co.....3c/19
Precast Slob & Tile Co.....3c/20
Rockle, Geo., & Sons Co.....3c/21
Truscon Loborotories 3c/22
Woylite Co.....4e/10

concrete slab—nailing
Alobomo Cement Tile Co.....3c/12
Concrete Plonk Co., Inc.....3c/13
Durisol, Inc. 3c/13a
Federol Cement Tile Co.....3c/14
Lostik Products Co., Inc.....3c/16
Mortin Fireproofing Corp.....3c/17
Morse Cement Tile Co.....3c/18
POrete Mfg. Co.....3c/19
Precost Slob & Tile Co.....3c/20
Rockle, Geo., & Sons Co.....3c/21
Truscon Loborotories 3c/22
Woylite Co.....4e/10

roof construction cont.

concrete slob—precast—gloss insert
Federol Cement Tile Co.....3c/14
Lostik Products Co., Inc.....3c/16
Truscon Loborotories 3c/22

concrete slab—vermiculite
Truscon Loborotories 3c/22

contractors
Alobomo Cement Tile Co.....3c/12
Guostovino, R., Co.....3b/8
Lostik Products Co., Inc.....3c/16
Mortin Fireproofing Corp.....3c/17
Morse Cement Tile Co.....3c/18

dome—concrete reinforced
(see also dome construction)
Roberts & Schoefer Co.....3b/5

drains for
see *droins—roofs, gutter or promenode*

expansion joints for
see *joints—expansion—floor and roof drain*

glass block
Americon 3 Woy-Luxfer Prism Co.....19o/2
Richords, J. Merrill.....7o/4o; 19o/5

gypsum—poured-in-place
Mortin Fireproofing Corp.....3c/17
Notionol Gypsum Co.....3c/10
United Stotes Gypsum Co.....3c/11

gypsum slob—precost
United Stotes Gypsum Co.....3c/11

hatches and scuttles for
see *hotchwoys—roof*

insulation for
see *roofing—fabric, felt or paper; insulation—building*

lightweight slab
see *roof construction—concrete; roof construction—gypsum*

metal sheet—plain or insulated
Detroit Steel Products Co.....3c/3
Goldsmith Metol Loth Co.....3b/4
Mocomber Inc. 3d/8
Mohon, R. C., Co.....3c/6
Robertson, H. H., Co.....3c/8
Truscon Steel Co.....3d/9

nailing concrete
see *roof construction—concrete slab*

precost tile
see *roof construction—gypsum slab; roof construction—concrete slab*

skylights
see *skylights*

steel deck
Ceco Steel Products Corp.....3d/3
Detroit Steel Products Co.....3c/3
Goldsmith Metol Loth Co.....3b/4
Inlond Steel Products Co.....3c/5
Mocomber Inc. 3d/8
Mohon, R. C., Co.....3c/6
Robertson, H. H., Co.....3c/8
Truscon Steel Co.....3d/9
United Stotes Gypsum Co.....3c/11
Wheeling Corrugoting Co.....3c/9

roof construction cont.

steel truss and joist
Arch Roof Construction Co., Inc.....3b/7
Bethlehem Steel Co.....3d/2
Ceco Steel Products Corp.....3d/3
Great Lakes Steel Corp.....3d/4
Mocomber Inc. 3d/8
Truscon Steel Co.....3d/9

strainers for
see *strainers—roof*

sumps for
see *drains—roof, gutter or promenade*

tile
see *roof construction—gypsum slab; roof construction—concrete slab; roof construction—calcium silicate slab*

trusses for
see *trusses*

ventilators for
see *ventilators—roof*

roofing

aluminum
Aluminum Co. of Americo 6o/1
Nichols Wire & Aluminum Co.....8c/7o
Permonente Products Co.....6o/3

asbestos-cement
Asbestone Corp. 8c/2
Celotex Corp.....10o/4o
Johns-Manville 8o/5
Keasbey & Mattison Co.....8b/5

asbestos-cement—insulated
Corey, Philip, Mfg. Co.....8c/3
Johns-Manville 8o/5

built-up
Americon Asphalt Roof Corp.....8a/1
Barrett Div. 8o/2
Corey, Philip, Mfg. Co.....8o/3
Celotex Corp.....10o/4a
Flintkote Co. 8o/4
Johns-Manville 8o/5
Koppers Co., Inc.....8o/6
Ruberoid Co. 8o/7

built-up—cold process
Americon Asphalt Roof Corp.....8o/1
Corey, Philip, Mfg. Co.....8o/3
Flintkote Co. 8o/4

built-up—traffic surface for
Barrett Div. 8o/2
Johns-Manville 8o/5
Koppers Co., Inc.....8o/6
Ruberoid Co. 8o/7

canvas
see *canvas*

cement
see *cement—roofing*

coatings
Flintkote Co. 8o/4
Glidden Co. 14/6
Haynes Products Co.....9o/9
Pecoro Point Co., Inc.....7b/2
Stanhard Co. 13c/12

roofing cont.

contracters
Guoranteed Woterproofing Co.....1b/4

cepper
Americon 8rass Co.....8c/1
Chose 8ross & Copper Co., Inc.....8c/4
Revere Copper & Bross Inc.....8c/9

cerrugated—asbestos-cement, metel, protected metal
Americon Zinc Institute Inc.....6c/2
Asbestone Corp. 8c/2
Corey, Philip, Mfg. Co.....8c/3
Johns-Monville 8o/5
Keosbey & Mottison Co.....8b/5
Koppers Co., Inc.....8o/6
Nichols Wire & Aluminum Co. 8c/7o
Permonente Products Co.....6o/3
Republic Steel Corp.....6c/5
Robertson, H. H., Co. 8c/11

fabric, felt er peper
Americon Asphalt Roof Corp.....8o/1
Borrett Div. 8o/2
Corey, Philip, Mfg. Co.....8o/3; 8b/2
Flintkote Co. 8o/4
Graham Poper Co.....9c/1b
Johns-Monville 8o/5
Koppers Co., Inc.....8o/6
Lexington Supply Co.....9o/12
Ruberoid Co. 8o/7

galvenized
see roofing—steel or iron—plain, galvonized, etc.

giess
see gloss—corrugoted; skylights

iron—copper alloyed
Republic Steel Corp.....6c/5

lead coeted
Chose 8rass & Copper Co., Inc.....8c/4
Revere Copper & 8rass Inc.....8c/9

lights for
see skylights—corrugoted, flat or wire glass; lights—sidewalk, roof, etc.

meintenance material
Armstrong Cork Co.....10b/1
Flintkote Co. 8o/4
Kedmont Mfg. & Waterproofing Co....9o/10o
Pecora Point Co., Inc.....7b/2
Stonhard Co. 13c/12

peper
see roofing—fobric, felt or paper

repairing meteriel
see cement—roofing; cement—potching and resurfocing

roll—prepared
8ird & Sons, Inc. 8b/1
Corey, Philip, Mfg. Co.....8b/2
Celotex Corp.....10o/4o
Flintkote Co. 8b/3

roll—sheet metal
American 8ross Co. 8c/1
Bethlehem Steel Co.....3d/2
Fallansbee Steel Corp.....8c/5
Republic Steel Corp.....6c/5
Revere Copper & Brass Inc.....8c/9
United States Steel 6c/6

roofing cont.

seem and v-crimp
Aluminum Co. of America.....6o/1
Americon Zinc Institute Inc.....6c/2
8ethlehem Steel Co.....3d/2
Follansbee Steel Corp.....8c/5
Nichols Wire & Aluminum Co.....8c/7a
Permonente Products Co.....6a/3
Republic Steel Corp.....6c/5
Revere Copper & 8rass Inc.....8c/9

shingles
see shingles

slete
see shingles—slate

steel—asphelt or esbestes covered
Koppers Co., Inc.....8o/6
Robertson, H. H., Co.....8c/11

steel—copper alloyed
8ethlehem Steel Co.....3d/2
Republic Steel Corp.....6c/5

steel or iron—plein, galvanized, black or painted
American Zinc Institute Inc.....6c/2
Bethlehem Steel Co.....3d/2
Inlond Steel Co.....6c/4
Overly Mfg. Co.....8c/8
Republic Steel Corp.....6c/5

tar and gravel
see roofing—built-up

tile—asphelt
see shingles

tlie—cley or terra cotte
Ludowici-Celadon Co.....8b/8

tlle—concrete
see roof construction—concrete slob

tlle—querry er promenede
see tile—quorry or promenode

tin or terne plete
Follansbee Steel Corp.....8c/5

rot

dry and wet—preventives
see preservatives—wood

rugs and carpets

Mohawk Carpet Mills Inc.....13f/1

fastening devices fer
Roberts Co.....13f/2

rust

preventive
see paint—metal protective; point—rust inhibitive; woter—softeners ond treating equipment

S

saddles

(see olso thresholds)

roof
see roof construction

safes

night depesitory
Herring-Hall-Marvin Sofe Co.....22o/8

portable, wall, etc.
Herring-Holl-Morvin Sofe Co.....22o/8
Mosler Safe Co.....22a/9

sandblasting

contractors
Guaranteed Woterproofing Co.....1b/4
Western Woterproofing Cos.....9o/21

sandstone

(see also quortzite)

8rior Hill Stone Co.....4o/12
Clevelond Quorries Co.....4a/13

sanitary systems

see sewoge disposal systems

sash

(see olso hardwore; storm sosh; windows)

metal glazing
see store front construction

sidewall
see side walls—gloss; windows—continuous

sash lifts

see hardware—window

scales

bethroom
see bathroom accessories

overhead track—refrigeretor
see tracking systems—refrigerotor—meot storoge

school equipment

see blockboords; furniture; loboratory equipment; theotre equipment

screeds

bese—metal
Alaboma Metol Loth Co.....12o/1
Goldsmith Metol Loth Co.....3b/4
Inlond Steel Products Co.....12o/3
Knopp 8ros. Mfg. Co.....12o/4a
Notionol Gypsum Co.....12b/2
Penn Metol Co., Inc.....12o/5
Truscon Steel Co.....3d/9
United Stotes Gypsum Co.....12b/3
Wheeling Corrugoting Co.....12o/8

screen cloth

Austrol Soles Corp.....18o/1
8urrowes Corp. 18a/2
Ceco Steel Products Corp.....18o/3
Chomberlin Co. of America.....18o/4
Chase 8ross & Copper Co., Inc.....18a/5
Chicopee Mfg. Corp.....18o/8
Firestone Plostics Co.....18o/9

products

screens

air conditioning
see *grilles*

bank or counter
Acarn Wire & Iron Works.....21f/1
Art Metal Construction Co.....22o/10
Generol Branze Carp.....6e/7
Hausermon, E. F., Ca.....21a/2
Virginia Metal Products Carp.....21o/7
Watsan Mfg. Ca., Inc.....22a/11
Western Wire & Iron Works, Inc.....21f/2

cloth for
see *wire—cloth; screen cloth*

detention window
Austral Sales Corp.....18a/1
Ceco Steel Products Carp.....18a/3
Chamberlin Ca. of America.....18a/4
Detroit Steel Products Co.....16a/13
Mesker Bras.....16a/22

fireplace
see *fireplace—accessories*

hospital ward
see *cubicles*

insect—metal frame
A. B. C. Steel Equipment Co., Inc.....16a/1
Adams & Westlake Ca.....16o/2
Alsco, Inc. 18a/1a
Aluminum Windaw Corp.....16a/2b
Austral Sales Corp.....18a/1
Bayley, William, Co.....16o/5
Bliss Steel Products Corp.....16a/6
Burrowes Corp. 18o/2
Carr, Adams & Callier Ca.....5c/1
Ceca Steel Products Corp.....16a/7; 18a/3
Chamberlin Co. af America.....18o/4
Crittall-Federal, Inc.....16a/9
Craft Steel Products, Inc.....16a/10
Cupples Products Carp.....16a/11
Detroit Steel Products Ca.....16o/13
Donley Brothers Ca.....28g/5
Flynn, Michael, Mfg. Co.....16a/16
Gaadcraft Metal Products Co.....16a/19
Hope's Windaws Inc.....16a/20
Kane Mfg. Corp. 18a/6
Koufmonn Corp. 16o/21
Mormet Corp. 7c/5
Mesker Bras.....16o/22
Notianol Firewarks, Inc.....16a/23
Reynalds Metals Co.....16a/25a
Russell, F. C., Ca.....18o/7
Steelcraft Mfg. Co.....16o/28
Sunlight Metal Products Co.....16a/31
Tharn, J. S., Ca.....16o/32
Truscon Steel Ca.....16a/34
Universal Carp. 16o/36
VentiLite Carp.....16a/37a
Ware Labaratories, Inc.....16a/38
Willioms & Williams Products Corp....16o/39

insect—pivoted window
Bayley, William, Co.....16a/5
Burrowes Corp. 18a/2
Ceco Steel Products Carp.....16a/7; 18a/3
Kane Mfg. Carp.....18a/6
Mesker Bras.....16a/22

insect—projected in or out window
Bayley, William, Ca.....16a/4; 16a/5
Ceca Steel Products Carp.....16a/7; 18a/3
Crittoll-Federol, Inc.....16a/9

screens *cont.*

insect—projected in or out window *cont.*
Detroit Steel Products Co.....16a/13
Flynn, Michoel, Mfg. Co.....16o/16
Kane Mfg. Corp.....18a/6
Mesker Bras.....16a/22
Truscan Steel Ca.....16o/34

insect—rolling
Burrawes Corp. 18a/2
Kane Mfg. Carp.....18a/6
Rolscreen Co. 16b/6

insect—wood frame
Burrawes Carp. 18a/2
Kane Mfg. Corp. 18a/6

storm sash combination
see *windows—combination*

wire enclosure
see *partitions—apen mesh; screens—insect—metal frame*

scrubbing machines

Hillyard Soles Cos.....13h/1
Mosury-Young Co. 13h/2

scuppers

wall
Sargent Building Speciolties Inc.....25o/4

scuttles

roof
see *hatchways—roof*

sealers

(see alsa fillers; point; etc.)
Acme Asbestos Covering & Flooring Ca..13c/6
Aquabar Ca. 9a/3
Armstrang Cork Co.....10b/1
Breinig Brothers, Inc.....14/1a
Bruce, E. L., Co.....13g/2
Cobot, Samuel, Inc.....14/1
Ceresit Waterpraafing Carp.....9a/6
Devoe & Raynolds Ca., Inc.....14/2
du Pont de Nemours, E. I., & Co., (Inc.).14/3
Eagle-Picher Ca.....14/4
Empire Varnish Co.....14/5
Glidden Co. 14/6
Hillyard Sales Cos.....13h/1
Harn, A. C., Ca., Inc.....9a/10
Jennison-Wright Corp. 13g/5
Kedmont Mfg. & Waterproofing Ca...9a/10o
Keystane Varnish Ca.....14/7
Kuhls, H. 8. Fred.....9a/11
Masury-Yaung Ca. 13h/2
Minwax Ca., Inc.....14/9
O'Brien Corp.....14/12
Porogan Paint & Vornish Corp.....14/13
Patterson-Sargent Ca. 14/14
Pittsburgh Plate Gloss Ca.....14/15
Pratt & Lambert-Inc.....14/16
Raberts Paint Corp.....14/17
Rust-Oleum Carp. 14/19
Sherwin-Williams Co. 14/19o
Sannebarn, L., Sons, Inc.....9o/17
Standard Varnish Works.....14/19b
Stanhard Ca. 13c/12
Starm Flooring Co., Inc.....13g/8

sealers *cont.*

Tach Brathers Inc.....9o/19
Tremco Mfg. Co.....7b/3
Truscan Labarotaries 9a/20; 14/20
Tuckahae Stucca Corp.....4e/7
U. S. Gutta Percha Paint Co.....14/21
United Stotes Gypsum Ca.....14/22
Wesca Waterpaints, Inc.....14/23
Wilbur & Willioms Ca.....14/24

sill
Wood Conversion Co.....10a/20

sealing compounds

Aquobar Ca. 9a/3
Armstrang Cork Ca.....10b/1
Ceresit Waterpraofing Corp.....9a/6
Cork Import Carp.....10b/2
Haynes Products Ca.....9a/9
Harn, A. C., Co., Inc.....9o/10
Koppers Ca., Inc.....8o/6
Master Builders Co.....9o/13
Masury-Young Ca.....13h/2
Primo Products Inc.....9o/15
Rust-Oleum Corp.....14/19
Sika Chemical Corp.....9a/16

seats

auditorium
American Seating Ca.....22d/7
Vosconcellas, Joseph, Inc.....22e/1

classroom
see *furniture*

stadium
see *bleachers; grandstands*

water closet
see *toilet—seats*

selsyn devices

Generol Electric Ca.....29o/4

separators

gas, grease, plaster or refuse
see *interceptors*

reinforcing steel
see *clips*

septic tanks

Donley Brothers Co.....28g/5
Kaustine Ca., Inc.....27f/1
Rheem Mfg. Co.....27a/8
Robinson Cloy Product Co.....26o/6

sewage disposal systems

(see alsa ejectars—sewage)
Kaustine Co., Inc.....27f/1
Robinsan Clay Praduct Ca.....26o/6
Yeomans Bras. Co.....27d/3

sewage purification apparatus

see *ammania cantral apparatus; chlorine contral apparatus; ejectars—sewage; feeders; filters; sewage dispasal systems*

sewerage and drainage contractors

Terminol Construction Corp.....1o/5

shades

fireproof
Athey Shode Co.....18d/5
Hortshorn, Stewart, Co.....18d/7
Joanno-Western Mills Co.....18d/7o
Rowles, E. W. A., Co.....18d/8

lightproof
Athey Shode Co.....18d/5
8or-Roy Products, Inc.....21d/1
Beckley-Cordy Co.....22d/1
Columbio Mills, Inc.....18d/1
du Pont de Nemours, E. I., & Co., (Inc.).18d/6
Generol Leod Construction Corp.....21d/3
Hartshorn, Stewart, Co.....18d/7
Joonno-Western Mills Co.....18d/7o
Kone Mfg. Corp.....18a/6
Roy Proof Corp.....21d/2
Rowles, E. W. A., Co.....18d/8

window—brackets for
Beckley-Cordy Co.....22d/1
Columbio Mills, Inc.....18d/1
Hortshorn, Stewart, Co.....18d/7
Joonno-Western Mills Co.....18d/7o

window—cloth or fabric for
Athey Shode Co.....18d/5
Beckley-Cordy Co.....22d/1
Columbia Mills, Inc.....18d/1
du Pont de Nemours, E. I., & Co., (Inc.).18d/6
Hartshorn, Stewart, Co.....18d/7
Joonno-Western Mills Co.....18d/7o
Kone Mfg. Co.....18o/6
Rowles, E. W. A., Co.....18d/8

window—pleated—adjustable
Athey Shade Co.....18d/5

window—rollers for
8eckley-Cordy Co.....22d/1
Columbio Mills, Inc.....18d/1
Hortshorn, Stewart, Co.....18d/7
Joonno-Western Mills Co.....18d/7o

window or skylight—ventilating
Hortshorn, Stewort, Co.....18d/7
Rowles, E. W. A., Co.....18d/8

window or skylight—ventilating—slat or wood fabric
Hough Shode Corp.....18d/2

shakes

see *shingles*

shapes

concrete—structural
Cemenstone Corp.....3b/2

furring
see *furring and studding*

metal—extruded
Alumiline Corp.....20/1
Aluminum Co. of Americo.....6o/1
Americon 8ross Co.....6b/1
Anco Mfg. Co., Inc.....20/2

shapes *cont.*

metal—extruded *cont.*
B & T Metols Co.....13J/1
8lum, Julius, & Co., Inc.....6e/5
Brasco Mfg. Co.....20/3
Chose Bross & Copper Co., Inc.....13c/1
Himmel Brothers Co.....20/4
Illinois 8ronze Works.....6e/8
Kawneer Co.....20/5
Natcor 20/6
Notional Store Fronts.....20/7
Pittsburgh Plote Glass Co.....20/8
Revere Copper & 8rass Inc.....6b/2
Sioux Metol Products Co.....20/9
Universol Corp.....16o/36

metal—rolled or pressed
Aluminum Co. of America.....6o/1
Blum, Julius, & Co., Inc.....6e/5
Brasco Mfg. Co.....20/3
Himmel Brothers Co.....20/4
Inland Steel Products Co.....12o/3
Kowneer Co.....20/5
Notionol Store Fronts.....20/7
Republic Steel Corp.....6c/5
Revere Copper & 8ross Inc.....6b/2
Universal Corp.....16o/36

metal—structural
Aluminum Co. of Americo.....6o/1
American Institute of Steel Construction, Inc.....3d/1
8ethlehem Steel Co.....3d/2
Ceco Steel Products Corp.....3d/3
Decotur Iron & Steel Co.....22h/1
Donley Brothers Co.....28g/5
Greot Lokes Steel Corp.....3d/4
Inlond Steel Co.....6c/4
Loclede Steel Co.....3d/5
Macomber Inc.....3d/8
Penn Metol Co., Inc.....12o/5
Revere Copper & Brass Inc.....27o/7
Robberson Steel Co.....1b/6
Shlogro Steel Products Corp.....15g/9
Truscon Steel Co.....3d/9

sheathing

asbestas
see *insulation—building*

asbestas-cement
Corey, Philip, Mfg. Co.....8c/3
Johns-Monville 12b/1o
Keosbey & Mattison Co.....8b/5

fiber
Celotex Corp. 10o/4a
Fir-Tex Insulating Board Co.....10o/6
Flintkote Co.....10o/7
Homosote Co.....10o/9
Insulite Div.....10a/10
Notionol Gypsum Co.....12b/2
Simpson Logging Co.....10a/16
United States Gypsum Co.....10a/19
Wood Conversion Co.....10o/20

gypsum
Celotex Corp.....12b/1b
Notionol Gypsum Co.....12b/2
United Stotes Gypsum Co.....12b/3

paper
see *poper and felts*

sheathing *cont.*

plywood
Douglos Fir Plywood Assn.....5b/1
Mengel Co.....5b/3
United Stotes Plywood Corp.....5b/3

wood
see *lumber*

sheaves

sliding door
Knape & Vogt Mfg. Co.....17b/13

sheet metal contractors

Guaranteed Woterproofing Co.....1b/4

sheet metal work

Penn Metal Corp. of Penno.....22c/6
Spencer Studios, Inc.....22o/3
Watson Mfg. Co., Inc.....22g/3

sheet, strip, plate

aluminum or aluminum alloy
Aluminum Co. of Americo.....6o/1
Kawneer Co.....6o/2
Revere Copper & Bross Inc.....6b/2

asphalt or asbestos covered
see *roofing—steel—asphalt or asbestos covered; siding—steel—asphalt or asbestos covered*

copper or copper alloy
Americon Bross Co.....6b/1; 8c/1; 27o/1
Chase Brass & Copper Co., Inc.....8c/4
Revere Copper & Bross, Inc..6b/2; 8c/9; 27a/7

corrosion or rust resistant
see *metal—corrosion and rust resistant*

corrugated
see *roofing; siding*

enameled
see *sheet, strip, plate—vitreous or porcelain enameled*

enameling
see *metal—enameling*

expanded—for partitions, guards, grilles, etc.
Inlond Steel Products Co.....12a/3
Penn Metol Co., Inc.....12o/5
Truscon Steel Co.....3d/9
United Stotes Gypsum Co.....13o/7
Wheeling Groting Co.....13o/8

galvanized
see *sheet, strip, plate—steel or iron—annealed, galvanized or black*

iron or iron alloy
Armco Steel Corp.....6c/3
Republic Steel Corp.....6c/5

laminated metal
Allegheny Ludlum Steel Corp.....6c/1

plastic
see *panels; wall coverings; plastic materials*

products

sheet, strip, plate cont.

stainless steel
Allegheny Ludlum Steel Corp.....6c/1
Armco Steel Corp.....6c/3
Republic Steel Corp.....6c/S
United States Steel.....6c/6

steel—asphalt or asbestos covered
see roofing—steel—asphalt or asbestos covered; siding—steel—asphalt or asbestos covered

steel—copper alloyed
Armco Steel Corp.....6c/3
Bethlehem Steel Co.....3d/2
Inland Steel Co.....6c/4
Republic Steel Corp.....6c/S

steel—for painting
Armco Steel Corp.....6c/3
Inland Steel Co.....6c/4
Republic Steel Corp.....6c/S

steel or iron—annealed, galvanized or black
American Zinc Institute Inc.....6c/2
Armco Steel Corp.....6c/3
Bethlehem Steel Co.....3d/2
Inland Steel Co.....6c/4
Republic Steel Corp.....6c/S

tin or terne plate
Follansbee Steel Corp.....8c/S

vitreous or porcelain enameled
Davidson Enamel Products, Inc.....6d/1
Erie Enameling Co.....6d/2
Kawneer Co.....6a/2
Porcelain Enamel Institute, Inc.....6d/3
Sanymetal Products Co., Inc.....21b/6
Seaporcel Metals, Inc.....6d/4
Texlite Inc.....6d/5

sheeting
see piles or piling—sheet

shelving

hardware for
see hardware

refrigerator or cold storage
see refrigerators—shelving for

steel
All-Steel Equipment Inc.....22c/1
Art Metal Construction Co.....22a/10
General Fireproofing Co.....22g/1
Housemon, E. F., Co.....21a/2
Lyon Metal Products, Inc.....22c/4
Market Forge Co.....22b/6
Medart, Fred, Mfg. Co.....22c/S
Penn Metal Corp. of Penna.....22c/6
Remington Rand Inc.....22d/8
Standard Steel Equipment Co., Inc.....22c/8
Virginia Metal Products Corp.....22d/9
Watson Mfg. Co., Inc.....22a/11; 22g/3

wire
Market Forge Co.....22b/6

wood
Remington Rand Inc.....22d/8

shields

expansion
see bolts—expansion; anchors—screw

radiator
see radiators—covers and cabinets for

shingles

asbestos-cement
Corey, Philip, Mfg. Co.....8b/2
Flintkote Co.....8b/3
Johns-Manville.....8b/4
Keasbey & Mattison Co.....8b/S
United States Gypsum Co.....8b/6

asphalt
Barrett Div.....8a/2
Bird & Son, Inc.....8b/1
Corey, Philip, Mfg. Co.....8b/2
Celotex Corp.....10a/4a
Flintkote Co.....8b/3
Johns-Manville.....8b/4
United States Gypsum Co.....8b/6

slate
O'Brien Bros. Slate Co., Inc.....8b/9
Rising & Nelson Slate Co., Inc.....8b/10
Structural Slate Co.....4a/17
Vermont Structural Slate Co., Inc.....13b/13
Yorkmont Slate Co., Inc.....8b/11

tile
see roofing—tile

wood
Colonial Lumber Specialties, Inc.....8b/6a
Creo-Dipt Co., Inc.....8b/7
Stained Shingle & Shake Assn.....8b/7a

wood stained
Creo-Dipt Co., Inc.....8b/7
Stained Shingle & Shake Assn.....8b/7a

shock absorbers

pipe line
see absorbers—shock—pressure line

shoe racks and cabinets
Knape & Vogt Mfg. Co.....17b/13
Vogel-Peterson Co.....22c/9

shores
Baker-Raos, Inc.....3e/1
Ceco Steel Products Corp.....3b/1

shoring contractors
Eichleay Engineering Corp.....1b/2
Spencer, White & Prentis, Inc.....2a/4

showcase

brackets
see brackets—showcase

shower baths

cabinet unit
Fiat Metal Mfg. Co.....24b/1
Kawneer Co.....20/S
Ketcham, G. M., Mfg. Corp.....24c/11

shower baths cont.

cabinet unit cont.
Mills Co.....21b/4
Milwaukee Stamping Co.....24b/2
Reliance Art Metal Co.....15a/16
Sanymetal Products Co., Inc.....21b/6
Tiletone Co.....24b/3
Weis, Henry, Mfg. Co., Inc.....21b/7

doors for
see doors—shower stall—glass

drains for
see drains

fixtures for
Eljer Co.....24a/1
Fiat Metal Mfg. Co.....24b/1
Milwaukee Stamping Co.....24b/2
Speakman Co.....24a/12

lights for
see reflectors—gasproof, vaporproof, weatherproof, etc.

mixers for
see valves—mixing

pans for
see pans—shower

partitions for
see partitions

receptors for
Fiat Metal Mfg. Co.....24b/1
Milwaukee Stamping Co.....24b/2
Weis, Henry, Mfg. Co., Inc.....21b/7

shutters
(see also blinds; jalousies)

automatic sliding pole
McIntire, F. N., Bross Works.....22h/7

door
see louvers—door—ventilating

fire
Acme Door Corp.....1Se/1
American Warming & Ventilating Co...28b/16
Bergman, H. H. W., Co.....19c/1
Cornell Iron Works, Inc.....1Se/2
Kinnear Mfg. Co.....1Se/3
Lawrence Steel Co.....1Se/4
Mahon, R. C., Co.....1Se/S
Moeschl-Edwards Corrugating Co., Inc..1Se/6
North American Iron & Steel Co., Inc...15e/7
Ventilauvre Co., Inc.....18c/S
Wilson, J. G., Corp.....15e/8

lightproof
see ventilators—lightproof

ventilating
Allen Ventilator Div.....19b/1
American Cooloir Corp.....28b/6
American Foundry & Furnace Co.....28e/1
American Warming & Ventilating Co...28b/16
Arex Co.....19b/3
Bergmann, H. H. W., Co.....19c/1
Dalmo Continental Inc.....16b/2
Ellison Louvre Co., Inc.....18c/3
Emerson Electric Mfg. Co.....28b/7
Hunter Fan & Ventilating Co., Inc.....28b/8

shutters cont.

ventilating cont.
Ilg Electric Ventiloting Co.....28b/9
Schwitzer-Cummins Co.....28b/12
Shepler Mfg. Co.....28b/13
Swortout Co.....19b/11
Trode-Wind Motorfons, Inc.....28b/14
Universol Corp.....16o/36
Ventilouvre Co., Inc.....18c/5
Victor Electric Products, Inc.....28b/15
Wing, L. J., Mfg. Co.....28d/21

wall
see *ventilotors—woll*

siamese hose connections

Allen, W. D., Mfg. Co.....27c/1
Elkhort Bross Mfg. Co.....27c/2
McIntire, F. N., Bross Works.....22h/7

side walls

glass
Aluminex, Inc.....19o/1
Bliss Steel Products Corp.....16a/6
Pennsylvonio Wire Gloss Co.....19o/4
Robertson, H. H., Co.....19o/6

metal
see *ponels—metol*

siding

(see olso ponels)

aluminum
Alsco, Inc.....18o/1o
Aluminum Co. of America.....6o/1
Kowneer Co.....6o/2
Nichols Wire & Aluminum Co.....8c/7o
Permonente Products Co.....6o/3

asbestos-cement
Asbestone Corp.....8c/2
Corey, Philip, Mfg. Co.....8b/2; 8c/3
Flintkote Co.....8b/3
Johns-Monville 8o/5; 12b/1o
Keosbey & Mottison Co.....8b/5
United Stotes Gypsum Co.....8b/6

clapboard
see *siding—aluminum; siding—sheet metal;* etc.

corrugated—asbestos-cement, metal, protected metal
Americon Zinc Institute Inc.....6c/2
Asbestone Corp.....8c/2
Corey, Philip, Mfg. Co.....8c/3
Johns-Monville 8o/5
Keosbey & Mottison Co.....8b/5
Koppers Co., Inc.....8o/6
Nichols Wire & Aluminum Co.....8c/7o
Permonente Products Co.....6o/3
Republic Steel Corp.....6c/5
Robertson, H. H., Co.....8c/11

fiber
Celotex Corp.....10o/4o
Fir-Tex Insuloting Boord Co.....10o/6
Homosote Co.....10o/9
Insulite Div.....10o/10
Mosonite Corp.....13i/9
United Stotes Gypsum Co.....10o/19

siding cont.

galvanized
see *sheet, strip, plate—steel or iron—onneoled, golvonized or block*

iron—copper alloyed
Republic Steel Corp.....6c/5

lights for
see *lights—sidewolk, roof,* etc.

lumber
see *lumber*

plywood
Douglos Fir Plywood Assn.....5b/1

roll—prepared
Corey, Philip, Mfg. Co.....8b/2

sheet—insulated
Aluminum Co. of Americo.....6o/1
Corey, Philip, Mfg. Co.....8b/2
Detroit Steel Products Co.....3c/3
Goldsmith Metol Loth Co.....3b/4
Mohon, R. C., Co.....3c/6; 8c/7
Robertson, H. H., Co.....8c/11

sheet metal
Bethlehem Steel Co.....3d/2
Detroit Steel Products Co.....3c/3
Goldsmith Metol Loth Co.....3b/4
Inlond Steel Co.....6c/4
Mocomber Inc.....3d/8
Mohon, R. C., Co.....3c/6; 8c/7
Permonente Products Co.....6o/3

shingles
see *shingles*

steel—asphalt or asbestos covered
Koppers Co., Inc.....8o/6
Robertson, H. H., Co.....8c/11

weed
Colifornio Redwood Assn.....5o/2
Libbey-Owens-Ford Gloss Co.....13b/11
Western Pine Assn.....5o/4

signal systems

(see olso communicotion systems; sound systems; wotchmon's tour systems)

bells and buzzers
see *bells ond buzzers—electric*

elevator or dumbwaiter
see *elevotors*

fire alarm
see *olorms—fire*

hospital
Internotionol Business Mochines Corp...31c/1
Stromberg-Corlson Co.....31b/5o

light
Internotionol Business Mochines Corp...31c/1

program
see *clock ond clock systems*

signs

glass or plastic
Libbey-Owens-Ford Gloss Co.....7o/2
Rohm & Hoos Co.....7d/1
Spencer Studios, Inc.....22o/3

signs cont.

illuminated or reflective
Acme Bulletin & Directory Boord Corp..22o/1
Borrows Porcelain Enomel Co.....6e/2
Formico Insulotion Co.....13i/4
Internotionol Business Mochines Corp...31c/1
Seoporcel Metols, Inc.....6d/4
Spencer Studios, Inc.....22o/3

lighting units for
see *reflectors*

metal
Internotionol Steel Co.....15d/2
Kowneer Co. 20/5
Spencer Studios, Inc.....22o/3
United Stotes Bronze Sign Co., Inc.....22o/5

porcelain enameled
Borrows Porcelain Enomel Co.....6e/2
Dovidson Enomel Products, Inc.....6d/1
Erie Enomeling Co.....6d/2
Porcelain Enomel Institute, Inc.....6d/3
Seoporcel Metols, Inc.....6d/4
Spencer Studios, Inc.....22o/3
Texlite Inc. 6d/5

weed
Spencer Studios, Inc.....22o/3

sills

deer
see *thresholds*

window
see *windows—sills for*

sinks

bowls for
Chicogo Droinboord Co., Inc.....23a/2o
Elkoy Mfg. Co.....23o/4
Just Mfg. Co.....23a/10
Mutschler Bros. Co.....23a/15
Richmond Rodiotor Co.....24o/2
Wood Metol Industries, Inc.....23o/21

dishwater combination
Generol Electric Co.....23o/5
Hotpoint Inc.....23o/9
Westinghouse Electric Co.....23o/20

drainboards for
see *droinboords*

fittings for
see *fittings—sink, lovotory or toilet*

garbage disposal combination
see *gorboge—disposers*

kitchen cabinet
Americon Centrol Div.....23o/1
Curtis Componies Service Bureou.....5c/2
Eljer Co.....24o/1
Elkay Mfg. Co.....23o/4
Frigidoire Div.....23o/4o
Generol Electric Co.....23o/5
Genevo Modern Kitchens, Inc.....23o/6
Horrison Steel Cobinet Co.....23o/8
Hotpoint Inc.....23o/9
Just Mfg. Co.....23o/10
Midwest Mfg. Co.....23o/12
Mullins Mfg. Corp.....23o/14
Richmond Rodiotor Co.....24o/2

sinks cont.

kitchen cabinet cont.
St. Charles Mfg. Co.....23a/17
Steel Kitchen Cabinet Institute.....23a/18
Wood Metal Industries, Inc.....23a/21

laboratory
Alberene Stone Corp. of Virginia.....26b/1
Blickman, S., Inc.....23b/1
Duriron Co., Inc.....26b/2
Elkay Mfg. Co.....23a/4
General Fireproofing Co.....22g/1
Just Mfg. Co.....23a/10
Knight, Maurice A.....26b/3
Structural Slate Co.....4a/17
Van, John, Range Co.....23b/5

rims for
Chicago Drainboard Co., Inc.....23a/2a

scullery
Eljer Co.....24a/1
Elkay Mfg. Co.....23a/4
Just Mfg. Co.....23a/10
Richmond Radiator Co.....24a/2

sheet metal
Blickman, S., Inc.....23b/1
Chicago Drainboard Co., Inc.....23a/2a
Elkay Mfg. Co.....23a/4
Jamestown Metal Products, Inc.....22g/2
Just Mfg. Co.....23a/10
Market Forge Co.....22b/6
St. Charles Mfg. Co.....23a/17
Van, John, Range Co.....23b/5
Watson Mfg. Co., Inc.....22g/3
Wood Metal Industries, Inc.....23a/21

tops for
see taps—cabinet, counter, sink or table

trim for
Chicago Drainboard Co., Inc.....23a/2a
Fairfacts Co. Inc.....24c/4
Werner, R. D., Co., Inc.....13j/2

sirens
see horns and sirens

sizing
see sealers

skylights

aluminum
Aluminex, Inc.....19a/1
Fisher, J. J., Co., Inc.....19a/3
Super Steel Products Co.....19a/7
Vallas, Lionel.....15a/19
Vent-O-Lite Co.....19a/9

corrugated, flat or wire glass
Aluminex, Inc.....19a/1
American 3 Way-Luxfer Prism Co.....19a/2
Fisher, J. J., Co., Inc.....19a/3
Hirschman-Pahle Co. Inc.....19b/7
Overly Mfg. Co.....8c/8
Pennsylvania Wire Glass Co.....19a/4
Richards, J. Merrill.....19a/5
Robertson, H. H., Co.....19a/6
Super Steel Products Co.....19a/7
Vallas, Lionel.....15a/19
Van Noorden, E., Co.....19a/8
Vent-O-Lite Co.....19a/9

skylights cont.

curbs for
Fisher, J. J., Co., Inc.....19a/3
Hirschman-Pahle Co. Inc.....19b/7

glass—concrete or metal construction
American 3 Way-Luxfer Prism Co.....19a/2
Richards, J. Merrill.....7a/4a; 19a/5

guards for
see guards—skylight

heat and glare retarding
American 3 Way-Luxfer Prism Co.....19a/2
Richards, J. Merrill.....19a/5
Vent-O-Lite Co.....19a/9

plastic
Rohm & Haas Co.....7d/1

semi-vacuum
American 3 Way-Luxfer Prism Co.....19a/2
Richards, J. Merrill.....19a/5

sheet metal and structural
Aluminex, Inc.....19a/1
American 3 Way-Luxfer Prism Co.....19a/2
Fisher, J. J., Co., Inc.....19a/3
Hirschman-Pahle Co. Inc.....19b/7
Overly Mfg. Co.....8c/8
Pennsylvania Wire Glass Co.....19a/4
Robertson, H. H., Co.....19a/6
Super Steel Products Co.....19a/7
Van Noorden, E., Co.....19a/8
Vallas, Lionel.....15a/19
Vent-O-Lite Co.....19a/9

ventilating
Aluminex, Inc.....19a/1
American 3 Way-Luxfer Prism Co.....19a/2
Pennsylvania Wire Glass Co.....19a/4
Super Steel Products Co.....19a/7
Vallas, Lionel.....15a/19
Vent-O-Lite Co.....19a/9

ventilators for
see ventilators—roof

slabs

concrete—architectural
Guastavino, R., Co.....3b/8
Ma-Sai Associates.....4b/2
Universal Atlas Cement Co.....4b/3

concrete—lightweight
see floor construction; roof construction

granite
Cold Spring Granite Co.....4a/1
Eastern Quarries, Inc.....4a/2
Fletcher, H. E., Co.....4a/3
North Carolina Granite Corp.....4a/6

granite—manufactured
Granux Corp.....4b/1

gypsum
see roof construction—gypsum slab—precast

insulating
see floor construction—concrete slab—insulating; roof construction—concrete slab—insulating

nailing concrete
see floor construction; roof construction

slabs cont.

quartzite
see quartzite

reinforced cement
see floor construction; roof construction

sandstone
see sandstone

slate
see flooring—slate; flagging

soapstone
see soapstone

structural glass
see glass—structural

structural slate
see slate—structural

terrazzo
see terrazzo—precast

slate

flagging
see flagging

flooring
see flooring—slate

roofing
see shingles—slate

structural
Structural Slate Co.....4a/17
Vermont Structural Slate Co., Inc.....13b/13

sleepers

floor—anchors for
see clips

sleeves

anchoring bolt
see anchors—bolt

flashing—vent stack
see vent connections—roof

slots

masonry—metal
see anchors—slot and slots for

smokeproofing contractors

Many, B. J., Co., Inc.....1b/5

smokestacks
see chimneys

soap

dispensers
Gerity-Michigan Corp.....24c/6
Haegger, Inc.....24c/9
Imperial Brass Mfg. Co.....24c/10
Ketcham, G. M., Mfg. Corp.....24c/11
U. S. Sanitary Specialties Corp.....24c/18

floor cleaning
see cleaners and polishes

soapstone

ashlar
Alberene Stone Corp. of Virginio.....4o/11

laboratory equipment
Alberene Stone Corp. of Virginio 26b/1

sockets

ceiling
see *inserts—concrete*

fluorescent lamp
Generol Electric Co.....29b/1
Spero Electric Corp.....30a/16
Sylvania Electric Products Inc.....30a/17

incandescent lamp
Bryont Electric Co.....29c/1
Generol Electric Co.....29b/1
Spero Electric Corp.....30o/16

soffit clips

see *coging*

soil investigations

Drilled-In Coisson Corp.....2o/1
MocArthur Concrete Pile Corp.....2o/2
Roymond Concrete Pile Co.....2o/3

sound control

see *blocks—ocousticol; doors—saund retording; ducts—linings for; floor canstructian—ocoustical; portitions—sound retordont; plaster—acousticol; sound isolation systems; test cells—saund retording; tile—acousticol; wallboord—ocousticol*

sound isolation systems

Johns-Manville 11a/5

sound systems

electronic
Deagan, J. C., Inc.....22e/3
Executone, Inc.....31b/4
Internatianal Business Machines Corp...31c/1
Maas Organ Ca.....22e/5
Schulmerich Electronics, Inc.....22e/6
Stromberg-Carlson Ca.....31b/5a
Webster Electric Co.....31b/6

spacers

bar—concrete reinforcement
see *clips*

spandrels

(see also specific kind of stone as limestone; etc.)

flashings for
see *flashings; waterproofing*

metal
Aluminum Co. of America.....6a/1
Erie Enameling Co.....6d/2
Flour City Ornamental Iron Co.....6e/6a
Internatianal Steel Co.....15d/2
Seaparcel Metals, Inc.....6d/4
Texlite Inc.....6d/5
Universal Carp.....16o/36

slate
Structural Slate Co.....4a/17

spotlights

see *floodlights; lighting fixtures*

spreaders

see *forms—concrete—ties, clamps and spreaders for*

sprinkler systems

contractors
Grinnell Co., Inc.....27c/3

fire
see *fire—sprinkler systems*

stacks

asbestos-cement
Johns-Monville Bo/5

book
see *bookstacks*

metal
see *metal plate construction*

stadium

contractors
Terminol Construction Carp.....1o/5
Woyne Iron Works.....22f/4

seating
see *bleachers; grandstands*

stage equipment

see *theater equipment*

stainless steel

see *castings; metal; rods and bars; sheet, strip, plate; tubing; wire*

stains

brick and stucco—waterproof
Empire Varnish Co.....14/5
Minwax Co., Inc.....9o/14

mortar, cement, concrete and stucco
see *colors—mortar, cement, etc.*

shingle
Cabot, Samuel, Inc.....14/1
Crea-Dipt Co., Inc.....8b/7
du Pont de Nemours, E. I., & Co., (Inc.).14/3
Glidden Co.....14/6
O'Brien Corp.....14/12
Parogon Paint & Varnish Carp.....14/13
Patterson-Sargent Co.....14/14
Pittsburgh Plate Glass Co.....14/15
Pratt & Lambert-Inc.....14/16
Sherwin-Williams Co.....14/19a
Standard Varnish Works.....14/19b

wood
Breinig Brothers, Inc.....14/1o
Cabot, Samuel, Inc.....14/1
Creo-Dipt Co., Inc.....Bb/7
du Pont de Nemours, E. I., & Co., (Inc.).14/3
Glidden Co.....14/6
Minwax Co., Inc.....14/9
O'Brien Carp.....14/12
Paragon Paint & Varnish Carp.....14/13

stains cont.

wood cont.
Pattersan-Sargent Co.....14/14
Pittsburgh Plate Gloss Co.....14/15
Prott & Lombert-Inc.....14/16
Sherwin-Williams Co.....14/19o
Standord Vornish Works.....14/19b

stairs

cellar
Bilco Co.....15h/3

disappearing
Bessler Disappearing Stairway Co.....22i/3

electric
see *stairs—moving*

metal
(see also treads)
Bilco Co.....15h/3
Birminghom Ornamental Iron Co., Inc...6e/3
Decatur Iron & Steel Co.....22h/1
Generol Bronze Carp.....6e/7
Nationol Assn. of Ornomentol Metol Mfrs.....6e/9o
Robberson Steel Co.....1b/6

metal—channel stringers for
Nationol Assn. of Ornomental Metal Mfrs.....6e/9a

metal—spiral
American Abrasive Metals.....13a/9
Duvinage Spiral Stair Div.....6g/1
Fiske, J. W., Iron Works.....6e/6

moving
Multiscope, Inc.....32o/9
Otis Elevotar Ca.....32o/10
Worsow Elevotor Co.....32o/16
Westinghouse Electric Corp.....32o/19

moving—covers for
Carnell Iron Warks, Inc.....15e/2
Wilson, J. G., Corp.....15e/B

treads for
see *treads*

wood
see *millwork*

stalls

shower bath
see *shower baths—cabinet unit*

toilet, shower or urinal
see *partitions*

stanchions

Bethlehem Steel Ca.....3d/2

standpipe

hose connections
Allen, W. D., Mfg. Co.....27c/1
Elkhart Brass Mfg. Co.....27c/2

starters

motor
see *controls—motor; switches—motor starting*

products

static grounding
see grounding equipment; grids—flooring

steam tables
Blickman, S., Inc.....23b/1
Van, John, Range Co.....23b/5

steamers
compartment
Van, John, Range Co.....23b/5

steel or stainless steel
see castings; metal; rods and bars; sheet, strip, plate; tubing; wire

steel wool machines
see flooring—finishing, sanding, polishing machines

steps
granite
Cald Spring Granite Co.....4a/1
Fletcher, H. E., Co.....4a/3
North Carolina Granite Corp.....4a/6

manhole
Flockhart Foundry Co.....6h/2

stair
see treads

sterilizers
hospital
see hospital—equipment

water
see chlorine control apparatus; filters

stipplers
Kelley Island Lime & Transport Co.....11a/6

stirrups
see clips

stokers
Canton Stoker Corp.....28f/1
Chrysler Corp.....28a/4
Jackson & Church Co.....28e/6
Rheem Mfg. Co.....28e/8
Stokol Stoker Co., Inc.....28f/3
U. S. Machine Corp.....28f/4
Washburn & Granger, Inc.....25a/5

stone
see limestone; gronite; marble; soapstone; slate; sandstone; quartzite

artificial
see plaster—texturing; plaster—casting and moulding

stoneware
chemical
Alberene Stone Corp. of Virginia.....26b/1
Knight, Maurice A.....26b/3

stops
door
Lockwood Hardware Mfg. Co.....17b/3
Miami Cabinet Div.....24c/13

gravel
see gravel stops

storage
files
see filing equipment

liquids
see liquids—storage, handling and dispensing

store front construction
(see also letters; signs; mouldings; trim; shapes—metal)

awnings for
see awnings

facing—glass or plastic
Appleman Art Glass Works.....7c/2
Libbey-Owens-Ford Glass Co.....13b/11
Pittsburgh Plate Glass Co.....13b/12
Rohm & Haas Co.....7d/1

facing—metal
Anco Mfg. Co., Inc.....20/2
General Bronze Corp.....6e/7
Himmel Brothers Co.....20/4
Kawneer Co.....6a/2
Natcor 20/6
Newman Brothers, Inc.....6e/10

facing—porcelain enameled
Davidson Enamel Products, Inc.....6d/1
Erie Enameling Co.....6d/2
Kawneer Co.....6a/2
Porcelain Enamel Institute, Inc.....6d/3
Seaporcel Metals, Inc.....6d/4
Texlite Inc.....ad/5

facing—stone
Cold Spring Granite Co.....4a/1
Granux Corp.....4b/1
Tennessee Marble Producers.....4a/9

sash
Alumiline Corp.....20/1
Anco Mfg. Co., Inc.....20/2
Brasco Mfg. Co.....20/3
Flour City Ornamental Iron Co.....16a/15
Himmel Brothers Co.....20/4
Illinois Bronze Works.....6e/8
Kawneer Co. 20/5
Natcor 20/6
National Store Fronts.....20/7
Nuroco Woodwork Mfg. Div.....5c/3
Pittsburgh Plate Glass Co.....20/8
Sioux Metal Products Co.....20/9

storm sash
(see also windows—combination; hardware—windows)

Adams & Westlake Co.....16a/2
Alsco, Inc.....18a/1a
Aluminum Window Corp.....16a/2b
Burrowes Corp.....18a/2
Ceco Steel Products Corp.....16a/7; 18a/3
Croft Steel Products, Inc.....16a/10
Curtis Companies Service Bureau.....5c/2
Detroit Steel Products Co.....16a/13
Flynn, Michael, Mfg. Co.....16a/16

storm sash *cont.*
Kaufmann Corp.....16a/21
National Fireworks, Inc.....16a/23
Rolscreen Co.....16b/6
Russell, F. C., Co.....18a/7
Steelcraft Mfg. Co.....16a/28
Sterling Windows, Inc.....16a/29
Sunlight Metal Products Co.....16a/31
Truscon Steel Co.....16a/34

stoves
(see also ranges)

franklin
Jacksan, Wm. H., Co.....28g/7

strainers
floor
see drains—flaar, yard, etc.

pipe
Hoffman Specialty Co.....28c/3
Webster, Warren, & Co.....28c/9

roof
Barrett Div.....8a/2
Boosey, Narman, Mfg. Co.....27e/2
Levaw, David.....8d/2
Zurn, J. A., Mfg. Co.....27e/6

sink
Duriran Co., Inc.....26b/2
Just Mfg. Co.....23a/10

swimming pool, etc.
see swimming pool—drains, strainers and fittings

straps
joist
see anchors

stringers
stair
see stairs—metal—channel stringers for

strip lath
see lath

strips
(see also specific type as: dividers; edgings)

closure
Asbestone Corp.....8c/2
Carey, Philip, Mfg. Co.....8c/3

terrazzo
see dividers

structural
board
see lath; wallboard; plywood

engineers
O'Connor, Thomas, & Co., Inc.....1a/4
Robberson Steel Co.....1b/6
Roberts & Schaefer Co.....3b/5
Terminal Construction Corp.....1a/5

glass
see glass—structural

structural cont.

shapes
see *shapes—metal—structural*

slate
see *slate—structural*

steel—erecters
see *erectors—steel—contractors*

steel—fabricaters, designers and welders
American Institute of Steel Construction, Inc.....3d/1
Bethlehem Steel Co.....3d/2
Decatur Iran & Steel Co.....22h/1
Macomber Inc.....3d/8
Rabbersan Steel Co.....1b/6
Shlagro Steel Products Corp.....15g/9

trusses
see *trusses*

stucco

base
see *tile; lath*

colors
see *colors—mortar, cement, etc.*

portland cement
Medusa Portland Cement Co.....4e/2
Portland Cement Assn.....4e/4
Trinity Div.....4e/6
Tuckahoe Stucco Corp.....4e/7

portland cement—premixed
Universal Atlas Cement Co.....4b/3

studding
see *furring and studding*

substations

unit
General Electric Co.....29a/4

subway and tunnel contractors
Spencer, White & Prentis, Inc.....2a/4

sumps

acid resistant
Knight, Maurice A.....26b/3

pump
see *ejectors—sewage; pumps—sump*

roof
see *drains—roof, gutter or promenade*

supports
(see also clips; hangers—pipe; hardware)

barricade
Cleveland Steel Specialty Co., Inc.....3f/1

surrounds

window
see *casings*

suspended ceiling systems
see *ceilings—suspended systems*

swimming pool

drains, strainers and fittings
Hoffman Specialty Co.....27e/3a
Josam Mfg. Co.....27e/4
Paddock Pool Equipment Co.....22f/5
Permutit Co.....27a/17
Wade Mfg. Co.....27e/5

equipment for
Paddock Paol Equipment Co.....22f/5

paint
see *waterproofing—paint and compounds; paint—swimming pool; paint—brick, cement, etc.*

recirculation systems
Josam Mfg. Co.....27e/4
Paddock Paal Equipment Co.....22f/5

scum gutters
Josam Mfg. Co.....27e/4
Paddock Pool Equipment Co.....22f/5
Sparta Ceramic Co.....13b/4

tile
Cambridge Tile Mfg. Co.....13b/1
Mosaic Tile Co.....13b/2
Paddock Pool Equipment Co.....22f/5
Sparta Ceramic Co.....13b/4

water purification apparatus
see *chlorine control apparatus; filters*

switchboards
(see also circuit breakers; controls—stage lighting)

electric
Adam, Frank, Electric Co.....29a/1
BullDog Electric Products Co.....29a/2
Federal Electric Products Co., Inc.....29a/3
General Electric Co.....29a/4
Trumbull Electric Mfg. Co.....29a/5
Westinghouse Electric Corp.....29a/6

telephone
Automatic Electric Co.....31b/2
Bell Telephone System.....31b/3
International Business Machines Corp...31c/1
Stromberg-Carlson Co.....31b/5a

switches

central air transfer—automatic
Onan, D. W., & Sons, Inc.....29a/7

convenience outlet combined
see *receptacles—electric—convenience outlet and switch combined*

entrance or meter service
Adam, Frank, Electric Co.....29a/1
Federal Electric Products Co., Inc.....29a/3
General Electric Co.....29b/1
Hart & Hegeman Div.....29c/2
Trumbull Electric Mfg. Co.....29a/5
Westinghouse Electric Corp.....29a/6

light actuated
Mercoid Corp.....28c/5

switches cont.

limit
General Electric Co.....29a/4
Mercoid Corp.....28c/5

lock
Hart & Hegeman Div.....29c/2

magnetic
General Electric Co.....29a/4
Hart & Hegeman Div.....29c/2
Trumbull Electric Mfg. Co.....29a/5

mercury
Bryant Electric Co.....29c/1
General Electric Co.....29b/1
Mercaid Corp.....28c/5

meter starting
Adam, Frank, Electric Co.....29a/1
Federal Electric Products Co., Inc.....29a/3
General Electric Co.....29a/4
Hart & Hegeman Div.....29c/2
Trumbull Electric Mfg. Co.....29a/5
Westinghouse Electric Corp.....29a/6

push button, toggle, tumbler, pull, snap, pendant
Adam, Frank, Electric Co.....29a/1
Bryant Electric Co.....29c/1
Federal Electric Products Co., Inc.....29a/3
General Electric Co.....29a/4; 29b/1
Hart & Hegeman Div.....29c/2
Shepler Mfg. Co.....28b/13

remote control
Hart & Hegeman Div.....29c/2

safety
Adam, Frank, Electric Co.....29a/1
BullDog Electric Products Co.....29a/2
Federal Electric Products Co., Inc.....29a/3
Trumbull Electric Mfg. Co.....29a/5
Westinghouse Electric Corp.....29a/6

tumbler, snap—circuit breaker type
Westinghouse Electric Corp.....29a/6

warning light combination
Hart & Hegeman Div.....29c/2

t

tables

cafeteria and restaurant
Blickman, S., Inc.....23b/1
Market Forge Co.....22b/6
Van, Jahn, Range Co.....23b/5

drawing
Lyon Metal Products, Inc.....22c/4

laboratory
see *laboratory equipment*

library
see *library equipment*

metal
Art Metal Construction Co.....22a/10
Bach, Oscar S., Industries, Inc.....6e/1
Blickman, S., Inc.....23b/1
General Fireproofing Co.....22g/1
Illinois Bronze Works.....6e/8
Lyon Metal Products, Inc.....22c/4

products

tables cont.

metal cont.
Market Forge Co.....22b/6
Pauly Jail Building Co.....22h/2
Penn Metal Corp. of Penno.....22c/6
Van, John, Range Co.....23b/5

mortuary—autopsy
Blickman, S., Inc.....23b/1
Elkay Mfg. Co.....23a/4
Market Forge Co.....22b/6
Van, John, Range Co.....23b/5

serving
see steam tables

tops for
see tops—cabinet, counter, sink or table

wood
American Seating Co.....22d/7
Remington Rand Inc.....22d/8

tablets

metal
General Bronze Corp.....6e/7
International Bronze Tablet Co., Inc.....6e/9
Newman Brothers, Inc.....6e/10
Reliance Art Metal Co.....15a/16
Spencer Studios, Inc.....22a/3
United States Bronze Sign Co., Inc.....22a/5

tanks

elevated—steel or wood
Decatur Iron & Steel Co.....22h/1

glass furnace
Cutshall, J. M., & Sons.....28g/3

glass lined
Smith, A. O., Corp.....27b/1

hot water storage
Bell & Gossett Co.....28c/1
Kewonee Boiler Corp.....28d/5
Rheem Mfg. Co.....27a/8
Rudd Mfg. Co.....27a/9
Smith, A. O., Corp.....27b/1
Thrush, H. A., & Co.....28c/7
Triplex Heating Specialty Co., Inc.....28c/8
Westinghouse Electric Corp.....23a/20
Wood, John, Mfg. Co., Inc.....27a/11

hydro-therapy
Elkay Mfg. Co.....23a/4
Van, John, Range Co.....23b/5

linings for
see lagging; linings—tank

metal or metal lined
Rheem Mfg. Co.....27a/8
Smith, A. O., Corp.....27b/1
Triplex Heating Specialty Co., Inc.....28c/8
Van, John, Range Co.....23b/5

pressure
Bell & Gossett Co.....28c/1
Rheem Mfg. Co.....27a/8
Thrush, H. A., & Co.....28c/7
Triplex Heating Specialty Co., Inc.....28c/8

septic
see septic tanks

tanks cont.

sheet metal for
see sheet, strip, plate—copper or copper alloy

soap
see soap—dispensers

tile—reinforced
National Fireproofing Corp.....4d/8

telephone

(see also cabinets; signal systems; switchboards, etc.)

booths
Bell Telephone System.....31b/3
Sherron Metallic Corp.....22i/1

inter or intra-communicating systems or instruments
Automatic Electric Co.....31b/2
Bell Telephone System.....31b/3
Executone, Inc.....31b/4
International Business Machines Corp.....31c/1
Stromberg-Carlson Co.....31b/5a
Webster Electric Co.....31b/6

service
Bell Telephone System.....31b/3

television equipment

Hollicrofters Co.....31a/1

temperature controls

see controls; thermostats

tennis court

enclosure
see fencing

surfacers
O'Brien Bros. Slate Co., Inc.....8b/9
Yorkmont Slate Co., Inc.....8b/11

termite preventive treatment

lumber
see preservatives—wood; lumber—insect preventive treated and/or treating

terra cotta

blocks
see tile—hollow—clay or terra cotta

roofing—tile
see roofing—tile

terrazzo

aggregates for
see aggregates—terrazzo

cement for
Medusa Portland Cement Co.....4e/2
Portland Cement Assn.....4e/4
Trinity Div.....4e/6
Universal Atlas Cement Co.....13c/5

cleaning compounds
see cleaners and polishes

terrazzo cont.

cove base
see terrazzo—precast

curing
see concrete—curing materials

dividers
see dividers

floor dividers—static elimination
see grids—flooring—electrical grounding

floor finish
Hillyard Sales Co.....13h/1
Horn, A. C., Co., Inc.....9a/10
Kedmont Mfg. & Waterproofing Co.....9a/10a
Master Builders Co.....9a/13
Masury-Young Co.....13h/2
Minwax Co., Inc.....9a/14
Sonneborn, L., Sons, Inc.....9a/17

flooring
see flooring—terrazzo

partitions & wainscoting
see terrazzo—precast

precast
Integro, Inc.....13a/11
National Terrazzo & Mosaic Assn., Inc.....13c/3

strips for
Chase Brass & Copper Co., Inc.....13c/1
Manhattan Terrazzo Brass Strip Co., Inc.....13c/2

treads
see treads—terrazzo—precast

test boring and prospecting

Raymond Concrete Pile Co.....2a/3
Western Foundation Co.....2a/5

test cells

sound retarding
National Gypsum Co.....11a/7

testing services

Pittsburgh Testing Laboratory.....1c/1

texturing

paint
see paint—texturing

plaster
see plaster—texturing

theater equipment

(see also specific type of equipment as: controls; elevators; seats; switchboards; ventilators)
Universal Corp.....16a/36
Vasconcellos, Joseph, Inc.....22e/1
Weiss, I. & Sons.....22e/2

thermometers

Hoffman Specialty Co.....28c/3

thermostats

(see also controls)

Mercoid Corp.....28c/5
Powers Regulator Co.....24a/11
Wesix Electric Heater Co.....28e/11

thresholds

metal

Accurate Metal Weather Strip Co., Inc..18b/1
Allmetal Weatherstrip Co.....18b/2
Aluminum Co. of America.....6a/1
American Abrasive Metals Co.....13a/9
American Mason Safety Tread Co.....13a/10
Anca Mfg. Co., Inc.....20/2
Blum, Julius, & Co., Inc.....6e/5
Brasco Mfg. Co.....20/3
Chamberlin Co. of America.....18b/3
Donley Brothers Co.....28g/5
E-Z Tight, Inc.....18b/4
Ellison Bronze Co., Inc.....15a/10
Himmel Brothers Co.....20/4
Hohmann & Barnard, Inc.....3f/3
Illinois Bronze Works.....6e/8
Kawneer Co.....15a/12
Monarch Metal Weatherstrip Corp.....18b/5
Natcor 20/6
National Store Fronts.....20/7
Quaker City Metal Weatherstrip Co....18b/6
Reese Metal Weather Strip Co.....18b/7
Reliance Art Metal Co.....15a/16
Security Co.....18b/8
Von Duprin Div.....17b/5
Wooster Products, Inc.....13a/12

safety—non-slip

Accurate Metal Weather Strip Co., Inc..18b/1
American Abrasive Metals Co.....13a/9
American Mason Safety Tread Co.....13a/10
Blum, Julius, & Co., Inc.....6e/5
Murray Tile Co., Inc.....13b/3
Quaker City Metal Weatherstrip Co....18b/6
Wooster Products, Inc.....13a/12

weatherstrip combination

Accurate Metal Weather Strip Co., Inc..18b/1
Allmetal Weatherstrip Co.....18b/2
Blum, Julius, & Co., Inc.....6e/5
Chamberlin Co. of America.....18b/3
E-Z Tight, Inc.....18b/4
Monarch Metal Weatherstrip Corp.....18b/5
Quaker City Metal Weatherstrip Co....18b/6
Reese Metal Weather Strip Co.....18b/7
Security Co. 18b/8
Wooster Products, Inc.....13a/12

ties

concrete form
see *forms—concrete*

concrete reinforcing
see *clips*

wall—metal
see *anchors—veneer wall*

wood
see *lumber*

tile (or tile form)

abrasive

American Abrasive Metals Co.....13a/9
Integro, Inc.....13a/11
Mosaic Tile Co.....13b/2
Norton Co.....13c/4

acid resistant

see *brick—acid resistant; flooring—acid resistant*

acoustical

American Acoustics, Inc.....11a/1
Armstrong Cork Co.....11a/3
Celotex Carp.....10a/4a; 11a/3a
Durisol, Inc.....3c/13a
Fir-Tex Insulating Board Co.....10a/6
Guastavino, R., Co.....3b/8
Heerwagen Acoustic Decoration Co....11a/4
Insulite Div.....10a/10
Johns-Manville 11a/5
National Gypsum Co.....11a/7; 12b/2
New England Fibre Co.....10a/14a
Owens-Corning Fiberglas Corp.....10c/1
Simpson Logging Co.....11a/9
United States Gypsum Co.....11a/12
Waylite Co.....4e/10
Wood Conversion Co.....10a/20

asphalt

see *flooring—asphalt tile*

back-up

see *tile—hallow—clay or terra cotta*

board

see *wallboard—tiled*

ceramic

see *tile—clay—floor or wall; tile—facing*

clay—adhesive setting

Sparta Ceramic Co.....13b/4

clay—floor or wall

Cambridge Tile Mfg. Co.....13b/1
Guastavino, R., Co.....3b/8
Ludowici-Celadon Co.....8b/8
Mosaic Tile Co.....13b/2
Murray Tile Co., Inc.....13b/3
Norton Co.....13c/4
Robinson Clay Product Co.....26a/6
Sparta Ceramic Co.....13b/4
Tile Council of America.....13b/5
United States Quarry Tile Co.....13b/6

cleaners and polishes

see *cleaners and polishes*

cork

see *insulation—cold storage or refrigeration; flooring—cork composition; tile—acoustical; wall coverings*

drain

Elgin-Butler Brick Co.....4d/4
National Fireproofing Corp.....4d/8
Robinson Clay Product Co.....26a/6

facing—glazed or unglazed

Acme Brick Co.....4d/1
Arketex Ceramic Corp.....4d/2
Claycraft Co.....4d/3
Elgin-Butler Brick Co.....4d/4
Facing Tile Institute.....4d/5
Guastavino, R., Co.....3b/8
Hanley Co.....4d/6

tile (or tile form) *cont.*

facing—glazed or unglazed *cont.*

Hocking Valley Brick Co.....4d/7
Jackson, Wm. H., Co.....28g/7
National Fireproofing Corp.....4d/8
Stark Brick Co.....4d/9

fiber

Armstrong Cork Co.....11a/3
Celotex Corp.....10a/4a; 11a/3a
Fir-Tex Insulating Board Co.....10a/6
Flintkote Co.....10a/7
Insulite Div.....10a/10
Marsh Wall Products, Inc.....13i/8
Masonite Corp.....13i/9
National Gypsum Co.....11a/7
New England Fibre Co.....10a/14a
Simpson Logging Co.....11a/9
Tylac Co.....13i/10
United States Gypsum Co.....10a/19; 11a/12
Wood Conversion Co.....10a/20

floor—clay

see *tile—clay—floor or wall*

glass—for vault and sidewalk

see *lights—sidewalk, roof, etc.*

glazed

see *tile—facing*

hollow—clay, concrete or terra cotta

Acme Brick Co.....4d/1
Arketex Ceramic Corp.....4d/2
Claycraft Co.....4d/3
Durisol, Inc.....3c/13a
Elgin-Butler Brick Co.....4d/4
Facing Tile Institute.....4d/5
Hanley Co.....4d/6
Hocking Valley Brick Co.....4d/7
National Fireproofing Corp.....4d/8
Stark Brick Co.....4d/9

hollow—clay or terra cotta—glazed or unglazed

see *tile—facing*

hollow—lightweight concrete

Waylite Co.....4e/10

hollow glass

American Structural Products Co.....7c/1
Pittsburgh Corning Corp.....7c/3

hollow gypsum

United States Gypsum Co.....12b/3

interlocking rubber

see *flooring—rubber*

leather

United States Plywood Corp.....13i/12

lightweight concrete—glass faced

Libbey-Owens-Ford Glass Co.....13b/11

linoleum

see *linoleum*

mastic composition

see *flooring—asphalt*

metal—enameled or anodized

Armstrong Cork Co.....13e/2
Metal Tile Products, Inc.....13b/7
Sanymetal Products Co., Inc.....21b/6
Tile-O-Chrome Corp.....13b/9
Vikon Tile Corp.....13b/10

products

tile (or tile form) cont.

mosaic ceramic
see tile—clay—floor or wall

packing house
see brick—acid resistant

partition—x-ray protective
Bar-Ray Products, Inc.....21d/1
General Lead Construction Corp.....21d/3
Ray Proof Corp.....21d/2

paving
see tile—quarry or promenade

plastic
Johns-Manville 13d/4
Moulding, Thos., Floor Mfg. Co.....13d/7
Tile-Tex Co., Inc.....13d/8

quarry or promenade
Mosaic Tile Co.....13b/2
Murray Tile Co., Inc.....13b/3
Tile Council of America.....13b/5
United States Quarry Tile Co.....13b/6

roofing
see roofing—tile; roof construction—concrete slab

rubber—floor or wall
see flooring—rubber; wall coverings—rubber

sewage disposal—connectors for
Kaustine Co., Inc.....27f/1

sheet
see wallboard—tiled

stairs—non-slip
see tile—abrasive; treads—safety

steel—forms
see forms—concrete

structural
see tile—hollow—clay or terra cotta

terra cotta—glazed
see tile—hollow—clay or terra cotta; tile—facing

wall
see specific type as: tile—clay; tile—fiber; tile—plastic; wallboard—tiled; etc.

wood fiber
see tile—fiber

x-ray protective
see tile—partition—x-ray protective

timber

(see also lumber)

connectors for
Cleveland Steel Specialty Co., Inc.....3f/1
Duplex Hanger Co.....3f/2
Hohmann & Barnard, Inc.....3f/3

timers

Autocall Co.....31b/1
International Business Machines Corp...31c/1
Stromberg Time Corp.....31c/3

tin and terne plate

see sheet, strip, plate—tin or terne plate

toilet

carriers or supports
Haffman Specialty Co.....27e/3a
Zurn, J. A., Mfg. Co.....27e/6

paper and holders
see bathroom accessories

partition fittings
see hardware

partitions
see partitions—toilet, shower, etc.

seats
Beneke Corp.....24a/3
Church, C. F., Mfg. Co.....24a/4
Sperzel Co.....24a/5
Standard Tank & Seat Co.....24a/6

systems—septic tank
see septic tanks

tools

cemented carbide
Rawlplug Co., Inc.....3f/4

furnace
Cleveland Steel Specialty Co., Inc.....3f/1

hand
Grand Rapids Hardware Co.....17a/3
Rawlplug Co., Inc.....3f/4

timber connector
Cleveland Steel Specialty Co., Inc.....3f/1
Hohmann & Barnard, Inc.....3f/3

tops

cabinet, counter, sink or table
Alberene Stone Corp. of Virginia 4a/11; 26b/1
Armstrong Cork Co.....13e/2
Cambridge Tile Mfg. Co.....13b/1
Chicago Drainboard Co., Inc.....23a/2a
Congoleum-Nairn Inc.....13e/3
Consolidated Water Power & Paper Co..13i/2
Elkay Mfg. Co.....23a/4
Farley & Loetscher Mfg. Co.....13i/3
Formica Insulation Co.....13i/4
General Electric Co.....13i/5; 23a/5
Geneva Modern Kitchens, Inc.....23a/6
Harrison Steel Cabinet Co.....23a/8
Jamestown Metal Products, Inc.....22g/2
Just Mfg. Co.....23a/10
Libbey-Owens-Ford Glass Co.....13b/11
Marsh Wall Products, Inc.....13i/8
Midwest Mfg. Co.....23a/12
Miller Metal Products, Inc.....23a/13
Mullins Mfg. Corp.....23a/14
St. Charles Mfg. Co.....23a/17
Structural Slate Co.....4a/17
United States Plywood Corp.....13i/13
United States Quarry Tile Co.....13b/6
Watson Mfg. Co., Inc.....22g/3
Wood Metal Industries, Inc.....23a/21

table—non-sparking finish for
Congoleum-Nairn Inc.....13e/3

towels

paper and holders
see bathroom accessories

towers

radio, beacon, lighting, etc.
see masts—radio, etc.

track

cabinet door—sliding
Knape & Vogt Mfg. Co.....17b/13

door
(see also hangers—door, partition or gate; hardware—folding door or folding partition)
Accurate Metal Weather Strip Co., Inc..18b/1
Allith-Prouty, Inc. 17a/8
Knape & Vogt Mfg. Co.....17b/13
Metal Products Corp.....17a/9
National Mfg. Co.....15g/5a
Richards-Wilcox Mfg. Co.....17a/10

tracking systems

refrigerator—meat storage
Market Forge Co.....22b/6

traffic

markers
see markers

transformers

power and lighting
General Electric Co.....29a/4

transom

catches and chain
see hardware

ventilators
see louvers—door—ventilating; fans

traps

acid resistant
Duriron Co., Inc.....26b/2
Jasam Mfg. Co.....27e/4
Knight, Maurice A.....26b/3

backwater valve
see valves—backwater; drains—backwater

garage or sand
see drains—garage

grease or oil
see interceptors

plaster, sink, dental, surgical, etc.
see interceptors

radiator
Dunham, C. A., Co.....28c/2
Haffman Specialty Co.....28c/3
Trane Co. 28a/8
Webster, Warren, & Co.....28c/9

steam or return steam
Dunham, C. A., Co.....28c/2
Haffman Specialty Co.....28c/3
Trane Co. 28a/8
Webster, Warren, & Co.....28c/9

travertine

reproduction
see plaster—texturing; point—texturing

treads

(see also flooring; specific material: as marble, etc.)

carborundum
see treads—safety

cork
Cork Insulation Co., Inc.....13e/4

fillers and surfacers for
American Abrasive Metals Co.....13a/9
American Mason Safety Tread Co.....13a/10
Donaldson Floors, Inc.....13c/7
Manhatton Terrazzo Brass Strip Co., Inc. 13c/2

granite
Cold Spring Granite Co.....4a/1

grating
Blaw-Knox Div.....13a/1
Borden Metal Products Co.....13a/2
Hendrick Mfg. Co.....13a/3; 2Bb/21
Irving Subway Grating Co., Inc.....13a/4
Kerrigan Iron Works, Inc.....13a/5
Reliance Steel Products Co.....13a/6
United States Gypsum Co.....13a/7
Wheeling Corrugating Co.....13a/8

quartzite
Crab Orchard Stone Co., Inc.....4a/14
Tennessee Stone Co., Inc.....4a/1B

rubber
Kleistone Rubber Co., Inc.....13e/B

safety
(see also treads—grating)
Alberene Stone Corp. of Virginia.....4a/11
American Abrasive Metals Co.....13a/9
American Mason Safety Tread Co.....13a/10
Blaw-Knox Div. 13a/1
Borden Metal Products Co.....13a/2
Cold Spring Granite Co.....4a/1
Cork Insulation Co., Inc.....13e/4
Hendrick Mfg. Co.....13a/3
Integra, Inc. 13a/11
Irving Subway Grating Co., Inc.....13a/4
Kerrigan Iron Works, Inc.....13a/5
Kleistone Rubber Co., Inc.....13e/8
Moulding, Thos., Floor Mfg. Co.....13d/7
National Terrazzo & Mosaic Assn., Inc..13c/3
Norton Co. 13c/4
Reliance Steel Products Co.....13a/6
United States Gypsum Co.....13a/7
Wheeling Corrugating Co.....13a/8
Wooster Products, Inc.....13a/12

slate
Structural Slate Co.....4a/17

soapstone
Alberene Stone Corp. of Virginia.....4a/11

terrazzo—precast
Integra, Inc. 13a/11
National Terrazzo & Mosaic Assn., Inc..13c/3

trench covers

see covers and frames

trim

blackboard
see blackboards—frames and mouldings for

extruded and drawn
see shapes

fiber
Borcloy Mfg. Co., Inc.....13i/1
Celotex Corp.....10a/4a
Marsh Wall Products, Inc.....13i/B
Masonite Corp.....13i/9
Tylac Co.....13i/10
Upson Co. 12b/4

frame and buck units
see frames—door—buck and trim units

hardware
see hardware—finish—door

metal
Aluminline Corp. 20/1
Aluminum Co. of America.....6a/1
American Brass Co.....6b/1
Anco Mfg. Co., Inc.....20/2
Armstrong Cork Co.....13e/2
Art Metal Construction Co.....15a/4
B & T Metals Co.....13J/1
Chase Brass & Copper Co., Inc.....13c/1
Dahlstrom Metallic Door Co.....15a/6
Erie Enameling Co.....6d/2
Flour City Ornamental Iron Co.....6e/6a
Himmel Brothers Co.....20/4
Illinois Bronze Works.....6e/8
Inland Steel Products Co.....12a/3
Jamestown Metal Corp.....15a/11
Kawneer Co. 20/5
Knapp Bros. Mfg. Co.....12a/4a
National Store Fronts.....20/7
Overly Mfg. Co.....15a/14
Reliance Art Metal Co.....15a/16
Revere Copper & Brass Inc.....6b/2
Sioux Metal Products Co.....20/9
Texlite Inc. 6d/5
Trussbilt Div. 15a/1Ba
Tyloc Co.....13i/10
Universal Corp. 16a/36
Vallas, Lionel 15a/19
Werner, R. D., Co., Inc.....13J/2
Wallaeger Steel Corp.....12a/9

metal—for panels
B & T Metals Co.....13J/1
Barclay Mfg. Co., Inc.....13i/1
Marsh Wall Products, Inc.....13i/8
Revere Copper & Brass Inc.....6b/2
Tylac Co.....13i/10
Werner, R. D., Co., Inc.....13J/2

plastic—for panels
Marsh Wall Products, Inc.....13i/B
Tile-Tex Co., Inc.....13d/B

sink
see sinks—trim for

soapstone or slate
Alberene Stone Corp. of Virginia.....4a/11
Structural Slate Co.....4a/17

tile
see tile

wood
Appalachian Hardwood Mfrs., Inc.....5a/1
Armstrong Cork Co.....13e/2

trim *cont.*

wood cont.
California Redwood Assn.....5a/2
Carr, Adams & Collier Co.....5c/1
Curtis Companies Service Bureau.....5c/2
Marsh Wall Products, Inc.....13i/B
Mutschler Bros. Co.....23a/15
Nuroco Woodwork Mfg. Div.....5c/3
Upson Co. 12b/4
Western Pine Assn.....5a/4
Wood Conversion Co.....10a/20

troffers

see lighting fixtures—fluorescent

troughs

chalk
see blackboards—chalk troughs for

eave
see gutters—roof

trucks

basket
Berger Mfg. Div.....22c/2

book
see library equipment

dish
Blickman, S., Inc.....23b/1
Von, John, Range Co.....23b/5

garment
Market Forge Co.....22b/6

tub
see laundry equipment

trusses

metal
American Institute of Steel Construction, Inc.....3d/1
Arch Roof Construction Co., Inc.....3b/7
Bethlehem Steel Co.....3d/2
Great Lakes Steel Corp.....3d/4
Macomber Inc. 3d/B
Robberson Steel Co.....1b/6
Shlagro Steel Products Corp.....15g/9

wood
Arch Roof Construction Co., Inc.....3b/7
Timber Structures, Inc.....3b/9

wood—laminated
Timber Structures, Inc.....3b/9
Unit Structures, Inc.....3b/10

tube systems

pneumatic
Grover Co. 31b/5
Lamson Corp. 32d/1

tubing

(see also pipe)

aluminum or aluminum alloy
Aluminum Co. of America.....6a/1

tubing cont.

copper or copper alloy
American Brass Co.....6b/1; 26a/1
Chase Brass & Copper Co., Inc.....26o/2
Revere Copper & Bross Inc.....26o/5; 27o/7

fittings for
see *fittings—pipe or tube*

steel or stainless steel
Allegheny Ludlum Steel Corp.....6c/1
Blum, Julius, & Co., Inc.....6e/5
Republic Steel Corp.....6c/5

welded
see *pipe—welded*

tubs

bath
see *bathtubs*

laundry
(see also sinks)
Richmond Radiator Co.....24a/2

tumblers

clothes
see *dryers—clothes*

turbines

steam
Worthington Pump & Machinery Corp..28o/10

turnstiles

Fiske, J. W., Iron Works.....6e/6
Vulcan Rail & Construction Co.....6h/3

turntables

Shlagro Steel Products Corp.....15g/9
Vasconcellos, Joseph, Inc.....22e/1

U

undercoats

see *enamels—undercoat*

underlayments

see *flooring—sub-surface leveling*

underpinning contractors

Eichleay Engineering Corp.....1b/2
MacArthur Concrete Pile Corp.....2a/2
Raymond Concrete Pile Co.....2a/3
Spencer, White & Prentis, Inc.....2o/4

unit

air conditioners
see *air conditioning—cabinet units*

coolers
see *coolers—unit*

heaters
see *heaters—unit*

urinals

Eljer Co. 24a/1
Just Mfg. Co.....23a/10
Richmond Radiator Co.....24o/2

urns

coffee
Blickman, S., Inc.....23b/1
Van, John, Range Co.....23b/5

V

vacuum breakers

Imperial Brass Mfg. Co.....24a/9
Sloan Valve Co.....24o/10

vacuum cleaners

portable
Lamson Corp. 32d/1
Masury-Young Co. 13h/2

stationary
Lamson Corp. 32d/1

valves

air vent—steam and return main—automatic
Trane Co. 28o/8

backwater
Boosey, Norman, Mfg. Co.....27e/2
Flockhart Foundry Co.....6h/2
Hoffman Specialty Co.....27e/3a
Josam Mfg. Co.....27e/4
Wade Mfg. Co.....27e/5

differential pressure
see *heating systems—hot water*

electrically, mechanically or hydraulically operated
Bell & Gossett Co.....28c/1
Webster, Warren, & Co.....2Bc/9

fire line
Allen, W. D., Mfg. Co.....27c/1
Elkhart Brass Mfg. Co.....27c/2

flush
Imperial Brass Mfg. Co.....24a/9
Sloan Valve Co.....24a/10
Speakman Co. 24a/12

gate
Boosey, Norman, Mfg. Co.....27e/2
Elkhart Brass Mfg. Co.....27c/2
Flockhart Foundry Co.....6h/2
Wade Mfg. Co.....27e/5
Walworth Co. 26a/8

globe, angle or cross
Allen, W. D., Mfg. Co.....27c/1
Baker Ice Machine Co., Inc.....2Ba/2a
Elkhart Brass Mfg. Co.....27c/2
Mueller Brass Co.....26a/7
Wolworth Co. 26o/8

hose
see *valves—fire line*

valves cont.

mixing—shower bath
Fiat Metal Mfg. Co.....24b/1
Josam Mfg. Co.....27e/4
Powers Regulator Co.....24a/11
Speakman Co. 24o/12
Symmons Engineering Co.....24a/13

mixing—thermastatic
Powers Regulator Co.....24a/11
Symmons Engineering Co.....24a/13
Triplex Heating Specialty Co., Inc.....28c/8

radiator—air vent—automatic
Hoffman Specialty Co.....28c/3

radiator supply
Bell & Gossett Co.....28c/1
Dunham, C. A., Co.....28c/2
Hoffman Specialty Co.....2Bc/3
Trane Co. 2Ba/8
Webster, Warren, & Co.....28c/9

reducing, regulating or controlling flow
Bell & Gossett Co.....2Bc/1
Mueller Brass Co.....26a/7
Thrush, H. A., & Co.....28c/7
Trane Co. 28o/8

reducing, regulating or controlling pressure
Bell & Gossett Co.....28c/1
Dunham, C. A., Co.....28c/2
Elkhart Brass Mfg. Co.....27c/2
Powers Regulator Co.....24a/11
Thrush, H. A., & Co.....2Bc/7
Triplex Heating Specialty Co., Inc.....28c/8
Webster, Warren, & Co.....28c/9

refrigeration
Baker Ice Machine Co., Inc.....28a/2a
Worthington Pump & Machinery Corp..28a/10

relief—pressure, vacuum or temperature—for domestic hot water systems
Bell & Gossett Co.....28c/1
Hoffman Specialty Co.....28c/3
McDonnell & Miller, Inc.....2Bc/4
Thrush, H. A., & Co.....2Bc/7
Trane Co. 2Ba/B
Triplex Heating Specialty Co., Inc.....28c/8
Webster, Warren, & Co.....28c/9

sewer
see *valves—backwater*

vapor seal

see *insulation; paper and felts—condensation retardant*

varnish

floor
Breinig Brothers, Inc.....14/1a
Devoe & Raynolds Co., Inc.....14/2
du Pont de Nemours, E. I., & Co., (Inc.).14/3
Empire Varnish Co.....14/5
Glidden Co. 14/6
Keystone Varnish Co.....14/7
O'Brien Corp.....14/12
Paragan Paint & Varnish Corp.....14/13
Patterson-Sargent Co. 14/14
Pittsburgh Plate Glass Co.....14/15
Pratt & Lambert-Inc.....14/16

varnish cont.

floor cont.
Sherwin-Williams Co. 14/19o
Sonneborn, L., Sons, Inc.....9a/17
Standard Varnish Works.....14/19b
U. S. Gutta Percha Paint Co.....14/21

spar
Devoe & Raynolds Co., Inc.....14/2
du Pont de Nemours, E. I., & Co., (Inc.).14/3
Glidden Co. 14/6
Keystone Vornish Co.....14/7
O'8rien Corp.....14/12
Poragon Paint & Varnish Corp.....14/13
Potterson-Sargent Co. 14/14
Pittsburgh Plote Gloss Co.....14/15
Pratt & Lambert-Inc.....14/16
Sherwin-Willioms Co. 14/19a
Standard Vornish Works.....14/19b
U. S. Gutta Percha Paint Co.....14/21

stain
du Pont de Nemours, E. I., & Co., (Inc.).14/3
Empire Varnish Co.....14/5
O'8rien Corp.....14/12
Paragon Paint & Vornish Corp.....14/13
Pittsburgh Plote Gloss Co.....14/15
Sherwin-Williams Co. 14/19o
Sonneborn, L., Sons, Inc.....9a/17

vaults

doors for
see doors—vault

fire-resistive fronts
Diebold, Inc. 22a/7
Herring-Hall-Marvin Safe Co.....22a/8
Mosler Safe Co.....22a/9

lights for
see lights—sidewalk, roof, etc.

safe deposit and bank
Diebold, Inc. 22a/7
Herring-Hall-Marvin Safe Co.....22a/8
Mosler Safe Co.....22a/9

veneers

(see also panels)

adhesives for
see adhesives

granite
Cold Spring Granite Co.....4o/1
Fletcher, H. E., Co.....4o/3
National Building Granite Quarries Assn., Inc.....4o/5

marble
Vermont Marble Co.....4a/10

plastic—wood backed
Formica Insulation Co.....13i/4

slate
Vermont Structural Slate Co., Inc.....13b/13

wood
(see also plywood)
Appalachian Hardwood Mfrs., Inc.....5o/1
Douglas Fir Plywood Assn.....5b/1
Farley & Loetscher Mfg. Co.....13i/3
Formica Insulation Co.....13i/4

veneers cont.

wood cont.
Morsh Woll Products, Inc.....13i/8
Mengel Co. 5b/3
Roddis Plywood Corp.....15c/8
United States Plywood Corp.....5b/3; 13i/13
Veneer Association 5a/3

wood—cloth backed
United States Plywood Corp.....13i/12

wood—metal backed
Mengel Co. 5b/3
United States Plywood Corp.....5b/3

venetian blinds

see blinds—venetian

vent connections

roof
Barrett Div. 8a/2
Josam Mfg. Co.....27e/4
Revere Copper & Brass Inc.....8c/9

ventilating

contractors
see air conditioning—contractors

systems
see air conditioning

ventilators

(see also blowers; fans)

attic
Acme Equipment Co.....28b/5
Airolite Co. 18c/1
American Coolair Corp.....28b/6
Bergmann, H. H. W., Co.....19c/1
Donley Brothers Co.....28g/5
Eagle-Picher Co. 10a/5
Ellison Louvre Co., Inc.....18c/3
Emerson Electric Mfg. Co.....28b/7
Hunter Fan & Ventilating Co., Inc.....28b/8
Ilg Electric Ventilating Co.....28b/9
Riesner Vent Brick Corp.....19c/2
Schwitzer-Cummins Co. 28b/12
Shepler Mfg. Co.....28b/13

barn
see ventilators—roof

bases for
Allen Ventilator Div.....19b/1
American Steel Bond Co.....19b/2
Arex Co. 19b/3
Burt Mfg. Co.....19b/4
Hirschmon-Pohle Co. Inc.....19b/7
Pennsylvania Wire Glass Co.....19b/9
Robertson, H. H., Co.....19b/10
Swartwout Co. 19b/11

blower-filter units
see blowers—ventilating or exhaust

ceiling
Airolite Co. 18c/1
American Coolair Corp.....28b/6
Anemostat Corp. of America.....28b/17
Barber-Colman Co.....28b/18
Contractors Foundry 6h/1

ventilators cont.

ceiling cont.
Emerson Electric Mfg. Co.....28b/7
Pryne & Co., Inc.....28b/11
Pyle-National Co. 28b/21o
Riesner Vent Brick Corp.....19c/2
Schwitzer-Cummins Co. 28b/12
Shepler Mfg. Co.....28b/13
Trade-Wind Motorfans, Inc.....28b/14
Tuttle & Bailey, Inc.....28b/22
Ventilouvre Co., Inc.....18c/5
Victor Electric Products, Inc.....28b/15

controls for
see controls—damper

curbs for
Hirschmon-Pohle Co. Inc.....19b/7

door panel, transom, etc.—louvered
see louvers—door—ventilating

fan unit
see fans

foundation or basement
Bruce, E. L., Co.....13g/2
Contractors Foundry 6h/1
Donley Brothers Co.....28g/5
Hohmann & Barnard, Inc.....3f/3
Majestic Co. 28g/8
Riesner Vent Brick Corp.....19c/2
Sargent Building Specialties Inc.....25a/4
United States Register Co.....28b/23

glass block construction
Airolite Co. 18c/1
Ellison Louvre Co., Inc.....18c/3
Hope's Windows Inc.....16o/20
Marmet Corp. 7c/5
Ventilouvre Co., Inc.....18c/5
Winco Ventilator Co., Inc.....7c/6

grille
see grilles; dampers or registers

kitchen
see kitchen equipment—fans and ventilators

lighting fixture combination
see bathroom accessories—lighting fixtures—blower combination; louvers—light fixture combination

lightproof
Airolite Co. 18c/1
Bar-Ray Products, Inc.....21d/1
Ellison Louvre Co., Inc.....18c/3
Ray Proof Corp.....21d/2
Ventilouvre Co., Inc.....18c/5
Wilson, J. G., Corp.....15e/8

louvered
see louvers; ventilators—wall—louver or grille

oil storage tank
Riesner Vent Brick Corp.....19c/2

partition, closet, etc.
Airolite Co. 18c/1
Ellison Louvre Co., Inc.....18c/3
Ventilouvre Co., Inc.....18c/5

pipe—acidproof
see pipe—ventilating—acidproof

roof—continuous—open roof
Swartwout Co. 19b/11

ventilators cont.

roof—continuous ridge

American Steel Bond Co.....19b/2
Arex Co. 19b/3
Burt Mfg. Co.....19b/4
Hirschmon-Pohle Co. Inc.....19b/7
Penn Ventilating Co.....19b/8
Pennsylvonio Wire Gloss Co.....19b/9
Robertson, H. H., Co.....19b/10
Swortwout Co. 19b/11
Von Noorden, E., Co.....19b/12

roof—louvered—gravity or power

Century Fan & Ventilator Co.....19b/5
Dovidson Fon Co.....19b/6
Hirschmon-Pohle Co. Inc.....19b/7
Hunter Fon & Ventiloting Co., Inc....28b/8

roof—power driven

Allen Ventilotor Div.....19b/1
Americon Steel Bond Co.....19b/2
Arex Co. 19b/3
Burt Mfg. Co.....19b/4
Century Fon & Ventilator Co.....19b/5
Davidsan Fan Co.....19b/6
Hirschman-Pohle Co. Inc.....19b/7
Ilg Electric Ventiloting Co.....28b/9
Penn Ventilating Co.....19b/8
Pennsylvanio Wire Glass Co.....19b/9
Robertson, H. H., Co.....19b/10
Super Steel Products Co.....19o/7
Swortwout Co. 19b/11
Trone Co. 28o/8
Von Noorden, E., Co.....19b/12

roof—revolving

Allen Ventilator Div.....19b/1
Burt Mfg. Co.....19b/4
Hirschman-Pohle Co. Inc.....19b/7
Penn Ventiloting Co.....19b/8
Swortwout Co. 19b/11

roof—stotionory

Allen Ventilotor Div.....19b/1
Americon Steel Bond Co.....19b/2
American 3 Woy-Luxfer Prism Co.....19o/2
Arex Co. 19b/3
Bergmann, H. H. W., Co.....19c/1
Burt Mfg. Co.....19b/4
Century Fon & Ventilotor Co.....19b/5
Donley Brothers Co.....28g/5
Hirschmon-Pohle Co. Inc.....19b/7
Knight, Mourice A.....26b/3
Penn Ventiloting Co.....19b/8
Pennsylvonio Wire Gloss Co.....19b/9
Robertson, H. H., Co.....19b/10
Super Steel Products Co.....19o/7
Swortwout Co. 19b/11
Vollas, Lionel 15a/19
Von Noorden, E., Co.....19b/12

ship

Arex Co. 19b/3
Wing, L. J., Mfg. Co.....28d/21

stoge

Americon 3 Woy-Luxfer Prism Co.....19o/2

unit

American Coolair Corp.....28b/6
Trone Co. 28o/8
Westinghouse Electric Corp.....28a/9
Worthington Pump & Mochinery Corp..28o/10

ventilators cont.

wall—brick sizes

Hohmonn & Bornard, Inc.....3f/3
Mojestic Co. 28g/8
Riesner Vent Brick Corp.....19c/2
Sorgent Building Specialties Inc.....25o/4

wall—fan or blower unit

Acme Equipment Co.....28b/5
Allen Ventilator Div.....19b/1
Americon Blower Corp.....28a/2
Americon Cooloir Corp.....28b/6
Claroge Fon Co.....28o/5
Eagle-Picher Co. 10o/5
Emerson Electric Mfg. Co.....28b/7
Hunter Fon & Ventiloting Co., Inc.....28b/8
Ilg Electric Ventilating Co.....28b/9
Pryne & Co., Inc.....28b/11
Schwitzer-Cummins Co. 28b/12
Shepler Mfg. Co.....28b/13
Trade-Wind Motorfans, Inc.....28b/14
Trane Co. 28a/8
Victor Electric Products, Inc.....28b/15
Westinghouse Electric Corp....23o/20; 28o/9
Winco Ventilator Co., Inc.....7c/6

wall—louver or grille

Airalite Co. 18c/1
Americon Coolair Corp.....28b/6
Americon Foundry & Furnace Co.....28e/1
Americon Warming & Ventiloting Co..28b/16
Anemostat Corp. of America.....28b/17
Arex Co. 19b/3
Barber-Colmon Co.....28b/18
Bergmann, H. H. W., Co.....19c/1
Contractors Foundry 6h/1
Donley Brothers Co.....28g/5
Ellison Louvre Co., Inc.....18c/3
Emerson Electric Mfg. Co.....28b/7
Fiske, J. W., Iron Works.....6e/6
Hendrick Mfg. Co.....28b/21
Hohmonn & Bornard, Inc.....3f/3
Hunter Fon & Ventiloting Co., Inc.....28b/8
Ilg Electric Ventiloting Co.....28b/9
Pyle-National Co. 28b/21o
Riesner Vent Brick Corp.....19c/2
Sargent Building Specialties Inc.....25o/4
Shepler Mfg. Co.....28b/13
Swortwout Co. 19b/11
Trade-Wind Motorfans, Inc.....28b/14
Tuttle & Bailey, Inc.....28b/22
United States Register Co.....28b/23
Ventilouvre Co., Inc.....18c/5
Victor Electric Products, Inc.....28b/15

verandas

metal

see metal—ornamental

vermiculite

see insulation; plaster; concrete; etc.

vibration control

see absorbers

vocational furniture

see furniture—vocational

W

wainscoting

see specific material; trim; veneers; panels; wallboard; glass—structural; etc.

wall construction

(see also panels)

concrete—metal forms

Economy Forms Corp.....3e/2o

concrete slab—precast

Cemenstone Corp. 3b/2
Flexicare Co., Inc.....3c/15
Lith-I-Bar Co.....3d/7

frame

Celotex Corp.....10a/4a

wall coverings

canvas

Blonk, Frederic, & Co., Inc.....13k/1
Standard Coated Products.....13k/2

cloth backed wood veneer

United States Plywood Corp.....13i/12

cork

Cork Insulation Co., Inc.....13e/4
Kennedy, David E., Inc.....13d/5

fabric

Blonk, Frederic, & Co., Inc.....13k/1
Standard Coated Products.....13k/2

fiberboard

see wallboard—fiber

glass unit—flexible cloth-backed

United States Plywood Corp.....13i/12

linoleum

Armstrong Cork Co.....13e/2
Congoleum-Nairn Inc.....13e/3

metal

see panels—metal

plastic sheeting—solid, laminated or coated

Blonk, Frederic, & Co., Inc.....13k/1
Farley & Loetscher Mfg. Co.....13i/3
Formica Insulation Co.....13i/4
Rahm & Haas Co.....7d/1
Tile-Tex Co., Inc.....13d/8
United States Plywood Corp....13i/12; 13i/13

plywood

see wallboard; plywood; panels

porcelain enameled

see sheet, strip, plate—vitreous or porcelain enameled

rubber

Kleistone Rubber Co., Inc.....13e/8

tile

see tile

trim for

see trim

unit steel

see panels—metal

wall coverings cont.

wood
see *panels—wood—natural*

wood veneer
see *panels—veneered—wood; wallboard; veneers—wood*

wall linings

unit steel
see *panels—metal*

wallboard

(see also insulation—building)

acoustical
Celatex Corp.....10a/4a
Fir-Tex Insulating Board Co.....10a/6
Insulite Div. 10a/10
National Gypsum Co.....12b/2
Owens-Corning Fiberglas Corp.....10c/1
Simpson Logging Co.....10a/16
United States Gypsum Co.....11a/12
Wood Conversion Co.....10a/20

asbestos-cement
Asbestone Corp. 8c/2
Celotex Corp.....10a/4a
Johns-Manville 12b/1a; 21a/3
Keasbey & Mattison Co.....8b/5

cement for
see *cement—mastic—for application of wallboard, flooring, etc.*

cork
Armstrong Cork Co.....10b/1
Cork Insulation Co., Inc.....13e/4

fiber
Armstrong Cork Co.....13e/2
Barclay Mfg. Co., Inc.....13i/1
Celotex Corp.....10a/4a
Fir-Tex Insulating Board Co.....10a/6
Flintkote Co. 10a/7
Homasote Co. 10a/9
Insulite Div. 10a/10
Marsh Wall Products, Inc.....13i/8
Masonite Corp.....13i/9
National Gypsum Co.....12b/2
Simpson Logging Co.....10a/16
Tylac Co.....13i/10
United States Gypsum Co.....10a/19
Upson Co. 12b/4
Wood Conversion Co.....10a/20

gypsum
Celotex Corp. 10a/4a; 12b/1b
National Gypsum Co.....12b/2
United States Gypsum Co.....12b/3

joint finishers
Celotex Corp.....10a/4a; 12b/1b
Insulite Div. 10a/10
Johns-Manville 12b/1a
National Chemical & Mfg. Co.....14/10
National Gypsum Co.....12b/2
Tylac Co.....13i/10
United States Gypsum Co.....12b/3; 14/22
Wesco Waterpaints, Inc.....14/23

marbleized finish
(see also panels)
Formica Insulation Co.....13i/4
Marsh Wall Products, Inc.....13i/8

wallboard cont.

mouldings
see *trim*

plywood
Douglas Fir Plywood Assn.....5b/1
Mengel Co. 5b/3
Roddis Plywood Corp.....15c/8
United States Plywood Corp.....5b/3; 13i/12
Veneer Association 5a/3

plywood—wood veneer
Formica Insulation Co.....13i/4
Mengel Co. 5b/3
Roddis Plywood Corp.....15c/8
United States Plywood Corp.....5b/3
Veneer Association 5a/3

tiled
Armstrong Cork Co.....13e/2
Barclay Mfg. Co., Inc.....13i/1
Celotex Corp.....10a/4a
Flintkote Co. 10a/7
Insulite Div. 10a/10
Johns-Manville 12b/1a
Marsh Wall Products, Inc.....13i/8
Masonite Corp.....13i/9
National Gypsum Co.....12b/2
Simpson Logging Co.....10a/16
Tylac Co.....13i/10
United States Gypsum Co.....10a/19; 12b/3
Upson Co. 12b/4
Wood Conversion Co.....10a/20

wood grain finish
Formica Insulation Co.....13i/4
Marsh Wall Products, Inc.....13i/8
Mengel Co. 5b/3
National Gypsum Co.....12b/2
United States Gypsum Co.....12b/3
United States Plywood Corp.....5b/3

x-ray protective
Bar-Ray Products, Inc.....21d/1
General Lead Construction Corp.....21d/3
Ray Proof Corp.....21d/2

walls

see *partitions*

acoustical
see *tile—acoustical; partitions—sound retardant*

area
see *area walls*

wardrobe assemblies

hospital
Watson Mfg. Co., Inc.....22g/3

wardrobes

blackboard or bulletin board combination
Austral Sales Corp.....17b/14
Fairhurst, John T., Co.....22c/3
Richards-Wilcox Mfg. Co.....22c/7

disappearing door
Austral Sales Corp.....17b/14
Fairhurst, John T., Co.....22c/3
Richards-Wilcox Mfg. Co.....22c/7

wardrobes cont.

metal or open mesh
All-Steel Equipment Inc.....22c/1
Austral Sales Corp.....17b/14
Berger Mfg. Div.....22c/2
Diebold, Inc. 15a/8
Lyon Metal Products, Inc.....22c/4
Medart, Fred, Mfg. Co.....22c/5
Penn Metal Corp. of Penna.....22c/6
Standard Steel Equipment Co., Inc.....22c/8
Virginia Metal Products Corp.....15a/20
Vogel-Peterson Co. 22c/9
Watsan Mfg. Co., Inc.....22a/11; 22g/3

wood
Fairhurst, John T., Co.....22c/3
Richards-Wilcox Mfg. Co.....22c/7

warmers

blanket
see *blanket warmers*

plate
see *cafeteria equipment; food preparation and service equipment*

washers

air
Air & Refrigeration Corp.....28a/1
American Blower Corp.....28a/2
Clarage Fan Co.....28a/5
Westinghouse Electric Corp.....28a/9

animal cage
Washburn & Granger, Inc.....25a/5

clothes
Chicago Dryer Co.....24d/1
Frigidaire Div. 23a/4a
General Electric Co.....23a/5
Hotpoint Inc. 23a/9
Westinghouse Electric Corp.....23a/20

dish
see *dishwashing machines*

garbage can
Kellogg-Mann Corp. 25a/2a
Washburn & Granger, Inc.....25a/5

washroom accessories

(see also bathroom accessories)

advisory service
Scott Paper Co.....24c/16

watchman's tour systems

control recording or signaling
Automatic Electric Co.....31b/2

water

chillers
Filtrine Mfg. Co.....27a/16
Trane Co. 28a/8
Westinghouse Electric Corp.....28a/9

closets
see *closets—water*

products

water cont.

coolers
see coolers—*drinking water*

cooling systems
see coolers—*refrigeration*

filters
see *filters*

heaters
see *heaters—water*

paint
see *paint—water thinned*

pumps
see *water—supply systems*

purification
see *chlorine control apparatus; filters*

softeners and treating equipment
Culligan Zealite Co.....27a/14
Filtrine Mfg. Co.....27a/16
Permutit Co. 27a/17
Rheem Mfg. Co.....27a/8
Wallace & Tiernan Co., Inc.....22f/6
Worthington Pump & Machinery Corp..28a/10

supply systems
Aurora Pump Co.....27d/1
Myers, F. E., & Bro. Co.....27d/2
Yeomans Bros. Co.....27d/3

waterfront structure contractors and engineers

Spencer, White & Prentis, Inc.....2a/4

waterproofing

admixtures
Adensite Co., Inc.....9a/1
Anti-Hydro Waterproofing Co.....9a/2
Aquabar Co. 9a/3
Ceresit Waterproofing Corp.....9a/6
Horn, A. C., Co., Inc.....9a/10
Master Builders Co.....9a/13
Medusa Portland Cement Co.....4e/2
Prima Products Inc.....9a/15
Sonnebarn, L., Sons, Inc.....9a/17
Tech Brothers Inc.....9a/19
Truscan Laboratories.....9a/20
Western Waterproofing Co.....9a/22
Western Waterproofing Cos.....9a/21

asphaltic
see *waterproofing—paint and compounds*

cement coating
Adensite Co., Inc.....9a/1
Anti-Hydro Waterproofing Co.....9a/2
Aquabar Co. 9a/3
Armstrong Cork Co.....10b/1
Cabot, Samuel, Inc.....14/1
Flintkote Co. 9a/7
Glidden Co. 9a/8; 14/6
Horn, A. C., Co., Inc.....9a/10
Kedmont Mfg. & Waterproofing Co...9a/10a
Master Builders Co.....9a/13
Minwax Co., Inc.....9a/14
Prima Products Inc.....9a/15
Sika Chemical Corp.....9a/16
Sonnebarn, L., Sons, Inc.....9a/17

waterproofing cont.

cement coating cont.
Standard Dry Wall Products Inc.....9a/18
Stanhard Co. 13c/12
Tech Brothers Inc.....9a/19
Tremco Mfg. Co.....7b/3
Truscan Laboratories.....9a/20
Western Waterproofing Co.....9a/22
Western Waterproofing Cos.....9a/21

combination asphalt or tar, felt and paper
see *waterproofing—membrane method—fabric*

combination metal sheet, asphalt, felt, etc.
(see also flashings)
Chase Brass & Copper Co., Inc.....8c/4
Mitchell-Rand Mfg. Co.....8d/3
Sisalkraft Co. 9c/2

contractors
Brisk Waterproofing Co., Inc.....9a/4
Consolidated Chimney Co.....28g/1
Guaranteed Waterproofing Co.....1b/4
Many, B. J., Co., Inc.....1b/5
Western Waterproofing Co.....9a/22
Western Waterproofing Cos.....9a/21

felt, cloth or fabric
see *waterproofing—membrane method—fabric*

foundation coating
see *waterproofing—cement coating*

integral
Adensite Co., Inc.....9a/1
Anti-Hydro Waterproofing Co.....9a/2
Aquabar Co. 9a/3
Ceresit Waterproofing Corp.....9a/6
Horn, A. C., Co., Inc.....9a/10
Kedmont Mfg. & Waterproofing Co....9a/10a
Master Builders Co.....9a/13
Medusa Portland Cement Co.....4e/2
Sika Chemical Corp.....9a/16
Sonnebarn, L., Sons, Inc.....9a/17
Tech Brothers Inc.....9a/19
Truscan Laboratories.....9a/20

iron method
Aquabar Co. 9a/3
Ceresit Waterproofing Corp.....9a/6
Kedmont Mfg. & Waterproofing Co....9a/10a
Master Builders Co.....9a/13
Western Waterproofing Co.....9a/22
Western Waterproofing Cos.....9a/21

membrane method—fabric
Armstrong Cork Co.....10b/1
Barrett Div. 8a/2
Brisk Waterproofing Co., Inc.....9a/4
Cork Import Corp.....10b/2
Flintkote Co. 9a/7
Horn, A. C., Co., Inc.....9a/10
Kedmont Mfg. & Waterproofing Co....9a/10a
Kappers Co., Inc.....8a/6
Lexington Supply Co.....9a/12
Minwax Co., Inc.....9a/14
Sandell Mfg. Co., Inc.....8d/4
Tech Brothers Inc.....9a/19
Wasco Flashing Co.....8d/6

membrane method—metal
see *flashings*

waterproofing cont.

point and compounds
Adensite Co., Inc.....9a/1
Anti-Hydro Waterproofing Co.....9a/2
Aquabar Co. 9a/3
Armstrong Cork Co.....10b/1
Barrett Div. 8a/2
Cabot, Samuel, Inc.....14/1
Ceresit Waterproofing Corp.....9a/6
Cork Import Corp.....10b/2
Empire Varnish Co.....14/5
Flintkote Co. 9a/7
Glidden Co. 9a/8; 14/6
Haynes Products Co.....9a/9
Horn, A. C., Co., Inc.....9a/10
Kedmont Mfg. & Waterproofing Co....9a/10a
Kappers Co., Inc.....8a/6
Kuhls, H. B. Fred.....9a/11
Master Builders Co.....9a/13
Medusa Portland Cement Co.....4e/2
Minwax Co., Inc.....9a/14
Pattersan-Sargent Co. 14/14
Pecora Paint Co., Inc.....7b/2
Pittsburgh Corning Corp.....7c/3
Pittsburgh Plate Glass Co.....14/15
Prima Products Inc.....9a/15
Rust-Oleum Corp. 14/19
Sika Chemical Corp.....9a/16
Sonnebarn, L., Sons, Inc.....9a/17
Standard Dry Wall Products Inc.....9a/18
Stanhard Co. 13c/12
Tech Brothers Inc.....9a/19
Tremco Mfg. Co.....7b/3
Truscan Laboratories.....9a/20; 14/20
Tuckahoe Stucco Corp.....4e/7
Universal Atlas Cement Co.....4b/3
Wesco Waterpaints, Inc.....14/23
Western Waterproofing Co.....9a/22
Western Waterproofing Cos.....9a/21

paper
see *paper and felts*

protection course
Kappers Co., Inc.....8a/6

protective coatings
see *waterproofing—paint and compounds*

spandrel
see *flashings—sheet metal; waterproofing—membrane method—fabric*

transparent
Adensite Co., Inc.....9a/1
Anti-Hydro Waterproofing Co.....9a/2
Aquabar Co. 9a/3
Cabot, Samuel, Inc.....14/1
Ceresit Waterproofing Corp.....9a/6
Empire Varnish Co.....14/5
Glidden Co. 9a/8
Haynes Products Co.....9a/9
Horn, A. C., Co., Inc.....9a/10
Kedmont Mfg. & Waterproofing Co....9a/10a
Kuhls, H. B. Fred.....9a/11
Master Builders Co.....9a/13
Minwax Co., Inc.....9a/14
Pittsburgh Plate Glass Co.....14/15
Sika Chemical Corp.....9a/16
Sonnebarn, L., Sons, Inc.....9a/17
Tech Brothers Inc.....9a/19
Tremco Mfg. Co.....7b/3
Truscan Laboratories.....9a/20; 14/20

wax

floor or wall

Acme Asbestos Covering & Flooring Co..13c/6
Armstrong Cork Co.....13e/2
Breinig Brothers, Inc.....14/1a
Bruce, E. L., Co.....13g/2
du Pont de Nemours, E. I., & Co., (Inc.).14/3
Duraflex Corp. 13d/1
Hillyard Sales Cos.....13h/1
Horn, A. C., Co., Inc.....9a/10
Master Builders Co.....9a/13
Masury-Young Co. 13h/2
Minwax Co., Inc.....14/9
Moulding, Thos., Floor Mfg. Co.....13d/7
Pittsburgh Plate Glass Co.....14/15
Pratt & Lambert-Inc.....14/16
Sonneborn, L., Sons, Inc.....9a/17

stain finish

Cabot, Samuel, Inc.....14/1
du Pont de Nemours, E. I., & Co., (Inc.).14/3
Master Builders Co.....9a/13
Minwax Co., Inc.....14/9
Sanneborn, L., Sons, Inc.....9a/17

waxing machines

Hillyard Sales Cos.....13h/1
Masury-Young Co. 13h/2

weather

indicators

see *indicators—temperature; indicators—wind velocity*

weatherstrips

metal

Accurate Metal Weather Strip Co., Inc..18b/1
Allmetal Weatherstrip Co.....18b/2
Chamberlin Co. of America.....18b/3
E-Z Tight, Inc.....18b/4
Master Metal Strip Service, Inc.....17a/5
Monarch Metal Weatherstrip Corp.....18b/5
Quaker City Metal Weatherstrip Co...18b/6
Reese Metal Weather Strip Co.....18b/7
Security Co. 18b/8
Turner & Seymour Mfg. Co.....17a/6a

threshold combination

Accurate Metal Weather Strip Co., Inc..18b/1
Allmetal Weatherstrip Co.....18b/2
Chamberlin Co. of America.....18b/3
E-Z Tight, Inc.....18b/4
Monarch Metal Weatherstrip Corp.....18b/5
Quaker City Metal Weatherstrip Co....18b/6
Reese Metal Weather Strip Co.....18b/7
Security Co. 18b/8

weathervanes

American Flagpole Equipment Co.....6f/1
Fiske, J. W. Iron Works.....6e/6
Lingo, John E., & Son, Inc.....6f/3

welding

consultation and testing

Pittsburgh Testing Laboratory.....1c/1

electrodes

see *electrodes—welding*

wickets

see *grilles*

windows

aluminum

A.B.C. Steel Equipment Co., Inc.....16a/1
Adams & Westlake Co.....16a/2
Air-Vue Products Corp.....16a/2a
Alsco, Inc. 18a/1a
Aluminum Window Corp.....16a/2b
Aluminum Window Mfrs. Assn.....16a/3
Bayley, William, Co.....16a/4; 16a/5
Cupples Products Corp.....16a/11; 16a/12
Flour City Ornamental Iron Co.6e/6a; 16a/15
General Bronze Corp.....16a/17
Geyser, E. K., & Co.....16a/18
Kaufmann Corp. 16a/21
Marmet Corp. 7c/5
National Firewarks, Inc.....16a/23
Reynolds Metals Co.....16a/25a
Robertson, H. H., Co.....19a/6
Rossbach & Sons, Inc.....16a/26
Security Products Co.....16a/27
Sterling Windows, Inc.....16a/29
Sunlight Metal Products Co.....16a/31
Super Steel Products Co.....19a/7
Thorn, J. S., Co.....16a/32
Universal Corp. 16a/36
Valley Metal Products Co.....16a/37
VentiLite Corp. 16a/37a
Wore Laboratories, Inc.....16a/38
Williams & Williams Products Corp...16a/39

awning type

(see also hardware)

Craft Steel Products, Inc.....16a/10
Dalmo Continental Inc.....16b/2
Detroit Steel Products Co.....16a/13
Gate City Sash & Door Co.....16b/3
Security Products Co.....16a/27
Truscon Steel Co.....16a/34
Universal Window Co.....17b/17

basement and utility

Aluminum Window Corp.....16a/2b
Andersen Corp. 16b/1
Bayley, William, Co.....16a/5
Bliss Steel Products Corp.....16a/6
Carr, Adams & Collier Co.....5c/1
Ceco Steel Products Corp.....16a/7
Crittall-Federal, Inc.....16a/9
Croft Steel Products, Inc.....16a/10
Curtis Companies Service Bureau.....5c/2
Dalma Continental Inc.....16b/2
Detroit Steel Products Co.....16a/13
Donley Brothers Co.....28g/5
Flynn, Michael, Mfg. Co.....16a/16
Goodcraft Metal Products Co.....16a/19
Hohmann & Barnard, Inc.....3f/3
Hope's Windows Inc.....16a/20
Mesker Bros.....16a/22
Steelcraft Mfg. Co.....16a/28
Thorn, J. S., Co.....16a/32
Truscan Steel Co.....16a/34
Venta Steel Products Co., Inc.....16a/37b
Ware Laboratories, Inc.....16a/38

blinds for

see *blinds*

windows cont.

bronze

Flour City Ornamental Iron Co.....16a/15
General Bronze Corp.....16a/17
Rossbach & Sons, Inc.....16a/26
Universal Corp. 16a/36
Williams & Williams Products Corp...16a/39

burglarproof

see *windows—detention*

casement

A. B. C. Steel Equipment Co., Inc.....16a/1
Alsco, Inc. 18a/1a
Aluminum Window Mfrs. Assn.....16a/3
Andersen Corp. 16b/1
Bayley, William, Co.....16a/5
Bliss Steel Products Corp.....16a/6
Carr, Adams & Collier Co.....5c/1
Ceco Steel Products Corp.....16a/7
Crittall-Federal, Inc.....16a/9
Craft Steel Products, Inc.....16a/10
Curtis Companies Service Bureau.....5c/2
Dalmo Continental Inc.....16b/2
Detroit Steel Products Co.....16a/13
Flour City Ornamental Iron Co.....6e/6a
Flynn, Michael, Mfg. Co.....16a/16
General Bronze Corp.....16a/17
Goodcraft Metal Products Co.....16a/19
Hope's Windows Inc.....16a/20
Mesker Bros.....16a/22
Reynolds Metals Co.....16a/25a
Rolscreen Co. 16b/6
Steelcraft Mfg. Co.....16a/28
Sunlight Metal Products Co.....16a/31
Thorn, J. S., Co.....16a/32
Truscon Steel Co.....16a/34
Universal Corp. 16a/36
Vollas, Lionel 15a/19
Volley Metal Products Co.....16a/37
Vento Steel Products Co., Inc.....16a/37b
Ware Laboratories, Inc.....16a/38
Williams & Williams Products Corp...16a/39

casement—ventilator combination

A. B. C. Steel Equipment Co., Inc.....16a/1
Bayley, William, Co.....16a/5
Ceco Steel Products Corp.....16a/7
Crittall-Federal, Inc.....16a/9
Detroit Steel Products Co.....16a/13
Flynn, Michael, Mfg. Co.....16a/16
General Bronze Corp.....16a/17
Hope's Windows Inc.....16a/20
Mesker Bros.....16a/22
Sunlight Metal Products Co.....16a/31
Thorn, J. S., Co.....16a/32
Truscon Steel Co.....16a/34
Williams & Williams Products Corp...16a/39

cleaners' safety devices for

Harrison-Weise Co.....17a/11
Hohmann & Barnard, Inc.....3f/3
Standard American Window Safety Device Co. 17a/12

coal

see *chutes—coal*

cold storage or refrigerator

Butcher Boy Cold Storage Door Co....22b/2

products

windows cont.

combination—screen and storm sash

Alsca, Inc. 18a/1a
Aluminum Windaw Carp.....16a/2b
Andersen Carp. 16b/1
Burrowes Carp. 18a/2
Ceca Steel Products Carp.....16a/7; 18a/3
Croft Steel Products, Inc.....16a/10
Cupples Products Carp.....16a/11
Curtis Companies Service Bureau.....5c/2
Eagle-Picher Co. 10a/5
Kane Mfg. Carp.....18o/6
Kaufmonn Carp. 16a/21
Natianal Firewarks, Inc.....16a/23
Russell, F. C., Ca.....18a/7
Sterling Windaws, Inc.....16a/29
Trane Co.....16a/34

combination—window and casing

see specific type of window

continuous

Andersen Carp. 16b/1
8ayley, Williom, Co.....16a/5
Bliss Steel Products Carp.....16a/6
Ceco Steel Products Carp.....16a/7
Crittall-Federal, Inc.....16a/9
Detrait Steel Products Ca.....16a/13
Flynn, Michael, Mfg. Co.....16a/16
Geyser, E. K., & Co.....16a/18
Mesker Bras.....16a/22
Pennsylvania Wire Glass Ca.....19o/4
Robertsan, H. H., Co.....19a/6
Tharn, J. S., Co.....16a/32
Truscan Steel Ca.....16a/34
Valley Metal Products Ca.....16a/37

corrugated wire glass

Pennsylvania Wire Glass Ca.....19a/4
Robertsan, H. H., Co.....19a/6

detention

Bayley, William, Ca.....16a/5
Ceca Steel Products Carp.....16o/7
Crittall-Federal, Inc.....16a/9
Detrait Steel Products Ca.....16a/13
Flynn, Michael, Mfg. Ca.....16a/16
Hope's Windows Inc.....16a/20
Mesker 8ros.....16a/22
Pameroy, S. H., Ca.....16a/24
Security Products Ca.....16a/27
Thorn, J. S., Ca.....16a/32
Truscan Steel Ca.....16a/34
Universal Corp. 16a/36
Venta Steel Products Co., Inc.....16a/37b

double glazed

Adams & Westlake Ca.....16a/2
Andersen Carp. 16b/1
Bayley, William, Ca.....16a/4; 16a/5
Corr, Adams & Collier Co.....5c/1
Cupples Products Carp.....16o/11; 16a/12
Flynn, Michael, Mfg. Co.....16a/16
General Bronze Corp.....16a/17
Libbey-Owens-Ford Glass Co.....7a/2
Mesker Bros.....16a/22
Pittsburgh Plate Glass Co.....16b/7
Pameroy, S. H., Ca.....16a/24
Ralscreen Co. 16b/6
Rassbach & Sons, Inc.....16a/26
Universal Corp. 16a/36
Williams & Willioms Products Carp...16o/39

windows cont.

double hung

Adams & Westlake Ca.....16a/2
Alsca, Inc. 18a/1a
Aluminum Windaw Carp.....16a/2b
Aluminum Window Mfrs. Assn.....16a/3
Andersen Carp. 16b/1
Corr, Adams & Collier Ca.....5c/1
Cupples Products Carp.....16a/11; 16a/12
Curtis Companies Service Bureau.....5c/2
Flaur City Ornamental Iran Co.....6e/6a
General 8ronze Carp.....16a/17
Kaufmann Carp. 16a/21
Natianal Firewarks, Inc.....16a/23
Pianeer Fireproaf Door Carp.....15a/15
Pameray, S. H., Ca.....16a/24
R. O. W. Sales Ca.....16b/5
Sterling Windaws, Inc.....16a/29
Thorn, J. S., Ca.....16a/32
Truscan Steel Co.....16a/34
Universol Corp. 16a/36
Vallas, Lionel 15a/19

fixtures for

see hardware

folding

Universal Corp. 16a/36

glass block construction

American Structural Products Co.....7c/1
Craft Steel Products, Inc.....16a/10
Flynn, Michael, Mfg. Ca.....16o/16
Generol Branze Corp.....16a/17
Hope's Windaws Inc.....16a/20
Marmet Carp. 7c/5
Valley Metal Products Co.....16a/37
Winco Ventilotor Co., Inc.....7c/6

guards for

see guards

hardware for

see hardware

hollow metal

Rabertson, H. H., Co.....19a/6
Truscan Steel Ca.....16a/34
Vallas, Lianel 15o/19

horizontal sliding

Andersen Corp. 16b/1

housing

see windows—casement; windows—double hung

insulating

Libbey-Owens-Ford Glass Ca.....7a/2
Pittsburgh Plate Glass Co.....16b/7

louvered glass

Air-Vue Products Corp.....16o/2o
Casement Hardware Ca.....18c/2
Pra-Tect-U Jalousie Corp.....18c/4
Security Products Ca.....16a/27
VentiLite Corp. 16o/37a

monitor

see windaws—continuous

panorama or picture

see windaws—aluminum; windows—bronze; windaws—steel or stainless steel; windows—waad

windows cont.

pivoted

Boyley, William, Ca.....16a/5
Bliss Steel Products Corp.....16a/6
Ceco Steel Products Carp.....16a/7
Crittall-Federal, Inc.....16a/9
Detroit Steel Products Co.....16a/13
Flynn, Michael, Mfg. Ca.....16a/16
Geyser, E. K., & Ca.....16a/18
Hape's Windaws Inc. 16o/20
Mesker Bras.....16a/22
Pennsylvania Wire Glass Ca.....19a/4
Rassbach & Sons, Inc.....16a/26
Tharn, J. S., Ca.....16a/32
Truscan Steel Ca.....16a/34
Vollos, Lionel 15o/19

pivoted—screened

Bayley, William, Co.....16o/5
Bliss Steel Products Carp.....16a/6
Ceca Steel Products Carp.....16a/7
Hape's Windaws Inc. 16o/20
Mesker Bras.....16a/22

projected

Aluminum Window Mfrs. Assn.....16a/3
Boyley, William, Co.....16a/4; 16a/5
Bliss Steel Products Carp.....16a/6
Ceco Steel Products Carp.....16a/7
Crittall-Federal, Inc.....16a/9
Craft Steel Products, Inc.....16a/10
Dalmo Continental Inc.....16b/2
Detroit Steel Products Ca.....16a/13
Flour City Ornamental Iron Ca.....16a/15
Flynn, Michael, Mfg. Co.....16a/16
Generol Bronze Corp.....16a/17
Geyser, E. K., & Ca.....16a/18
Hope's Windaws Inc.....16a/20
Mesker Bras.....16a/22
Rabertson, H. H., Co.....8c/11
Sunlight Metol Products Ca.....16a/31
Thorn, J. S., Ca.....16a/32
Truscon Steel Ca.....16a/34
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glass and plastics

section 7

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"AMERICAN" GLASS

AMERICAN WINDOW GLASS CO. · PITTSBURGH, PA.

GENERAL OFFICES: Farmers Bank Building, PITTSBURGH 22, PA.
FACTORIES: ARNOLD, PA.; BELLE VERNON, PA.; JEANNETTE, PA.; OKMULGEE, OKLA.; ELLWOOD CITY, PA.

LUSTRAGLASS
The Ultra-Violet Ray Sheet Glass

THE CLOSEST APPROACH TO PLATE GLASS EVER ATTAINED BY A WINDOW GLASS PROCESS

Improved LUSTRAGLASS is produced by a vertical drawn process, many features of which were developed and patented by the American Window Glass Company and retained for the company's exclusive use. One of the most important of these developments is the equipment used to reduce distortion.

Because of this process and the constant technical control throughout every step of production, LUSTRAGLASS is a sheet glass of consistently high quality that is substantially free from discernible "waviness" and distortion.

Because LUSTRAGLASS is the whitest of all glass used for regular glazing it transmits more daylight and more of the ultra-violet rays of sunlight.

Abbottsford Apartments, Milwaukee, Wis.
Contractor: DAHLMAN CONSTRUCTION CO.
Architects: BUEMMING & JAHN
Glazier: PATEK BROTHERS, INC.

Architects, builders and home owners are more and more writing "LUSTRAGLASS" into their specifications for glazing. They have learned that this amazing ultra-violet ray window glass provides so much more than other ordinary window glass in whiteness, clearness, durability, and reduction of distortion.

It required years of intensive research to develop LUSTRAGLASS, and continuing research has kept LUSTRAGLASS the outstanding value in window glass throughout the years. LUSTRAGLASS has brought to the building world a perfected product selling at window glass prices in which the universally common fault of distortion has been practically eliminated.

Air View of Pratt & Whitney, Division Niles-Bement-Pond Co. Plant, West Hartford, Conn.
Contractor: JAMES STEWART & CO. Architect: ALBERT KAHN. Glazier: MAX SUNNENSHINE.

Technical data on next page.

Illinois National Guard Armory, Chicago, Ill.

Architect: C. Herrick Hammond, State Architect. General Contractor: S. N. Nielson Co. Glazier: Hamilton Glass Company.

Process and Production

The improved Lustraglass is a sheet glass of such consistent quality that expert glass men find it difficult to discover that distorting "waviness" which generally distinguishes sheet glass from plate glass. Lustraglass has great tensile strength, a diamond-like luster, and is relatively free of that pronounced greenish cast found in nearly all glass used for regular glazing.

Tests

Scientific tests with poultry and plants have proved the effectiveness of Lustraglass transmission.

Our folder 3516 illustrates the marked increase in health, growth and strength of plants and poultry raised under Lustraglass in contrast with similar specimens raised under ordinary window glass. Copies of folder 3516 will be supplied free on request.

Inspection

Every light of "A" Quality Lustraglass, after being cut and inspected by experienced cutters, is reinspected by men specially trained for that work. The quality is again checked by the chief inspector.

Identification Labels

Every light of *genuine* Lustraglass, the ultra-violet ray window glass, is labeled to identify its genuineness as well as thickness and quality.

Grading

Lustraglass is graded in "A" and "B" qualities, both of which are free from many of the imperfections permitted in Government specifications.

Grades and Qualities

"A" Quality—Lustraglass ("A" Quality) is a perfectly flat, white, high luster product of uniform thickness and appearance.

"B" Quality—This quality is free from all glaring defects and differs only from "A" Quality in that it contains imperfections which would prevent its being graded as "A" Quality.

Dimensions

Glass is cut to dimensions ordered with an allowable tolerance of $\frac{1}{32}$ in. per $\frac{1}{8}$ in. thickness.

THICKNESSES AND WEIGHTS

Table 1—Average Thickness and Weight of Clear Sheet Window Glass

Single Strength	.091 in.	18.9 oz. per sq. ft.
Double Strength	.125 in.	26. oz. per sq. ft.
$\frac{3}{16}$-in. Crystal Sheet	.193 in.	40. oz. per sq. ft.
$\frac{7}{32}$-in. Crystal Sheet	.218 in.	45. oz. per sq. ft.

Note: The above are subject to the usual average allowable variations.

MAXIMUM DIMENSIONS RECOMMENDED

	Width (in inches)	Length (in inches)
Single Strength	40	50
Double Strength	60	80
Crystal Sheet, $\frac{3}{16}$ in. and $\frac{7}{32}$ in.	72	120

Suggested Specifications

All window glass used in this building shall be Lustraglass, a product of American Window Glass Company, and shall be (here specify the thickness and quality of glass desired). The Lustraglass label must appear on each light of Lustraglass.

Note: If the American Window Glass Company's glass is specified, this company, upon request, will inspect the installation and without expense report whether the glass furnished is the kind, quality, and thickness specified.

LUSTRABLU

Lustrablu is a beautiful transparent blue glass that has found acceptance by many of America's leading architects for America's finest homes. This "sun-shade" window glass has rapidly grown in vogue, and is in great demand in many sections of the United States, and where sun glare of tropic intensity is prevalent.

Lustrablu is also used extensively for table tops, mirrors, cabinet fronts and wherever the use of a distinctive ornamental glass is indicated.

It is available in the following thicknesses: 16 ounce, single or double, $\frac{3}{16}$ in. and $\frac{7}{32}$ in. Send for Lustrablu folder 4006 and demonstration samples.

Another Charming Florida Residence
Glazed throughout with Lustrablu.
Louis Davidson, Designer
Glazed by Dania Lumber and Supply Company, Miami, Fla.

A Lovely Miami Beach Residence
Glazed with American Lustrablu.
Wallace Baxter, Architect

An Architectural Jewel that Gives a Soft, Friendly Tone and Improves the Appearance of Any Exterior

Lustrablu gives an interesting architectural depth to any house, making surrounding buildings with plain glass look flat in comparison. It offers an architectural and visual advantage impossible to describe adequately.

Lustrablu Cuts Glare, Adds Beauty, Depth and Distinction to Your View, Enhances Every Interior

Lustrablu cuts down glare and irritating light reflections, and it provides a rich, third dimensional view impossible to attain with ordinary window glass.

In schools, offices, operating rooms and other places where eyestrain is a serious factor, there is no substitute for the optically restful efficiency of Lustrablu. It makes any room a better place to work or play.

The purpose of Lustrablu is not to reduce or color the light it transmits but rather to eliminate dazzling glare and annoying reflections. In rooms glazed with Lustrablu you rarely are aware that the glass is tinted but are conscious only of your improved vision. Lustrablu lends itself to any type of interior decoration without fear of a clash in color schemes.

Hospitality House, San Francisco, Calif.
Glazed with Lustrablu throughout.
Dodge A. Riedy, Architect and Acting Contractor.
Glazing donated by Members of Local Glaziers Union.

LUSTRACRYSTAL

$\frac{3}{16}$ In. and $\frac{7}{32}$ In. Thicknesses

American Crystal Sheet Glass possesses a brilliant surface, uniform thickness, and is the flattest and whitest glass produced by any process.

Being lower in price than polished plate, it is frequently specified for use instead of plate for many purposes at a considerable saving.

SUPRATEST SAFETY GLASS

THE CLEARER, WHITER SAFETY GLASS—

Originally developed to meet the high safety requirements of automobiles, busses and trucks, Supratest, because of its many outstanding features, has a definite place wherever glazing specifications demand the utmost in safety.

Supratest sheet is a clearer, whiter safety glass because it is laminated with American's Lustraglass. Its outstanding properties are of great importance in hospitals, apartment houses and other structures where noise elimination is desirable.

Supratest stays whiter; it does not "let go" or become "blotchy" after a long period of service, nor will it discolor or cloud from exposure to sunlight for any length of time.

Supratest resists the penetrating moisture and requires no sealing. In addition to all these advantages, Supratest adds the quality of resistance to fracture at low temperatures.

Supratest is used extensively in hospitals, asylums, nurseries and in other places where the hazard caused by broken windows must be reduced to a minimum.

Pennsylvania Western State Psychiatric Hospital, Pittsburgh, Pa.
Glazed with American Laminated Safety Glass throughout.
RAYMOND M. MARLIER, Architect — JOHN FARRIS, Engineer
M. H. McCLOSKEY & Co., General Contractor
THE WATSON-STANDARD Co., Glazing Contractor

SUPRATEST
the all-temperature safety glass

Supratest is available in the following combinations and thicknesses. Except in the "plate" quality, all American Supratest Safety Glass is laminated from American's Lustraglass.

	Thickness in inches		
	Minimum	Average	Maximum
Plate	7/32"	1/4"	9/32"
Standard Sheet	7/32"	15/64"	1/4"
Double Sheet	1/4"	17/64"	9/32"
Single Sheet	9/32"	1/4"	7/32"
Plate and Single Strength	13/64"	7/32"	15/64"
Zephyrweight	.105	.111	.117
Featherweight	.129	.137	.145
Lightweight	.149	.159	.169

AMERICAN WINDOW GLASS CO. · PITTSBURGH, PA.

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FACTORIES: ARNOLD, PA.; BELLE VERNON, PA.; JEANNETTE, PA.; OKMULGEE, OKLA.; ELLWOOD CITY, PA.

DISTRICT SALES OFFICES

ATLANTA, GA. — BOSTON, MASS. — CHICAGO, ILL. — DETROIT, MICH. — NEW YORK, N. Y.
ST. LOUIS, MO. — SAN FRANCISCO, CAL.

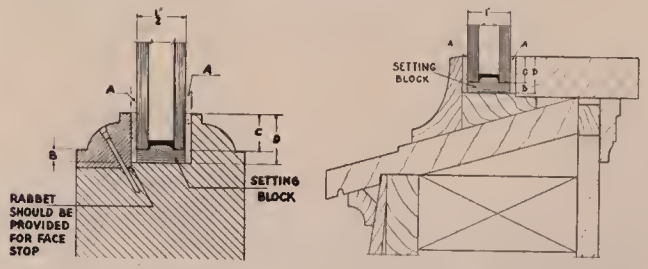
EXPORT DIVISION:
2915 New York Life Bldg., NEW YORK

CANADIAN REPRESENTATIVE:
JOSEPH TAYLOR & SON, TORONTO, ONT.

EXPORT OFFICES
PUERTO RICO: Felix A. Aguilar, P.O. Box 1222, San Juan
CUBA: F. G. Salichs, Apartado 930, Havana

glazing details

It is extremely important to remember that *Thermopane* is a factory-fabricated unit and, once made to specifications, its dimensions cannot be changed at point of use. Proper glazing clearances must be allowed on all *Thermopane* units, as well as sufficient rabbet depth, so that the metal seal does not show. The drawings and chart below give this information.



Symbol and Explanation	Glass Thickness					
	D. S. A. 1/8" Plate 1/8" Patterned	3/16" Sheet Glass		1/4" Plate 7/32" or 1/4" Patterned		
Glass Sizes	under 80 united inches	under 80 united inches	from 80–120 united inches	under 80 united inches	over 80 united inches	over 120 united inches
A—Glazing compound Bed—Width	1/16"-1/8"	1/16"-1/8"	1/16"-1/8"	1/8"	1/8"	1/8"
B—Glazing Clearance (all edges)	1/8"	1/8"	3/16"	1/8"	3/16"	1/4"
C—Metalized Edge—Depth	3/8"	3/8"	3/8"	3/8"	1/2"	1/2"
D—Total Rabbet Depth B+C	9/16"*	9/16"*	5/8"*	9/16"*	13/16"*	7/8"*

*Allowance made for dimensional tolerance.

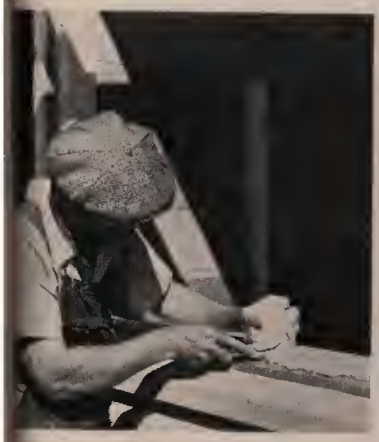
glazing instructions

The following instructions must be observed for the sueeessful installation of *Thermopane*:—

1. Cheek sash openings for squareness and full unit edge clearanee.
2. Use a good, knife-grade, non-hardening glazing eompound, free from eorrosive materials.
3. Have glazing eompound soft, and completely bed the baek stop with it before inserting unit.
4. Press *Thermopane* in evenly. Do not force so as to twist the unit.
5. Do not nip corners. This breaks the seal.
6. Allow equal elearanee on all edges between glass and sash.
7. Point up all edge voids between glass and sash.
8. Faee all edges with glazing eompound.
9. If wood stops or metal angles are used, do not exert undue pressure so that glazing compound is squeezed out, or unit is under strain at nail or serew points.
10. *Thermopane* must have a sufficient bed of glazing eompound so that neither wood nor metal comes in eontaet with the glass at any point.*
11. Lights over 80 united ineh es must be supported on soft surfaee setting bloeks. (Soft rot-proof wood, soft lead, or steel or aluminum bloeks with soft lead tops). The width of the setting bloek must be the same as the thiekness of the *Thermopane* unit.
12. Setting bloeks should be loeated in from each corner and eentered a distanee of 1/4 the length of the light.
13. *Thermopane* units eonstrueted with one light of Heat Absorbing Plate or Blue Ridge Aklo must be glazed with the Heat Absorbing Glass to the outside.
14. These glazing instruetions are paeked with each *Thermopane* shipment and our warranty does not apply unless they are followed.

*Exception: Approved metal storefront construction.

how to install *Thermopane*, step-by-step



1. Be sure opening is square so that unit will not bind. Bed back stop with a good, knife-grade, non-hardening glazing compound free of corrosive agents before inserting *Thermopane*.

2. Place unit on approved setting blocks located in from each corner and centered 1/4 the length of the unit. Press in evenly. Allow equal clearance between edges of the glass and sash.

3. Fill the voids on all edges with non-hardening glazing compound to prevent infiltration of air and water leakage. Do not use blocks of any kind of sides or top of *Thermopane*.

4. Cover perimeter with non-hardening glazing compound before applying the face stops. To avoid poir pressure, do not toenail unless th sosh is robbeted to receive them

glass

Libbey·Owens·Ford Glass Company

data for the architect

L·O·F products and services

The LIBBEY-OWENS-FORD GLASS COMPANY is one of the world's largest manufacturers of flat glass. The main office is in Toledo, Ohio, and sales offices are maintained in principal cities as listed on Page 24 of this catalog. Nine factories with a combined floor area of 5,500,000 square feet are located in Rossford and East Toledo, Ohio, Ottawa, Ill., Shreveport, La., and Charleston and Parkersburg, W. Va.

Glass manufactured today has characteristics and qualities which the product did not possess a few years ago. Architects, designers, construction engineers and builders will find it helpful to consult Libbey-Owens-Ford on any question pertaining to the design and installation of the many types of window, plate and structural glass made at our factories. The company maintains in Toledo an up-to-date research department, technical laboratory and department of design.

All Libbey-Owens-Ford products for building purposes are sold and installed by authorized glass distributors and/or dealers.

THE GLASS PRODUCTS manufactured and marketed by Libbey-Owens-Ford are reviewed according to the index below.

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L-O-F Polished Plate Glass	3
L-O-F *Color Clear** Polished Plate Glass	3
L-O-F Colored Polished Plate Glass	3
L-O-F Polished Plate Glass for Mirrors	4
L-O-F Transparent Mirrors	5
L-O-F *Thermopane**	6, 7, 8, 9
L-O-F Window Glass	10
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L-O-F Heat Absorbing Polished Plate Glass	12
L-O-F Decoration on Glass	13
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L-O-F Hi-Test Safety Glass	24
L-O-F *Vitrolite**—Ask for catalog No. V-126 or see it in Sweet's File for Architects, 13b/11.	
L-O-F *Glastone**—Ask for catalog No. V-126 or see it in Sweet's File for Architects, 13b/11.	
L-O-F *Tuf-flex** Glass Doors—Ask for catalog No. TF-1 or see it in Sweet's File for Architects, 15b/1.	

THE FOLLOWING KINDS of glass manufactured by the Blue Ridge Glass Corp., Kingsport, Tenn., are sold by Libbey-Owens-Ford Glass Company through leading glass distributors throughout the United States.

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Practical Patterned Glass for Varied Industrial Requirements	18, 19
Blue Ridge Aklo Heat Absorbing and Glare Reducing Glass	20, 21, 22
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L-O-F District Offices	24

*®

Light transmission values of Libbey-Owens-Ford glass

	Ultra Violet	*Illuminant C Average Daylight*	*Total Radiation*	*Illuminant C Per Cent Transmission*	
D. S. A. Window Glass	74.8	90.0	85.5	3/8″ Plate Glass	89.8
1/8″ Plate Glass	76.7	90.0	85.1	1/2″ Plate Glass	88.5
13/64″ Plate Glass	71.9	88.9	81.5	5/8″ Plate Glass	88.9
1/4″ Plate Glass	69.5	88.3	79.4	3/4″ Plate Glass	88.4
7/32″ Standard Blue Plate Glass	78.6	58.6	75.7	7/8″ Plate Glass	87.9
7/32″ Medium Blue Plate Glass	78.5	45.9	70.4	1″ Plate Glass	87.4
7/32″ Dark Blue Plate Glass	78.1	5.0	49.2	1 1/4″ Plate Glass	86.4
7/32″ Peach Plate Glass	55.3	80.9	78.4		
1/8″ Color Clear Plate Glass	85.4	91.6	91.3		
1/4″ Color Clear Plate Glass	81.4	91.5	90.8		
1/8″ Heat Absorbing Plate Glass	62.0	82.5	54.7		
1/4″ Heat Absorbing Plate Glass	48.0	72.2	37.5		
1/4″ Safety Plate Glass	69.4	89.0	81.0		

L·O·F polished plate glass

description

A transparent glass made by grinding and polishing the two surfaces of a glass blank with the objective of making them flat and parallel and providing clear vision with minimum distortion.

qualities

Silvering and mirror glazing quality polished plate glass is used for the finest mirrors and for high quality glazing in residences.

Glazing quality polished plate glass is used for general glazing purposes.

uses

⅛″, $\frac{13}{64}$″—Small panes, leaded lights, railway coaches, mirrors, etc.

¼″—Windows of public and office buildings, residences and apartment buildings, storefronts, show cases, street cars, railway coaches, shelving, table and desk tops, large mirrors, etc.

½″—Portlights, long shelves, glass furniture, background for decoration, etc.

½″ to 1¼″—Floor, deck and portlights on ships; aquarium tanks, glass furniture, table and desk tops, etc.

Color Clear* polished plate glass

Exceptionally clear and colorless, this L-O-F product does not detract from the true color of objects or merchandise behind it. Its quality is equivalent to that of regular polished plate glass.

Color Clear polished plate glass is ideal for Picture Windows, commercial refrigerator cases and mirrors.

Tuf-flex tempered *Color Clear* polished plate glass (page 11) is supplied in ¼″ thickness.

colored polished plate glass

Libbey-Owens-Ford produces polished plate glass in the following colors: standard blue, medium blue and peach. Coloring is uniformly controlled so these glasses can be used for such glazing purposes as Picture Windows. They are also highly recommended for mirrors and decorative applications. Colored polished plate glass is furnished in quality equivalent to that of regular polished plate glass.

Tuf-flex tempered colored polished plate glass (page 11) is $\frac{7}{32}$″ thick.

suggested specifications

Plate glass shall be Libbey-Owens-Ford polished plate glass and shall be of (.....) quality, and (.....) thickness in accordance with Federal Specification DD-G-451.

*®

edge finishing and special work

All types of flat glass may have their edges finished in various ways. The standard edge finishes are clean cut and swiped, clean cut and seamed, ground and seamed, flat ground, flat polished, bullnose polished, round polished, semi-round or pencil polished, mitered edges ground or polished, beveled edges ground or polished. Glass may be cut to size or to simple shapes with a glass cutter, and finished with abrasive belts and grinding and polishing wheels; holes may be drilled with hand or machine drills. Notches may be cut with a drill and glass cutter in combination. In cutting holes or notches, care should be taken not to exceed safe limits of glass. Notches are well to avoid where possible. Cut edges should be used only where edges are to be covered or protected by molding; abutting edges should be flat ground and exposed edges polished. Ground or polished, mitered or rounded grooves, depressions for hand holes, pen grooves, etc. may be wheel cut into surface of glass.

Polished plate glass can be bent to specification.

chart for specifying L-O-F polished plate glass

Type or Color	Thickness	Thickness Tolerance	Standard Maximum Width and Length	Maximum Size Special Order	Approx. Weight Lbs. Per Sq. Ft.
Regular	⅛″	±$\frac{1}{32}$″	72″ x 74″	74″ x 144″	1.64
	$\frac{13}{64}$″	±$\frac{1}{32}$″	72″ x 74″	74″ x 144″	2.65
	¼″	±$\frac{1}{32}$″	124″ x 170″	124″ x 250″	3.27
	⅜″	±$\frac{1}{32}$″	100″ x 150″	120″ x 200″	4.90
	½″	±$\frac{1}{32}$″	100″ x 160″	100″ x 200″	6.54
	⅝″	±$\frac{1}{64}$″	80″ x 140″	100″ x 160″	8.17
	¾″	±$\frac{1}{64}$″	80″ x 130″	100″ x 150″	9.81
	⅞″	±$\frac{1}{16}$″	40″ x 100″	50″ x 100″	11.44
	1″	±$\frac{1}{16}$″	40″ x 100″	50″ x 100″	13.08
	1¼″	±$\frac{1}{16}$″	40″ x 100″	50″ x 100″	16.25
Color Clear	⅛″	±$\frac{1}{32}$″	40″ x 80″	55″ x 90″	1.64
	¼″	±$\frac{1}{32}$″	70″ x 140″	90″ x 140″	3.27
Colors:					
Standard Blue	$\frac{7}{32}$″	±$\frac{1}{32}$″	100″ x 140″	110″ x 170″	2.86
Medium Blue	$\frac{7}{32}$″	±$\frac{1}{32}$″	100″ x 140″	110″ x 170″	2.86
Peach	$\frac{7}{32}$″	±$\frac{1}{32}$″	100″ x 140″	100″ x 170″	2.86

Modern Visual Front of polished plate glass and Tuf-flex* tempered plate glass doors enables this ladies ready-to-wear store in Abilene, Texas, to display its merchandise day and night. Hughes and Olds, Architects.

L·O·F polished plate glass for mirrors

description

L-O-F Polished Plate Glass, beeause of its elearness and flatness and minimum of imperfeetions, is ideal for the manufaeture of all types of quality mirrors.

Libbey-Owens-Ford Glass Company does *not* manufaeture and sell ehemieally deposited mirrors for arehiteetural purposes, but supplies polished plate glass to many of the leading mirror manufaeturers.

uses

Mirrors are playing an increasingly important part in modern deeoration and design. Arehiteets and designers have found that mirrors bring inereased light, beauty, sparkle and spaeiousness into residenees, hotels, apartment houses and pnblie buildings.

A reeent use of mirrors is to double the apparent size of a room or space by faeing one wall or two adjoining walls with large mirror seetions, attaehed with rosettes or mastie. For sueeessful illusion the room must be designed as a half or a quarter of a room so that important features oeeur at the interseetion of mirror-to-wall, mirror-to-eeiling or mirror-to-mirror.

Cireular mirrors for dining rooms, fireplaee-to-eeiling mirrors for living rooms, full length polished plate glass mirrors for bedrooms and dressing rooms, built-in mirrors for smart powder rooms—all aid in introducing eharm and dignity into modern homes.

Commereial uses for mirrors are wide and varied—up-to-minute department stores and showrooms use large areas of mirrored surfaees for background effeets, triple mirrors in elothing seetions, overhead mirrors for deeorative purposes. Mirrored walls and eeilings are used extensively in bars, restaurants, clubs, theaters, ete. and add deeorative beauty and spaeiousness where room is limited.

size limitations

When facing wall areas with large mirror seetions, it is generally advisable to keep the size of the seetions within 6 x 12 feet, although larger dimensions ean be furnished for speeial eonditions. Larger wall areas may also be eovered with a series of adjaeent mirrors.

qualities

Mirrors are graded aecording to the quality of polished plate glass used. "A"—(Silvering Quality) used only for the finest mirrors. No. 1 (Mirror Glazing Quality) used for all types of selected mirrors. No. 2 (Glazing Quality) used for all other polished plate glass mirrors whieh are termed "eommercial" mirrors.

These standards eorrespond to those established by the Department of Commeree through the National Bureau of Standards as Commereial Standard CS27-36.

Speeify L-O-F Polished Plate Glass mirrors to insure the finest glass quality.

Before—This is a view of an ordinary kitchen in a home near Cleveland. A blank wall at the end facing the camera creates a definite line limiting the "size" of the room.

After—This is a view of the same kitchen after large polished plate mirrors had been installed. Note that the room seems to be much larger than in the view at the left.

L·O·F transparent mirrors

description

Durability and permanenee are outstanding qualities of L-O-F Transparent Mirrors—a new L-O-F produet using evaporated ehromium alloy for "One-Way Mirror" installations.

With a light transmission of approximately 8% and a light refleetion from the mirrored side of abont 50%, the speeially treated polished plate glass when properly installed serves as a mirror from the front, but is transparent when viewed from the baek. For example:

When an L-O-F Transparent Mirror is installed between two rooms one of whieh is brightly lighted and the other dimly lighted, an observer in the dark room ean see into the lighted one, but the glass has the appearanee of an opaque mirror in the illuminated room. The perfeetion of the performanee is governed by the differenee in brightness between the two rooms. The mirrored side should be installed toward the room into whieh a view is desired.

uses

The following suggested uses for L-O-F Transparent Mirrors are a few of many possible applieations:

In residenee entranee doors, hospital observation windows (partieularly psyehiatrie), show windows, nursery doors in residenees, instrument manufaeturing (used in eameras and other seientifie instruments), night elubs and taverns, security windows in government offiees, banks, post offiees, FBI offiees, poliee departments, private offiees, faetories and institutions, and eolleges and universities (psyehology departments). The mirrors also are suitable for novel advertising signs and show windows.

durability

L-O-F Transparent Mirrors have been thoroughly tested in our laboratories and, wherever used, have been found to be satisfaetory. Thousands were used in instruments during the war. They are highly resistant to the normal aetion of weathering, eleaning, handling and glazing eompounds eneountered in eommereial glazing installations.

uniformity

L-O-F Transparent Mirrors are exeeptionally uniform in quality. Sueh variation as may exist is not apparent to the normal eye in eommereial installation.

A bare spot $\frac{3}{16}$″ x 1″ at the top and bottom edges of all transparent mirror stoek sheets will be found. This is inherent in the manufaeturing proeess and should be eoneealed in the installation.

advantages

The new L-O-F Transparent Mirror, coated with evaporated ehrominm alloy, has many advantages over the ehemieally deposited transparent mirrors now on the market. Among its merits are permanenee of coating and fidelity of eolor of objeets viewed through the mirror.

sizes

L-O-F Transparent Mirrors are furnished in polished plate glass and in any size up to a maximum of 30″ x 60″.

Note: Other thicknesses of glass and other types of evaporated metal films will be considered upon application.

A dining room in the Mayflower Hotel, Akron, Ohio, is a pleasant place. Twenty four L-O-F transparent mirrors at one side of the room offer brightness, a feeling of spaciousness and an opportunity for diners to view the floor show without turning.

This is a photo of the same L-O-F transparent mirrors that are pictured at the left. Here, however, the floor show has been concluded and a flick of a switch has turned on lights behind the mirrors, making them a window which reveals a mural landscape.

description

Thermopane is the first successful, mass-produced, insulating unit of its kind for general use. It is a factory-built transparent glass unit composed of two or more lights of glass separated by ¼″ or ½″ of dehydrated captive air, hermetically sealed around the edges at the factory with a metal-to-glass bond.

manufacture

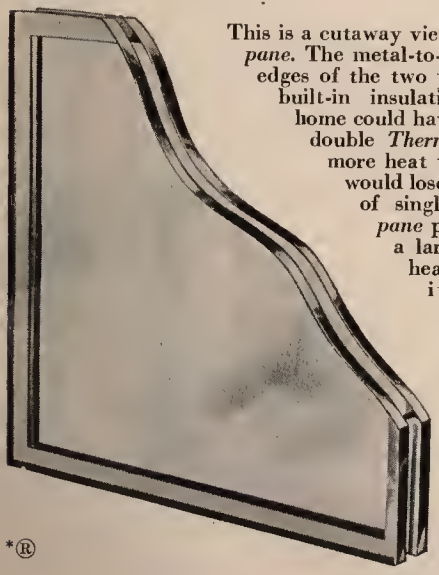
The glass is specially washed before the special Bondermetic Seal* is applied. The air hermetically sealed inside *Thermopane* units is scientifically cleaned and dried. L-O-F *Thermopane* can be furnished in squares or rectangles. Standard Sizes (pages 8 and 9) generally are used.

twelve features

Compared with single glass glazing, the important features of *Thermopane* are: Reduces heat loss through glass—saves fuel. . . . Reduces downdrafts at windows. . . . Is a metal-to-glass welded insulating unit. . . . Provides the benefits of storm sash without the bother. . . . Offers year-round double-glass protection. . . . Is suitable for all window openings. . . . Increases efficiency of air-conditioning equipment. . . . Reduces possibility of condensation. . . . Enables maintenance of uniform temperatures. . . . Reduces transmission of noise. . . . Provides day-by-day health and comfort benefits. . . . Is installed in a sash similarly to a single pane.

uses

Double-glass *Thermopane* is practical for glazing wood or metal windows and doors and window walls in homes, apartments, schools, hospitals and other structures requiring heating, air conditioning or noise reduction. Where higher humidities are encountered, triple-glass *Thermopane* is recommended.



This is a cutaway view of double *Thermopane*. The metal-to-glass bond seals the edges of the two panes of glass. This built-in insulation means that a home could have 115 square feet of double *Thermopane* and lose no more heat than a similar home would lose with 65 square feet of single glazing. *Thermopane* permits the influx of a large amount of solar heat without a prohibitive compensating loss. By combining various types of heat-absorbing, patterned glass and clear glass, the amount of light transmission may be controlled, if this is desirable.

*®

This attractive *Thermopane* Picture Window brings cheer into this suburban home near New Philadelphia, Ohio.

heat loss transmission

Thermopane units provide a high resistance to heat flow, varying with the number of panes and the thickness of the air space. In summer *Thermopane's* low heat transmission coefficient reduces the load on air conditioning systems. In winter it saves heat. The greater efficiency of *Thermopane* compared with single glazing makes it possible to use larger windows and keep the cost of fuel constant.

Because *Thermopane* is an insulating unit, it reduces the coefficient of heat transfer. This increases the temperature of the *Thermopane* surface facing the room side, thereby reducing "windowpane chills" and making living conditions more healthful and comfortable.

The insulating factor allows much more latitude in room design. Because the glass areas in single glazings cause a "cold spot" in the room, radiators or warm air grills are usually located near or under windows. With the warmer window temperature when *Thermopane* is used, there is more flexibility in planning heating outlets.

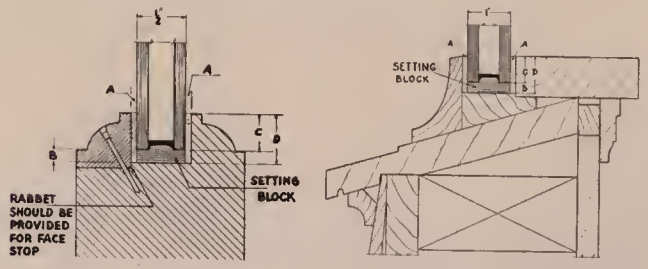
heat transmission table

The over-all heat transmission coefficient U varies with the ranges of temperature at which the coefficient is determined. For most practical heat loss calculations, coefficient U can be the value determined at ten degrees outside temperature, 70 degrees inside temperature, 15 mph outside air velocity, 0.25 mph average inside air velocity. The following table gives such values from actual tests with glass sizes 30″ x 30″:

Number of Panes	Glass Thickness	U Value		
		Air Space		
		None	¼″	½″
Single Glass	⅛″	1.16		
	¼″	1.15		
Double *Thermopane* (one air space)	⅛″ or ¼″		.65	.58
Triple *Thermopane* (two air spaces)	¼″		.47	

glazing details

It is extremely important to remember that *Thermopane* is a factory-fabricated unit and, once made to specifications, its dimensions cannot be changed at point of use. Proper glazing clearances must be allowed on all *Thermopane* units, as well as sufficient rabbet depth, so that the metal seal does not show. The drawings and chart below give this information.



Symbol and Explanation	Glass Thickness					
	D. S. A. 1/8" Plate 1/8" Patterned	3/16" Sheet Glass		1/4" Plate 7/32" or 1/4" Patterned		
Glass Sizes	under 80 united inches	under 80 united inches	from 80–120 united inches	under 80 united inches	over 80 united inches	over 120 united inches
A—Glazing compound Bed—Width	1/16"-1/8"	1/16"-1/8"	1/16"-1/8"	1/8"	1/8"	1/8"
B—Glazing Clearance (all edges)	1/8"	1/8"	3/16"	1/8"	3/16"	1/4"
C—Metalized Edge—Depth	3/8"	3/8"	3/8"	3/8"	1/2"	1/2"
D—Total Rabbet Depth B+C	9/16"*	9/16"*	5/8"*	9/16"*	13/16"*	7/8"*

*Allowance made for dimensional tolerance.

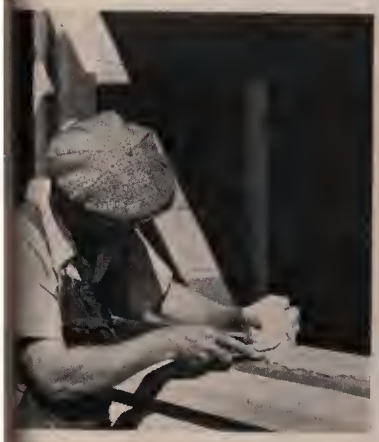
glazing instructions

The following instructions must be observed for the sueeessful installation of *Thermopane*:—

1. Cheek sash openings for squareness and full unit edge clearanee.
2. Use a good, knife-grade, non-hardening glazing eompound, free from eorrosive materials.
3. Have glazing eompound soft, and completely bed the baek stop with it before inserting unit.
4. Press *Thermopane* in evenly. Do not force so as to twist the unit.
5. Do not nip corners. This breaks the seal.
6. Allow equal elearanee on all edges between glass and sash.
7. Point up all edge voids between glass and sash.
8. Faee all edges with glazing eompound.
9. If wood stops or metal angles are used, do not exert undue pressure so that glazing compound is squeezed out, or unit is under strain at nail or serew points.
10. *Thermopane* must have a sufficient bed of glazing eompound so that neither wood nor metal comes in eontaet with the glass at any point.*
11. Lights over 80 united ineh es must be supported on soft surfaee setting bloeks. (Soft rot-proof wood, soft lead, or steel or aluminum bloeks with soft lead tops). The width of the setting bloek must be the same as the thiekness of the *Thermopane* unit.
12. Setting bloeks should be loeated in from each corner and eentered a distanee of 1/4 the length of the light.
13. *Thermopane* units eonstrueted with one light of Heat Absorbing Plate or Blue Ridge Aklo must be glazed with the Heat Absorbing Glass to the outside.
14. These glazing instruetions are paeked with each *Thermopane* shipment and our warranty does not apply unless they are followed.

*Exception: Approved metal storefront construction.

how to install *Thermopane*, step-by-step



1. Be sure opening is square so that unit will not bind. Bed back stop with a good, knife-grade, non-hardening glazing compound free of corrosive agents before inserting *Thermopane*.

2. Place unit on approved setting blocks located in from each corner and centered 1/4 the length of the unit. Press in evenly. Allow equal clearance between edges of the glass and sash.

3. Fill the voids on all edges with non-hardening glazing compound to prevent infiltration of air and water leakage. Do not use blocks of any kind of sides or top of *Thermopane*.

4. Cover perimeter with non-hardening glazing compound before applying the face stops. To avoid poir pressure, do not toenail unless th sosh is robbeted to receive them

L·O·F *Thermopane* (continued)

double Thermopane standard sizes

Standard sizes for double *Thermopane* were developed by Libbey-Owens-Ford in cooperation with leading manufacturers of wood and steel sash in answer to requests from many architects and designers. There are numerous advantages to specifying standard *Thermopane* sizes. Manufacturers of wood sash have developed standard Picture Window frames and sash units using them. Glass distributors and wholesale sash and door jobbers carry warehouse stocks of these units, thus making *Thermopane* readily available. Architects can incorporate standard sizes in their specifications. Replacements and duplications of orders will be handled more quickly.

Standard *Thermopane* units are being manufactured in a wide range of sizes, readily adaptable by architects for new construction and remodeling.

All *Thermopane* units can be installed horizontally or vertically.

window walls and picture windows

Thermopane is ideally suited for wall sections where complete visibility is desired such as in solar houses and daylight engineered buildings. Modern design emphasis has created an opportunity for architects to specify window wall construction using *Thermopane* in standard sizes.

Many sizes of *Thermopane* are used as Picture Windows. The nine sizes listed below generally are used in window walls.

Window Wall

Width	Height
42″	x 66″
56½″	x 66″
42″	x 72″
64½″	x 66″
84″	x 66″
84″	x 72″
72½″	x 66″
96″	x 66″
96″	x 72″

Picture Window

standard wood picture window units with flanking double hung windows

Picture Window Sash Opening (Without double hung unit) Width	Height
4′-4″	x 4′-2″
5′-0″	x 4′-2″
6′-4″	x 4′-2″
4′-4″	x 4′-6″
5′-0″	x 4′-6″
5′-8″	x 4′-6″
6′-4″	x 4′-6″
7′-0″	x 4′-6″
8′-4″	x 4′-6″
5′-8″	x 5′-2″
6′-4″	x 5′-2″
7′-0″	x 5′-2″
8′-4″	x 5′-2″
10′-0″	x 5′-2″
5′-0″	x 5′-10″
5′-8″	x 5′-10″
6′-4″	x 5′-10″

Note: Standard double *Thermopane* units for above are composed of two ¼″ panes of polished plate glass with ½″ air space.

Picture Window Glass Size Width	Height
48½″	x 46″
56½″	x 46⅛″
72½″	x 46″
48½″	x 50″
56½″	x 50″
64½″	x 50″
72½″	x 50″
80½″	x 50″
96½″	x 50″
64½″	x 58″
72½″	x 58″
80½″	x 58″
96½″	x 58″
116½″	x 58″
56½″	x 66″
64½″	x 66″
72½″	x 66″

Note: Window openings will vary according to individual sash manufacturer's specifications. Therefore, manufacturers should be contacted for full information regarding their units.

standard wood picture window units with flanking casements

Window Opening (Including the Casement Units) Width	Height
6′-5¼″	x 3′-2 3/16″
6′-5¼″	x 4′-2 3/8″
8′-1″	x 4′-2 3/8″
9′-8¾″	x 4′-2 3/8″
6′-5¼″	x 5′-2 9/16″
8′-1″	x 5′-2 9/16″
9′-8¾″	x 5′-2 9/16″

Note: Standard double *Thermopane* units for above are composed of two ¼″ panes of polished plate glass with ½″ air space.

Picture Window Glass Size Width	Height
35½″	x 36″
35½″	x 48⅛″
55¼″	x 48⅛″
75″	x 48⅛″
35½″	x 60⅜″
55¼″	x 60⅜″
75″	x 60⅜″

double hung windows

Wood sash manufacturers offer check rail double hung windows, in both two-light and four-light horizontal sash as illustrated.

The complete range of standard sizes for double *Thermopane* double hung units is shown in the table below.

Window Opening Width	Height	Glass Sizes 2-Light	4-Light
2′-0″	x 4′-2″	20″ x 22″	20″ x 10⅝″
2′-4″	x 4′-2″	24″ x 22″	24″ x 10⅝″
2′-4″	x 4′-6″	24″ x 24″	24″ x 11⅝″
2′-8″	x 4′-6″	28″ x 24″	28″ x 11⅝″
3′-0″	x 4′-6″	32″ x 24″	32″ x 11⅝″
3′-4″	x 4′-6″	36″ x 24″	36″ x 11⅝″
3′-8″	x 4′-6″	40″ x 24″	40″ x 11⅝″
4′-0″	x 4′-6″	44″ x 24″	44″ x 11⅝″
2′-4″	x 5′-2″	24″ x 28″	24″ x 13⅜″
2′-8″	x 5′-2″	28″ x 28″	28″ x 13⅜″
3′-0″	x 5′-2″	32″ x 28″	32″ x 13⅜″
3′-4″	x 5′-2″	36″ x 28″	36″ x 13⅜″
3′-8″	x 5′-2″	40″ x 28″	40″ x 13⅜″
4′-0″	x 5′-2″	44″ x 28″	44″ x 13⅜″

Double *Thermopane*, manufactured with two lights of Double Strength "A" quality L-O-F Window Glass or ⅛″ Polished Plate, with ¼″ air space, is standard for double hung windows.

aluminum picture window units with flanking double hung windows

Aluminum sash manufacturers have developed units which will use *Thermopane* standard sizes either for separate Picture Windows or for Picture Windows with flanking double hung aluminum sash. One manufacturer of aluminum sash has developed a standard Picture Window unit which can be used as a single sash or with flanking double hung stock windows. For the latter, the following standard glass sizes have been adopted:

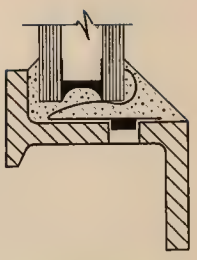
Picture Window Sash Opening Width	Height
4′-0″	x 4′-8″
5′-0″	x 4′-8″
6′-0″	x 4′-8″
4′-0″	x 5′-0″
5′-0″	x 5′-0″
6′-0″	x 5′-0″

Note: Standard double *Thermopane* units for above are composed of two ¼″ panes of polished plate glass with ½″ air space.

Picture Window Glass Size Width	Height
46⅛″	x 52½″
58⅛″	x 52½″
70⅛″	x 52½″
46⅛″	x 56½″
58⅛″	x 56½″
70⅛″	x 56½″

standard steel sash standard sizes

Double *Thermopane*, manufaetured with two lights of Double Strength "A" quality L-O-F Window Glass or ⅛ ineh L-O-F Polished Plate Glass, both with ¼ ineh air spaee, is standard for many residential steel easement windows. For satisfaetory glazing of *Thermopane* in steel sash, speeial elips (see illustration) have been developed by Libbey-Owens-Ford. For detailed information, eontaet the nearest Libbey-Owens-Ford distriet offiee.



standard specifications

All insulating glass shall be *Thermopane* of sizes indieated on the drawings and eomposed of (two) (three) (.....) panes of .....glass..... thiek, hermetieally sealed with a metal-to-glass bond and separated by a (¼″) or (½″) dehydrated air spaee, as manufaetured by Libbey-Owens-Ford Glass Company, Toledo, Ohio, and installed aeeording to manufaeturer's instruetions.

double Thermopane types of glass and sizes

Type of Glass	Min. Size ¼″ or ½″ Air Space	Maximum Size With ¼″ Air Space	Maximum Size With ½″ Air Space	Thickness Range ¼″ Air Spaee	Thickness Range ½″ Air Space	Dimensional Tolerance	Approx. Aver. Net Weight per Sq. Ft.
D.S.A. ⅛″ Blue Ridge Patterned ⅛″ Blue Ridge Aklo (Max. width 28″) ⅛″ Polished Plate ⅛″ Heat Absorbing Plate	8″ x 8″	32″ Max. Width 76″ Max. Length Length not to exceed 4½ times width Total Area 1400 sq. in.	24″ Max. Width 76″ Max. Length Length not to exceed 4½ times width Total Area 1400 sq. in.	7/16″ to 9/16″	11/16″ to 13/16″	8″ to 32″ wide to 48″ long ±1/16″ 48″ to 76″ long +⅛″ −1/16″	3½ lbs.
3/16″ Sheet	8″ x 8″	42″ Max. Width 72″ Max. Length	42″ Max. Width 72″ Max. Length	9/16″ to 11/16″	13/16″ to 15/16″		5 lbs.
¼″ Polished Plate	8″ x 8″	48″ Max. Width 132″ Max. Length Total Area 4800 sq. in.	98″ Max. Width 132″ Max. Length Total Area 9600 sq. in.	11/16″ to 13/16″	15/16″ to 1 1/16″	8″ to 36″ wide +⅛″ −1/16″ 36″ to 98″ wide +3/16″ −1/16″	7 lbs.
¼″ Heat Absorbing Plate	8″ x 8″	48″ Max. Width 100″ Max. Length Total Area 3600 sq. in.	60″ Max. Width 100″ Max. Length Total Area 3600 sq. in.				
7/32″ Blue Ridge Patterned ¼″ Blue Ridge Aklo (Max. width 28″)	8″ x 8″	48″ Max. Width 100″ Max. Length Total Area 4800 sq. in.	48″ Max. Width 100″ Max. Length Total Area 4800 sq. in.	5/8″ to ¾″	7/8″ to 1″		6¼ lbs.
Tuf-flex (¼″) Polished Plate and Heat Absorbing Plate	8″ x 8″	40″ x 48″	40″ x 48″	11/16″ to 13/16″	15/16″ to 1 1/16″		7 lbs.

For building exteriors, sizes 48″ wide or over will be manufaetured with ½″ air spaee only.
For Don Graf's Teehnieal Sheets on *Thermopane* and *Thermopane* Installation Details for Wood Sash, write to your nearest L-O-F Distriet Office.

THERMOPANE WARRANTY

For a period of five (5) years from date of shipment from our factory, we warrant that under normal conditions, material obstruction of vision resulting from film formation, or dust collection between the interior glass surfaces of Thermopane, will not occur.

This warranty will be void unless Thermopane is installed in accordance with our installation instructions, or if any cutting, fitting, or nipping of edges or corners, is done, accidentally or otherwise, after shipment from our factory, or if the unit is damaged in handling, installation or otherwise.

Our maximum liability under this warranty shall be the delivery of replacement lights of Thermopane to the railroad shipping point nearest the place of installation.

This warranty does not apply when Thermopane is used in railroad cars or other vehicles, nor outside continental United States.

Libbey-Owens-Ford Glass Company

L·O·F window glass

description

L-O-F Flat Drawn Sheet Glass—representing the result of more than 30 years of quality glass manufacturing—is exceptionally transparent and has a natural fire-finished surface. It is relatively free of distortion. L-O-F uses its own Flat Drawn Process in manufacturing sheet glass. The result is a better annealed window glass that is less subject to breakage.

classification

Libbey-Owens-Ford Sheet Glass is classified on the basis of thickness as Window, Heavy Sheet and Picture Glass.

Window Glass is supplied in two thicknesses:
1. Single Strength, varying from 10 to 11.8 lights per inch and identified by a *red* label.
2. Double Strength, varying from 7.5 to 8.7 lights per inch, and identified by a *blue* label.

Window Glass is supplied in four standard qualities:
"AA"—Specially selected glass for high grade work.
"A"—Select glass of superior glazing quality.
"B"—Suitable for general glazing purposes.

Greenhouse—Glass of special quality available in double strength only in sizes 16″ x 18″, 16″ x 24″ and 18″ x 20″.

Heavy Sheet Glass is supplied in thicknesses of $\frac{3}{16}$″ and $\frac{7}{32}$″, and in qualities "AA", "A", and "B".

Picture Glass is furnished in three standard thicknesses listed in the chart to the right, and in "AA", "A", and "B" qualities.

uses

Libbey-Owens-Ford Sheet Glass for glazing windows, doors and storm sash in homes, apartments and other types of buildings; cabinet fronts and shelving.

Libbey-Owens-Ford Heavy Sheet Glass for glazing windows and doors where greater strength is required but where slight distortion is not objectionable; shelving; display cases; window ventilators and furniture tops.

Libbey-Owens-Ford Picture Glass for covering pictures, photographs, maps and prints; lantern slides; novelties and instrument dials.

suggested specifications

All sheet glass shall be Libbey-Owens-Ford Flat Drawn ("A") Quality (Double Strength). Each light shall bear the identifying L-O-F label.

packing

Shipped in soundly-constructed boxes, Libbey-Owens-Ford Sheet Glass is given neat, clean and practically moisture-proof protection.

chart for specifying

Classification	Quality	Thickness in Inches	Approximate Wt. Sq. Ft. in Ozs.	Maximum Size Furnished
Window Glass				
Single Strength	"AA," "A," "B"	.085-.100	19.50	90 united in.
Double Strength	"AA," "A," "B"	.115-.133	26	120 united in.
Double Strength	Greenhouse	.115-.133	26	16″ x 18″ 16″ x 24″ 18″ x 20″
$\frac{3}{16}$″ **Heavy Sheet**	"AA," "A," "B"	.182-.205	40	50 sq. ft.
$\frac{7}{32}$″ **Heavy Sheet**	"AA," "A," "B"	.205-.230	45	60 sq. ft.
Picture Glass				
19-23 lts. per in.	"AA," "A," "B"	.043-.053	9 to 11	60 united in.
Picture Glass				
15-17 lts. per in.	"AA," "A," "B"	.058-.068	12 to 14	60 united in.
Picture Glass				
12-14 lts. per in.	"AA," "A," "B"	.070-.080	15 to 17	60 united in.

Where quality window glass is desired, specify Libbey-Owens-Ford as did Architect Victor Hornbein of Denver.

Libbey-Owens-Ford window glass was specified for this apartment hotel near Chicago. Holabird and Root, Architects.

L·O·F Tuf-flex* tempered polished plate glass

description

Tuf-flex is tempered polished plate glass made by a process of rcheating and sudden cooling, as a result of whieh the outer surfaces are in a state of high compression while the central portion remains in tension, producing a condition highly resistant to breakage. The *Tuf-flex* proccss can be applied to both elear and eolored polished plate glass.

properties

Tuf-flex is approximately three to five times stronger than regular polished plate glass in sustaining loads and resisting fracture duc to strain, and approximately five to scven times more resistant to ordinary impact and three times more resistant to thermal shock. It is morc resistant to bending stresses than polished plate glass. A piece of ¼″ *Tuf-flex* 42″ long and 12″ wide can be twisted through an angle of 20° without breaking. *Tuf-flex* retains the same appearance, clearness, hardness and coefficient of expansion as regular polished plate glass. When its limit of resistance is reached, *Tuf-flex* does not break like ordinary glass into jagged pieces, but disintegrates into small crystals.

uses

The greater strength of *Tuf-flex* has resulted in its wide use for visual entrance doors (specific data available in separate catalog No. TF-1 in Sweet's File for Architects, section 15b/1), ship's glazing, steam and oil pressure gauge covers, shelving, furniture, counter tops, show cases, and for enclosures in museums, zoological gardens and aquariums. Its ability to withstand impact makes *Tuf-flex* especially adaptable for balustrades, stair railings, push and kick plates on doors, windows in gymnasiums and sports arenas, and in jails, hospitals and mental institutions. The high resistance of *Tuf-flex* to thermal shock renders it advantageous as lenses for searchlights, floodlights, and spotlights where the heat generated by high intensity lamps would shatter regular glass; for sterilizing ovens, and for peep hole glasses in furnaces and lehrs.

special conditions

Tuf-flex can be ordered in circles, squares, rectangles and special shapes cut to pattern. It can also be supplied in a variety of edge finishes. However, since it cannot be cut after it is tempered, the exact sizes required must be specified, and intricate designs should be submitted for approval.

*®

This handsome railing of *Tuf-flex* polished plate glass was installed at the new Chicago ticket office of the Trans-World Airline. Notice that it casts no shadow on the stairs. Architects: Skidmore, Owings and Merrill, Chicago.

guide for specifying L-O-F Tuf-flex tempered polished plate glass

Kind	Thickness	Min. Width	Max. Size	Thickness Tolerance	Dimensional Tolerance
Regular Polished Plate Glass	¼″, ⅜″, ½″	2″	56″ x 108″	± 1/32″	± 1/16″
	5/8″, ¾″	2″	40″ x 100″	± 3/64″	± 1/16″
	7/8″, 1″, 1 ¼″	2″	40″ x 100″	± 1/16″	± 1/16″
Color Clear Polished Plate	¼″	2″	56″ x 108″	± 1/32″	± 1/16″
Colored Polished Plate	1/32″	2″	48″ x 72″	± 1/32″	± 1/16″
Heat Absorbing Polished Plate	¼″	2″	48″ x 72″	± 1/32″	± 1/16″

Circles and squares are available.

comparative modulus of rupture

Polished Plate Glass	*Tuf-flex*
Average—6,000 lb./sq. in.	Average—30,000 lb./sq. in.

comparison of impact

Kind of Glass	2 Lb. Steel Ball Critical Height Dropped	11 Lb. Shot Bag Critical Height Dropped
¼″ Polished Plate	Average 8 inches	Average 37 inches
¼″ *Tuf-flex*	Average 60 inches	Average 160 inches

resistance to thermal shock

Kind of Glass	Average difference in temperature F° required to cause failure
¼″ Polished Plate	147° F
¼″ *Tuf-flex*	466° F

L·O·F heat absorbing polished plate glass

description

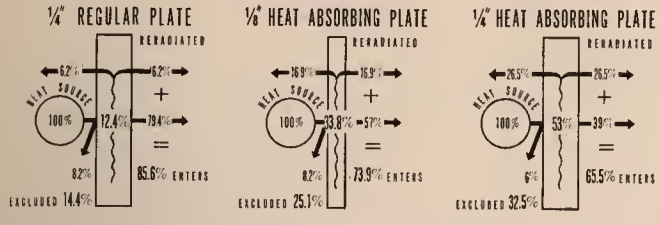
L-O-F Heat Absorbing Polished Plate Glass is a product of special chemical composition, pale bluish green in color, and made to absorb a high percentage of the infrared heat rays of the sun. Part of the absorbed heat is subsequently transferred to the interior, but a considerable portion is given off to the exterior, effecting a net reduction of the solar heat entering through the glass.

qualities

L-O-F Heat Absorbing Polished Plate Glass ⅛″ thick excludes 25.1% of the total solar radiation; ¼″ thick 32.5% as compared with an exclusion of 14.4% afforded by regular plate glass ¼″ thick. These figures are based on the assumption of 50% of the reradiation of the absorbed heat in the glass to the interior and 50% to the exterior. This reduction of solar heat transmission will produce a cooler atmosphere inside, resulting in lower initial cost for the air conditioning equipment and reduced cost of operation. L-O-F Heat Absorbing Polished Plate Glass reduces sun glare, and provides light which is restful to the eyes and nerves.

uses

L-O-F Heat Absorbing Polished Plate Glass is particularly suited for glazing the windows of office and apartment buildings, hospitals, schools, factories, and other types of buildings where the exclusion of solar heat is a problem. Merchants whose wares are perishable will find Libbey-Owens-Ford Heat Absorbing Polished Plate Glass beneficial for show windows. Because of its heat absorbing characteristics, this glass helps protect merchandise such as fruits, vegetables, candy, flowers, and other perishables, helps to keep it fresh much longer. It also is useful for windows of stores such as groceries, butcher shops, drug stores and ice cream parlors where refrigerating equipment may necessarily be in line with rays of the sun coming through show windows.



(NOTE: The percentage factors shown for solar heat exclusion are comparative only since all assume that the sun rays are normal (perpendicular) to glass and that the absorbed heat energy is reradiated equally on both sides of each glass. Such conditions practically never exist. Reradiation and convection are affected by temperatures inside and out, air flow speeds and many other factors. However, the figures are relative between diagrams and can be of assistance in selecting a glass combination by comparing one glass combination to another.)

special processing

If desired, L-O-F Heat Absorbing Polished Plate Glass can be supplied in the form of *Tuf-flex* (see page 11). This makes it stronger than polished plate glass and more resistant to impact and thermal shock.

L-O-F Heat Absorbing Polished Plate Glass also can be incorporated as the outside light in *Thermopane* insulating units in sizes not over 25 square feet (see pages 6, 7, 8 and 9) in combination with regular polished plate glass on the inside. This will reduce the solar heat transmission to 90% as much as would occur through a single light of heat absorbing glass, or to 65 to 70% as much as would occur through *Thermopane* manufactured with two lights of clear glass.

The *Thermopane* arrangement is recommended for year-round insulation, since it most effectively reduces heat loss through windows in winter and heat gain in summer.

suggested specifications

All heat absorbing plate glass shall be L-O-F Heat Absorbing Polished Plate Glass of (.....) thickness as manufactured by Libbey-Owens-Ford Glass Company, Toledo, Ohio.

guide for specifying

Thickness	Thickness Tolerance	Maximum Width and Length	Approx. Weight Lbs. per Sq. Ft.
⅛″	±1/32″	40 inches by 80 inches	1.64
¼″	±1/32″	25 sq. ft. max. area-100″ longest dimension	3.27

Comparative Properties
Libbey-Owens-Ford Heat Absorbing Polished Plate Glass and Regular Polished Plate Glass

	Thickness	Per cent of Transmission	
		Average Daylight	Total Radiation
Regular L-O-F Polished Plate	¼″	88	80
L-O-F Heat Absorbing Polished Plate	⅛″	83	57
L-O-F Heat Absorbing Polished Plate	¼″	74	39

decoration on Vitrolite, polished plate and Blue Ridge glass.

Decoration on glass has a wide range of possibilities, as suggested by the following processes:

surface sandblast—Uniform sandblasting over all or part of glass, in grades from very slight to complete removal of polished surface.

shaded sandblast—Gradations of shading ranging from natural surface to complete obscuration of polish.

deep sandblast—Decoration cut below surface of glass but without modeling or gradation.

carved sandblast—Cut to various depths below surface of glass for fine bas-relief or intaglio.

shaded and carved sandblast—May be combined in one decoration, achieving various tones with deeper cut accents.

painted (air drying)—Usually on back surface of glass; often used in connection with mirrors.

painted sandblast—Air drying decoration applied to sandblasted portions on face or back.

inlay—Thin glass, in variety of opaque or translucent colors, or silver-backed colored glass is inlaid into *Vitrolite* sandblasted to receive the inlay, or into ½" or thicker plate glass with sandblasted surface.

laminated—Letters or decoration, in silhouette, cut from *Vitrolite* or thin colored glass and cemented to *Vitrolite* or other glass background.

Decoration on glass is executed by expert craftsmen in our glass decorating department from architects' full size details or developed by L-O-F from architects' scale drawings.

Over altar decoration, six feet square, in the Shrine of the Ohio Memorial Forest, Loudenville, Ohio. Britsch and Munger, architects. This striking example of fine glass decoration makes use of ⅝" plate glass with a sandblasted surface into which pieces of thin, colored, opaque glass and colored mirrored glass are inlaid. The parts of the glass background which show through are finished on the back in silver and gold and other metallic colors.

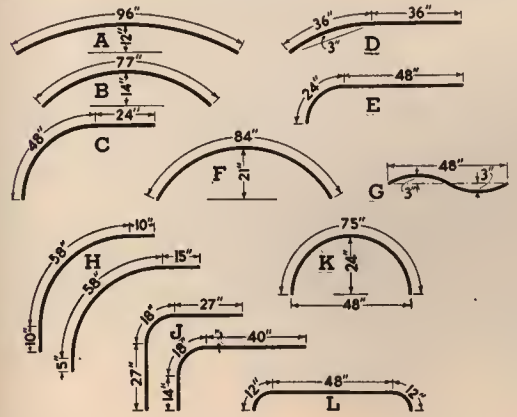
Note:—Processes such as fired-on ceramics on polished plate glass, leaded glass windows, acid etching, etc. may be secured through L-O-F dealers or jobbers.

L-O-F bent glass

Most bent glass shapes are produced by causing flat glass to form in a mould by the action of heat and gravity only. It is not a machined product, and is subject to more distortion and wider tolerances than flat polished plate or window glass.

explanation of diagrams

Dimensions on diagrams are to illustrate maximum limits of proportions. Radii of curves may not be less than 6". Radii should be specified to outside surface of glass. Maximum rise of bends J and K must not exceed 36". Depth of G bends not to exceed 1 in 16; example, pane 64", depth 4". Flat portions of bent glass cannot be kept entirely flat where large flat areas are required. It is recommended that flat portions be ordered as separate lights. It is recommended that bent *Vitrolite* panels should not exceed 6 sq. ft. in area for exterior work. For *Vitrolite* or Blue Ridge Glass specify which face of glass is concave or convex. Requirements for bends in glass of greater thicknesses than listed below or for sizes in excess of the maximum dimensions listed should be submitted for consideration.



maximum sizes of bends (in inches)

Bends	Thickness	Polished Plate Glass			Color Clear Polished Plate		Heat Absorbing Polished Plate	
		⅛	13/64	¼	⅛	¼	⅛	¼
	Distance Around Bend	60 or 48	70 or 68	110	40	70	60 or 30	96"**
	Length	48 or 60	68 or 70	144	60	140	30 or 60	96"**

A, B, C, D, E, F, L.	Colored Polished Plate	Sheet Glass				Blue Ridge Grass		Vitrolite	
	Thickness 1/32	S.S.	D.S.	3/16	7/32	⅛	7/32	11/32	7/16
	Distance Around Bend 90	24	60 or 48	60	84	60 or 48	84 or 48	48	48
	Length 116	48	48 or 60	84	96	48 or 60	48 or 84	48	48
H, J, K.	Same as schedule above except that distance around bend may not exceed 78".								
G	Same as in schedule above except that maximum distance around bend may not exceed 48" and maximum length may not exceed 72".								

** 25 Sq. Ft. maximum area

BLUE RIDGE patterned and wire glass

Blue Ridge glass embraces a complete range of scientifically designed Patterned and Wire glass, for which Libbey-Owens-Ford is the United States' Sales Agent.

description

Blue Ridge Patterned Glass, which includes more than 20 individual patterns is a flat-rolled, translucent glass in which a distinctive light-controlling geometric or linear design is impressed into one or both surfaces during manufacture. All are semi-transparent, and provide diffused light transmission. Most Blue Ridge patterns can be obtained in Wire Glass for greater resistance to fire hazards.

There are four types of finish available in Blue Ridge Patterned and Wire Glass. These are:

1. *Plain Rolled Fire-Polished*—surfaces as they come from the lehr without further treatment.
2. *Satinol finish*—a treatment of one or both sides which imparts a soft, satin-like finish, increasing obscurity and spreading transmitted light uniformly over a wide area. Does not finger mark or collect dust and dirt—is easily cleaned with a dry or damp cloth. Available in all patterns. On one surface, Satinol reduces light transmission about 3% . . . both surfaces about 6%.
3. *Frosted finish*—acid-etching of both glass surfaces to improve distribution of transmitted light.
4. *Sandblasted finish*—to increase obscurity and diffusion of transmitted light. Spreads the light in a circular pattern. Sandblasting on one side reduces light transmission about 16% and, on both sides, from 20 to 30%.

uses

Blue Ridge Patterned Glass is desirable, wherever glazing requirements include high light transmission or diffusion, privacy, and distinctive decoration. Applications include windows, doors, partitions of all kinds, transoms, skylights, decorative panels, cupboard doors, shelving backgrounds, displays, signs and lighting fixtures. (Note: For glare-and-heat reduction, see Blue Ridge Aklo glass, pages 20 and 21).

"securit process"

Practically all Blue Ridge Patterns may be *Securitized* —(heat-tempered)—to increase resistance, to thermal and physical shock. *Securitized* Patterned Glass is safer for, if broken, it disintegrates into small diced particles. (*Note—Wire Glass cannot be Securitized*).

suggested specifications

Where Patterned or Polished Wire or Obscure glass is specified herein, or shown on plans, it shall be ( ) inches in thickness and shall be ( ) pattern (specify thickness and pattern desired), and shall be manufactured by the Blue Ridge Glass Corporation.

If a surface finish other than plain rolled is desired, the type of surface finish, such as Satinol or Frosted, should be specified.

The Standard Satinol or Frosted (Glare Reducing) Finish Specification is: "Where Patterned or Obscure glass is specified herein or shown on plans, it shall be ( ) inches in thickness and shall be ( ) pattern Satinol (one surface or two surfaces), or have Frosted (Glare Reducing) finish on both surfaces, and each light shall bear the label of Blue Ridge Glass Corporation."

Clear Flutex flanks the entrance to Kroehler Display Rooms, Chicago . . . adds the sparkle that attracts customers. Architect: Sterling McDonald.

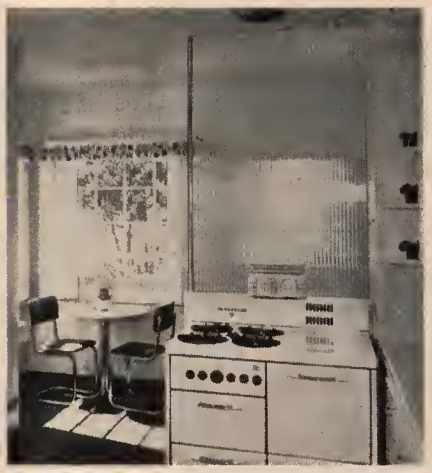
Satinol Louvrex screens porch, admits daylight to hall and forms a distinctive backdrop for plants. Architect: James E. Eppenstein, Chicago.

Light plus privacy gained through panels of clear Doublex which top the partitions in the buying offices of Lester Martin and Company, New York.

L O F 7a 2

Interesting use of bent and flat *Satinol* Louvrex to diffuse light in Moniteau Mills offices, New York. Designed by Robert Gruen Associates.

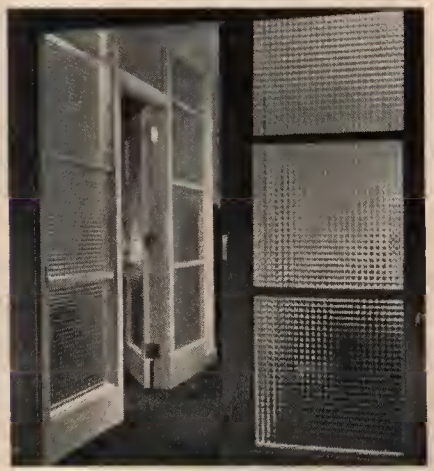
Clear Doublex stair-guard railing directs customers' attention to balcony at Wolf & Dessauer, Ft. Wayne, Ind. Architect A. M. Straus.



Panel of Flutex lets light filter from dinette to kitchen, yet conceals work area. Architect C. W. Mayhew, San Francisco.

Clear Louvrex hides an unpleasant view, admits ample light. Grenadier Dining Room, Detroit Leland Hotel.

Bent Flutex shields the serving counter. And it's so easy to clean! William C. Stimson Restaurant, Erie, Pa.



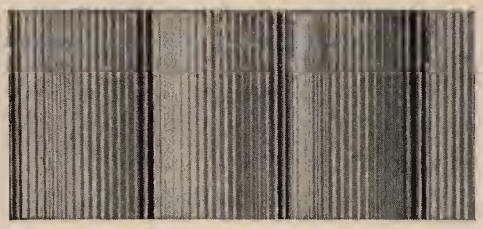
Doublex doors and walls admit light to executive offices. Hotel Statler, Cleveland, Ohio.

In line with modern design! Flutex screen separates office from lobby. Architect: Ernst Payer, Cleveland.

Privacy plus light through Doublex Partitions! Hegarty-Hyland Buying Offices designed by Alyne Whalen, Beverly Hills.

five leading BLUE RIDGE patterns

these smart patterns enable *Architects and Designers* to create pleasing and desirable interiors and exteriors



Stylex

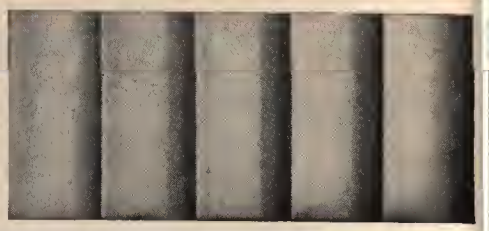
(Cross section shown, actual size)

A rolled flat glass, with one smooth side and one pattern side consisting of curved parallel concave waves about $\frac{3}{64}$″ deep. The crest of the waves are about ¾″ apart, the surface of each being striated with approximately 15 small equidistant ribs about 4/1000″ deep and parallel to the crests.

Made in ⅛″ and $\frac{7}{32}$″ thicknesses with fire-polished, ground and polished and Satinol finishes.

Approximate Light Transmission—unwired 73% (not made in wire glass).

USES—Decorative interior installations for partitions, wall panels, kitchen cupboard doors.



Linex

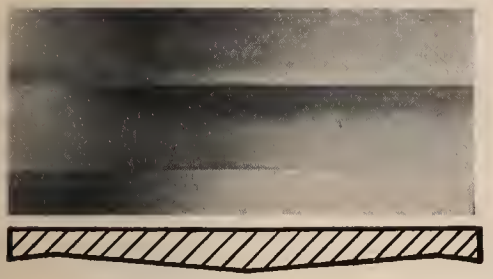
(Cross section shown, actual size)

A rolled flat glass, one surface being smooth and the pattern side consisting of curved parallel concave flutes measuring about $\frac{3}{64}$″ deep. The crests of the flutes are approximately ½″ apart.

Linex is made in ⅛″ and $\frac{7}{32}$″ thicknesses in fire-polished, ground and polished and Satinol finishes.

Approximate Light Transmission—unwired 80% (not made in wire glass).

USES—Decorative interior and exterior glazing.



Louvrex

(Cross section shown, actual size)

1 in. wide, alternately ascending and descending, plane-surfaced strips, resembling louvers in venetian blinds. Quite transparent, but Satinol finish increases obscurity and diffusion.

Made ⅛″ and $\frac{7}{32}$″ thick with fire-finished surfaces and $\frac{7}{32}$″ thick only with flat surface mechanically ground and polished; also with flat surface Satinol processed.

Approximate Light Transmission—unwired 90.4% not (made in wire glass).

USES—Interior and exterior glazing, partitions, transoms etc.

Flutex

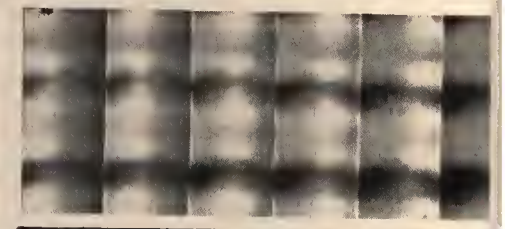
(Cross section shown, actual size)

Pattern consists of adjoining convex flutes 1 in. wide.

Made in ⅛″ and $\frac{7}{32}$″ thicknesses with fire-polished surfaces, and in $\frac{7}{32}$″ thickness only with flat surface mechanically ground and polished; also with flat surface Satinol processed.

Approximate Light Transmission—unwired 89% (not made in wire glass).

USES—Same as those of Louvrex. Provides effect of sharper, more definite pattern. (*Note:* Satinol Flutex, $\frac{7}{32}$″ thick, is widely used in fluorescent light fixtures).



Doublex

(Cross section shown, actual size. Broken line indicates right angle corrugation on back)

A double patterned glass whose corrugated design on one surface runs at right angles to fluted design on other surface, forming a pronounced directional effect.

Made in $\frac{7}{32}$″ thickness, with maximum width of 54″ and length of 136″.

Approximate Light Transmission—87%.

USES—Interior and exterior glazing, partitions, screens, illuminated wall panels and other decorative purposes.

specifications for five leading Blue Ridge glass patterns

Product	Uses	Light Diffusion and Obscurity	Pattern	Thickness	Plain Rolled, Fire Finish Max.*Width and Length	Surface			Approx. Weight Sq. Ft. Lbs. Glass Only
						Ground and Polished flat surface	Frosted Max. Width and Length	Satinol Max. Width and Length	
Louvrex	Decorative Interior and Exterior use	Slight	Alternate 1″ angular planes	⅛″	54″ x 132″			54″ x 132″	1¾ lbs.
				$\frac{7}{32}$″	54″ x 136″	54″ x 136″		54″ x 136″	2¾ lbs.
Flutex	Decorative Interior and Exterior use	Slight	Adjoining 1″ convex flutes	⅛″	54″ x 132″			54″ x 132″	1¾ lbs.
				$\frac{7}{32}$″	54″ x 136″	54″ x 136″		54″ x 136″	2¾ lbs.
Doublex	Decorative Interior and Exterior use	Good	1″ Block pattern	$\frac{7}{32}$″	54″ x 136″			54″ x 136″	2¾ lbs.
Stylex	Decorative Interior use	Medium (Directional Spread)	Fine ribs on flute	⅛″	48″ x 132″		48″ x 132″	48″ x 132″	1¾ lbs.
				$\frac{7}{32}$″	48″ x 136″	48″ x 136″	48″ x 136″	48″ x 136″	2¾ lbs.
Linex	Decorative Interior and Exterior use	Slight	½″ Concave flutes	⅛″	48″ x 132″		48″ x 132″	48″ x 132″	1¾ lbs.
				$\frac{7}{32}$″	48″x 136″	48″ x 136″	48″ x 136″	48″ x 136″	2¾ lbs.

*In some patterns, widths are available up to 60 inches, depending upon stocks on hand, but glass wider than 48 inches cannot be Frosted.

BLUE RIDGE wire glass

description

A continuous process wire glass wherein the mesh is chromium dipped to insure both clean wire and firmer adhesion of the glass to the wire. To insure greater strength, the wire is embedded as closely to the center of the glass as possible.

patterns

On the next page will be found descriptions of Hammered, Ribbed, Luminex, Skytex, Mazex, and Industrex patterned glass. These patterns are produced either with or without wire. Blue Ridge Aklo Heat Absorbing Glass in Hammered pattern can also be furnished with or without wire. In addition, Aklo Polished Wire Glass is produced in conventional hexagonal shaped mesh only. For information on Aklo Wire Glass, see pages 20 and 21.

approved fire retardant

Blue Ridge Wire Glass is an approved fire retardant, bearing number R-2129 of Underwriters' Laboratories, Inc. The rules of the National Board of Fire Underwriters limit the size of wire glass which can be glazed in openings exposed to fire hazard. In no case shall the unsupported area of the glass measure more than 48 inches in either dimension or exceed 720 square inches (5 sq. ft.). Typical maximum sizes which satisfactorily meet that requirement are 15 x 48, 18 x 40, 20 x 36 and 24 x 30. It should also be noted that wire glass used for this purpose must be set in noninflammable materials.

conventional polished wire glass

Used in all openings where clear vision and the security of non-scatterable, fire-retardant glass are desired. Note that wire is clean—no bubbles to mar the sharp outline or distort the vision.

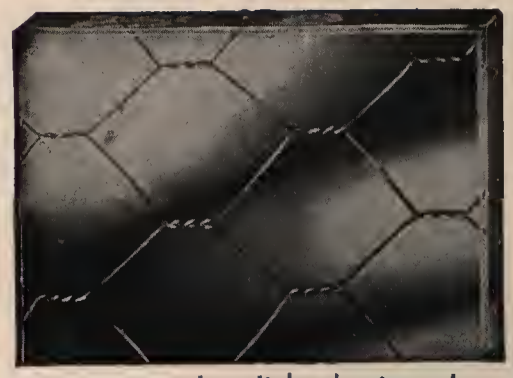
Approved fire-retardant bearing number R-2129 of Underwriters' Laboratories, Inc.

nuweld polished wire glass

The wires in this glass are welded together at each intersection to form a pleasing diagonal pattern.

The wires are subject to some misalignment. Absolute symmetry of the wire pattern cannot be guaranteed. This product is advised for openings when vision plus security of non-scatterable, fire-retardant glass is desired.

nuweld polished wire
(wire shown actual size)



conventional polished wire glass
(wire mesh shown actual size)

specifications for Blue Ridge wire glass

Product	Uses	Light Diffusion and Obscurity	Pattern	Thickness	Plain Rolled, Fire Finish *Max. Width and Length	Surface: Ground and Polished both surfaces	Surface: Frosted Max. Width and Length	Approx. Weight Sq. Ft. Lbs. Glass Only
Hammered	Windows, skylights and partitions requiring non-scatterable, fire-retardant glass. Registered as Fire Retardant No. R-2129 by Underwriters' Laboratories, Inc.	Medium	Raised	¼"	48" x 144"		48" x 144"	3½ lbs.
			Adjacent	⅜"	48" x 90"		48" x 90"	5 lbs.
			Lenses	½"	48" x 90"		48" x 90"	6½ lbs.
Ribbed		Medium (Directional Spread)	Fine	¼"	48" x 144"		48" x 144"	3½ lbs.
			Parallel	⅜"	48" x 90"		48" x 90"	5 lbs.
			Ribs	½"	48" x 90"		48" x 90"	6½ lbs.
Luminex		Slight	Smooth fine texture	¼"	48" x 144"		48" x 144"	3½ lbs.
Skytex		Good (Directional)	Parallel Ribs	¼"	48" x 144"		48" x 144"	3½ lbs.
Industrex		Medium	Compact Lens-shaped	¼"	48" x 144"		48" x 144"	3½ lbs.
Mazex		Good—Highly Obscure	Floral swirl	¼"	48" x 144"			3½ lbs.
Hex. Mesh Polished Wire		None		¼"	60" x 144"	60" x 144"		3½ lbs.
Nuweld Polished Wire		None		¼"	60" x 144"	60" x 144"		3½ lbs.

*In some patterns widths are available up to 60 inches depending upon stocks on hand, but glass wider than 48 inches cannot be Frosted.

practical patterned glass

Hammered

(Pattern shown, actual size)

USES—Popular for industrial glazing, both interior and exterior.

DESCRIPTION—An all-over series of raised, adjacent lenses that diffuse light at a moderate angle in all directions.

Approximate Light Transmission—unwired 90.0%; wired 84.0%.

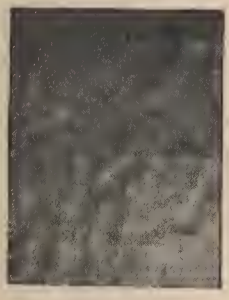
Ribbed

(Pattern shown, actual size)

USES—For factory glazing and skylights, and for fluorescent lighting fixtures.

DESCRIPTION—Approximately twenty-one fine parallel ribs per inch spread light along one axis only perpendicularly to ribs.

Approximate Light Transmission—unwired 84.4%; wired 78.4%.



Luminex

(Pattern shown, actual size)

USES—Recommended for industrial plants or commercial glazing where maximum light is desired.

DESCRIPTION—An almost transparent, fine textured pattern with high light transmission and only slight diffusion. Can be *Satinol** finished to assure complete privacy for walls or office partitions.

Approximate Light Transmission—unwired 88.4%; wired 82.4%.

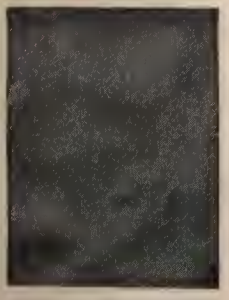
Skytex

(Pattern shown, actual size)

USES—Ideal for skylights; equally suitable for industrial glazing and for fluorescent fixtures.

DESCRIPTION — Obscure pattern of eight parallel ribs per inch which diffuses light on one axis only, perpendicular to ribs. Drains off condensation. Usually glazed with ribs vertical.

Approximate Light Transmission — unwired 78.9%; wired 72.9%.



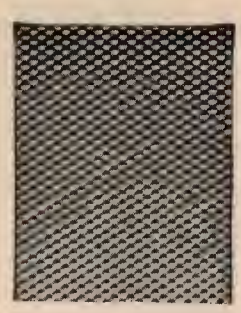
Velvex

(Pattern shown, actual size)

USES—Very popular for interior glazing—doors, partitions, transoms and shower stalls.

DESCRIPTION—A semi-transparent glass with a smooth texture—only slightly diffusing. Easy to clean, whether fire-polished or *Satinol** surface finish.

Approximate Light Transmission—89.0%. (Not made in wire glass.)



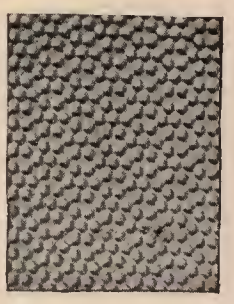
Industrex

(Pattern shown, actual size)

USES—Primarily for factory glazing. Also suitable for some types of commercial structures, fluorescent fixtures.

DESCRIPTION—Tiny lens-shaped figures give uniform diffusion of light over wide areas, provide medium degree of privacy, are easily cleaned. Not recommended for partitions in office buildings.

Approximate Light Transmission—unwired 88.2%; wired 82.2%.



Diffusex

(Pattern shown, actual size)

USES—For interior or exterior. Excellent for walls, partitions, transoms in offices, factories.

DESCRIPTION—Small, slightly elevated lenses provide uniform illumination with moderate angle of diffusion. Lenses are spaced to avoid dirt-collecting pockets; easily cleaned.

Approximate Light Transmission—87.6%. (Not made in wire glass.)

Reglex

(Pattern shown, actual size)

USES—Especially effective in partitions and doors. Suitable for use in fluorescent fixtures.

DESCRIPTION—64 pyramidal-shaped indentations to the square inch diffuse light very well in a cross-shaped light pattern; highly obscure.

Approximate Light Transmission—52.3%. (Not made in wire glass.)

Muralex

(Pattern shown, actual size)

USES—Widely used for distinctive effects in partitions, doors, transoms, walls, ceiling lights.

DESCRIPTION—Finely engraved, fairly obscure all-over pattern that provides medium distribution of light at a moderate angle. Rich-looking, and very easy to clean.

Approximate Light Transmission—86.0% (Not made in wire glass.)

Pebblex

(Pattern shown, actual size)

USES—Provides well-lighted privacy when used for office partitions and general interior glazing.

DESCRIPTION—A deeply imprinted, irregular pebble design that is highly obscure and unusually brilliant in appearance. Diffuses light at wide angles.

Approximate Light Transmission—79.7%. (Not made in wire glass.)

*SATINOL FINISH provides good light diffusion and excellent obscurity, assuring privacy plus light.

Florex

(Pattern shown, actual size)

USES—Interior glazing only—partitions, transoms, doors and windows.

DESCRIPTION—A graceful floral pattern. Its brilliance is largely due to the quality of the glass, since the imprinting is based on the principle of avoiding sharp grooves as much as possible.

Approximate Light Transmission—86.2%. (Not made in wire glass.)

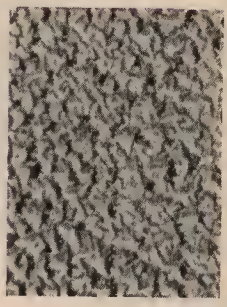
Pointex

(Pattern shown, actual size)

USES—Interior glazing in both plain and frosted finish. For sign work in frosted finish.

DESCRIPTION—Semi-transparent, with one smooth surface and one covered with about 570 irregularly sized bosses per square inch.

Approximate Light Transmission—92.5%. (Not made in wire glass.)



Sterlex

(Pattern shown, actual size)

USES—Office partitions and general interior glazing where well-lighted privacy is needed; also for lighting fixtures.

DESCRIPTION—Somewhat similar to Pebblex, but less deeply imprinted. Diffuses light at wide angles, provides high degree of obscurity.

Approximate Light transmission—87.2%. (Not made in wire glass.)

specifications for practical patterned glass

Product	Uses	Light Diffusion and Obscurity	Pattern	Thickness	Plain Rolled, Fire Finish *Max. Width and Length	Ground and Polished on Flat Surface Max. Width and Length	Frosted Max. Width and Length	Satinol Max. Width and Length	Approx. Weight Sq. Ft. Lbs. Glass Only
Hammered	Industrial Glazing	Medium	Raised Adjacent Lenses	1/8"	48" x 132"		48" x 132"	48" x 132"	1¾ lbs.
				7/32"	48" x 136"		48" x 136"	48" x 136"	2¾ lbs.
				3/8"	48" x 90"		48" x 90"		5 lbs.
				1/2"	48" x 90"		48" x 90"		6 lbs.
Ribbed	Industrial Glazing	Medium (Directional Spread)	Fine Parallel Ribs	1/8"	48" x 132"		48" x 132"	48" x 132"	1¾ lbs.
				7/32"	48" x 136"		48" x 136"	48" x 136"	2¾ lbs.
				3/8"	48" x 90"		48" x 90"		5 lbs.
				1/2"	48" x 90"		48" x 90"		6 lbs.
Luminex	Industrial Glazing for Maximum Daylight	Slight	Smooth fine texture	1/8"	48" x 132"		48" x 132"	48" x 132"	1¾ lbs.
				7/32"	48" x 136"		48" x 136"	48" x 136"	2¾ lbs.
Pointex	General Glazing	Slight	Irregular Raised Bosses	1/8" (thin)	48" x 120"		48" x 120"		1½ lbs.
Skytex	Industrial Glazing	Good (Directional Spread)	Parallel Ribs	1/8"	48" x 132"		48" x 132"	48" x 132"	1¾ lbs.
				7/32"	48" x 136"		48" x 136"	48" x 136"	2¾ lbs.
Velvex	Interior Partitions, Doors, Transoms	Slight	Smooth mottled texture	1/8"	48" x 132"		48" x 132"	48" x 132"	1¾ lbs.
				7/32"	48" x 136"		48" x 136"	48" x 136"	2¾ lbs.
Industrex	Factory Glazing	Medium	Compact, lens-shaped	1/8"	48" x 132"		48" x 132"	48" x 132"	1¾ lbs.
				7/32"	48" x 136"		48" x 136"	48" x 136"	2¾ lbs.
Diffusex	Interiors for soft light diffusion	Medium	Elevated small lenses	1/8"	48" x 132"			48" x 132"	1¾ lbs.
				7/32"	48" x 136"	48" x 136"		48" x 136"	2¾ lbs.
Pebblex	Interior Glazing	Good	Irregular—pebbled effect	1/8"	48" x 132"			48" x 132"	1¾ lbs.
				7/32"	48" x 136"	48" x 136"		48" x 136"	2¾ lbs.
Reglex	Interior Glazing	Good	Regular Pyramidal Indentations	1/8"	48" x 132"			48" x 132"	1¾ lbs.
				7/32"	48" x 136"	48" x 136"		48" x 136"	2¾ lbs.
Muralex	Finer Interior Glazing	Good	Finely engraved—indeterminate	1/8"	48" x 132"			48" x 132"	1¾ lbs.
				7/32"	48" x 136"	48" x 136"		48" x 136"	2¾ lbs.
Florex	Interior Glazing	Good	Floral	1/8"	48"x 132"			48" x 132"	1¾ lbs.
				7/32"	48" x 136"			48" x 136"	2¾ lbs.
Sterlex	Office Partitions General Interior Glazing	Good	Pebbled Effect	1/8"	48" x 132"			48" x 132"	1¾ lbs.
				7/32"	48" x 136"			48" x 136"	2¾ lbs.

*In some patterns, widths are available up to 60 inches depending on stocks on hand, but glass wider than 48 inches cannot be Frosted.

BLUE RIDGE Aklo heat absorbing

description

Blue Ridge Aklo is a "low expansion" figured and wire glass of blue-green color, with extremely high resistance to passage of solar infrared rays and to sun glare when frosted. Provides free transmission of pleasing, eye-resting quality light—entirely suitable for precision and close work and other operations where eye fatigue is encountered.

patterns

One pattern—Hammered, wired and unwired—is manufactured.

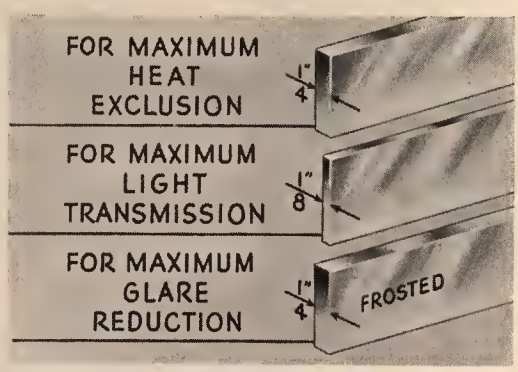
Abundant natural daylight, *without glare*, improves vision for close work in this East Hartford, Conn., machine shop.

glare reduction

The primary function of Aklo Glass with fire-finished surface is to retard the entry of solar heat. To reduce sun glare through windows and skylights and, at the same time, improve illumination, Frosted Aklo should be used. In every instance where glare reduction is the primary purpose of installation, ¼-inch thickness is recommended.

radiometer

The unusual heat absorption and glare reducing qualities of Blue Ridge Aklo Glass are visually demonstrated with the portable Radiometer Kit, shown above. Your glass distributor will gladly show you Aklo's superiority right in your own office.



FOR SPECIFICATIONS

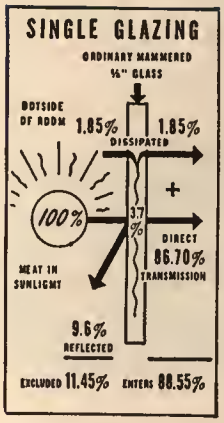
"To combine glare reduction and solar heat exclusion, specify Frosted Aklo or Hammered (Wired or Unwired), in ¼-inch thickness. "All other skylights and window areas facing north or in permanent shade and designated on the drawings to receive obscure glass shall be glazed with non-heat-absorbing glass of the patterns, thicknesses and types indicated herein."

characteristics of Aklo Glass

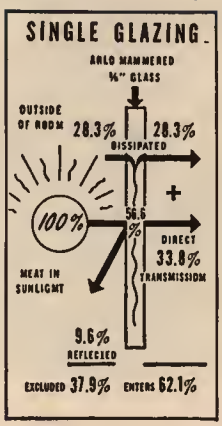
The coefficient of expansion of Aklo Glass is approximately 20% less than ordinary glass—an important feature in sun heat control. To combine reduction of glare and exclusion of solar heat, specify "*Frosted* Aklo Hammered (Wired or Unwired), in ¼-inch thickness" (if transparency is desired, specify ¼-inch Aklo Polished Wire). Blue Ridge Aklo Glass complies with requirements of E9-Type H Glass for absorbing or intercepting ultraviolet and infrared rays, Federal Specifications DDG-451. Aklo Glass also conforms to those specifications outlined in paragraph No. 24 of May, 1939, Glass and Glazing Section of the Treasury Department.

Over 7 miles of Frosted Aklo in Melrose Park, Ill., plant of International Harvester cuts down solar heat, reduces sun glare.

How Aklo Stops Sun Heat Radiation



1



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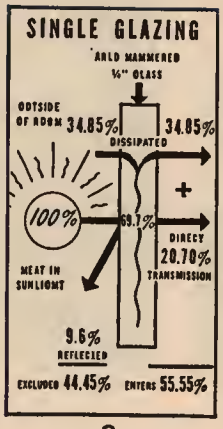


3

These three charts show how Aklo absorbs excessive solar heat while admitting ample light. They compare the flow of the sun's heat through (1) ⅛-inch ordinary hammered glass, (2) ⅛-inch Aklo Hammered Glass and (3) ¼-inch Aklo Hammered Glass. Note how much more sun heat is dissipated by Aklo Glass than by ordinary glass of equal thickness.

Because Aklo Glass traps the solar heat in summer, it makes work areas far more comfortable than other types of industrial glass. When *Frosted*, Aklo greatly reduces glare—an aid to precision operations.

Comparative Qualities of Aklo and Ordinary Glass

Thickness and Kind of Glass	Heat			Efficiency
	Total Heat of Sun Entering Room Through Glass			Ratio of light transmission to heat passing directly through glass
	Reradiated by the glass	Transmitted directly through glass	Total heat entering through the glass	
HAMMERED PATTERN				
⅛" Aklo Glass—Unwired	28.30%	33.80%	62.10%	1.87:1
⅛" Ordinary (Lime) Glass—Unwired	1.85	86.70	88.55	1.03:1
⅛" Frosted Aklo Glass—Unwired	34.00	23.00	57.00	1.87:1
¼" Aklo Glass—Unwired	34.85	20.70	55.55	2.58:1
7/32" Ordinary (Lime) Glass—Unwired	3.70	83.00	86.70	1.07:1
¼" Aklo Glass—Wired	35.70	19.00	54.70	2.57:1
¼" Ordinary (Lime) Glass—Wired	5.60	79.20	84.80	1.07:1
¼" Frosted Aklo Glass	38.70	13.60	52.30	2.58:1
FOR COMPARISON ONLY				
⅛" Aklo Glass—Polished	27.00	38.00	65.00	1.87:1
⅛" Ordinary (Lime) Glass—Polished	1.85	88.30	90.15	1.03:1
¼" Aklo Glass—Polished	35.50	21.00	56.50	2.57:1
¼" Ordinary (Lime) Glass—Polished	3.75	84.50	88.25	1.07:1

Specifications for Blue Ridge Aklo Heat Absorbing Glass

Product	Uses	Light Diffusion and Obscurity	Pattern	Thickness	Plain Rolled Fire Finished Max. Width and Length	Gr'nd and Polished	Frosted* Max. Width and Length	Approx. Weight Sq. Ft. Lbs.
FIGURED GLASS								
AKLO—Hammered	Substantially reduces sun's heat, admits daylight and improves illumination.	Medium	Raised Adjacent Lenses	⅛"	32" x 132"		32" x 132"	1¾ lbs.
				¼"	32" x 136"		32" x 136"	3 lbs.
WIRE GLASS								
AKLO—Hammered	Same as for AKLO Heat Absorbing Figured Glass. However, being wired, each is a non-scatterable, fire-retardant glass.	Medium	Raised Adjacent Lenses	¼"	24" x 144"		24" x 144"	3 lbs.
AKLO—Polished Wire (Hex. Mesh only)		None		¼"	24" x 60"	X		3 lbs.

*Frosted AKLO provides excellent diffusion of light, high degree of obscurity and effective glare reduction.

BLUE RIDGE Aklo glass (continued)

Frosted Aklo Hammered glass is used for glazing the windows of the Giddings & Lewis Machine Tool Company, Fond du Lac, Wisconsin. This reduces the sun's heat. Architect: Frank Stepnoski & Son, Fond du Lac.

Reduction of the sun's glare is important to such a textile mill as the Crawford Manufacturing Company of Richmond, Va. In addition, the heat absorbing qualities of Frosted Aklo make working conditions more pleasant.

representative list of Blue Ridge Aklo users

Fairfax Mills, Fairfax, Ala.
Goodyear Tire & Rubber Co., Gasden, Ala.
Dwight Mfg. Co., Alabama City, Ala.
Aluminum Co. of America, Phoenix, Ariz.
Southern Kraft Corp., Camden, Ark.
Pacific Mfg. Co., Santa Clara, Cal.
Hughes Aircraft Corp., San Diego, Cal.
Rohr Aircraft Corp., San Diego, Cal.
New Departure Mfg. Co., Bristol, Conn.
The Bullard Co., Bridgeport, Conn.
Vickers, Inc., Waterbury, Conn.
Pratt & Whitney Aircraft Corp., Hartford, Conn.
Pan-American Hangar, Miami, Fla.
Florida Linen Supply Co., Miami, Fla.
L & H Shirt Company, Cochran, Ga.
Dixie Cotton Mills, La Grange, Ga.
Columbus Mfg. Co., Columbus, Ga.
West Point Mfg. Co., West Point, Ga.
Container Corporation, Chicago, Ill.
Twin Disc Clutch Co., Rockford, Ill.
Buick Motors Corp., Norpaul, Ill.
Naval Ordnance Plant, Forest Park, Ill.
Republic Aviation Corp., Evansville, Ind.
McQuay Norris Mfg. Co., Connersville, Ind.
Aluminum Co. of America, Lafayette, Ind.
Tobin Packing Co., Fort Dodge, Iowa
Cessna Aircraft Corp., Wichita, Kan.
Boeing Aircraft Corp., Connell, Kan.
Menzel Co., Louisville, Ky.
Nash Kelvinator, New Orleans, La.
T. J. Murphy Fur Co., Lewiston, Me.
Revere Copper & Brass Co., Haletborpe, Md.
Glenn L. Martin Co., Middle River, Md.
Danzer Metal Works, Hagerstown, Md.
Ludlow Mfg. & Sales Co., Ludlow, Mass.
United States Rubber Co., Chicopee Falls, Mass.
Pacific Mills, Lawrence, Mass.
Leland Gifford Co., Worcester, Mass.
Ford Motor Bomber Plant, Willow Run, Mich.
Extruded Metals Corp., Grand Rapids, Mich.
Fisher Tank Corp., Grand Blanc, Mich.
Chevrolet Gear & Axle Corp., Hamtramck, Mich.
Long Hall Laundry, Kansas City, Mo.
American Can Co., St. Louis, Mo.
Curtiss-Wright Corp., Robertson, Mo.
Westcott Valve Co., St. Louis, Mo.
Martin Bomber Plant, Ft. Crook, Neb.
Waumbec Mills, Manchester, N. H.
Hyatt Roller Bearing Division, Clark Township, N. J.
Singer Mfg. Co., Finderne, N. J.
De Laval Steam Turbine Co., Trenton, N. J.
General Cable Corp., Perth Amboy, N. J.
Rochester Products Div.—General Motors Corp., Rochester, N. Y.
New York Airbrake Co., Watertown, N. Y.
Worthington Pump Co., Buffalo, N. Y.
American Locomotive Co., Auburn, N. Y.
Republic Aviation Corp., Farmingdale, L. I., N. Y.
Concord Knitting Co., Concord, N. C.
Spofford Mills, Inc., Wilmington, N. C.
Parksdale Mills, Inc., Gastonia, N. C.
Arlington Mill, Gastonia, N. C.
Rosemary Mfg. Co., Roanoke Rapids, N. C.
Lake City Malleable, Inc., Ashtabula, Ohio
Canton Drop Forge, Canton, Ohio
Goodyear Rubber Co., Akron, Ohio
Curtiss-Wright Corp., Columbus, Ohio
Thompson Aircraft Products Co., Euclid, Ohio
Sylvania Electric Products Co., Emporium, Pa.
Landis Tool Co., Waynesboro, Pa.
National Biscuit Co., Philadelphia, Pa.
Curtiss-Wright Propeller Div., Beaver, Pa.
Naval Air Station, Davisville, R. I.
Bowling Green Spinning Co., Clover, S. C.
Ware Shoals Mfg. Co., Ware Shoals, S. C.
Brandon Corp., Greenville, S. C.
Equinox Mills, Anderson, S. C.
Rivermont Orchids, Inc., Signal Mountain, Tenn.
Tennessee Eastman Corp., Kingsport, Tenn.
Shelby Paper Box Co., Memphis, Tenn.
General Tire & Rubber Co., Waco, Tex.
Dow Chemical Co., Velosco, Tex.
Haggar Pants Co., Dallas, Tex.
Naval Ammunition Depot, Portsmouth, Va.
U. S. Marine Corps, Quantico, Va.
Sylvania Electric Products Co., Huntington, W. Va.
Corning Glass Works, Parkersburg, W. Va.
United States Rubber Co., Eau Claire, Wis.
Giddings & Lewis Machine Co., Fond du Lac, Wis.

BLUE RIDGE Securit patterned glass

description

Securit is made by subjecting Blue Ridge Patterned glass, which has been annealed in the regular manner, to a special process of heat treatment and rapid cooling that creates a highly compressed zone at the outer surface. The tensile strength of Securit, as determined by its modulus of rupture, is over 3½ times greater than in a piece of regular Blue Ridge glass of similar pattern and thickness. When the limit of its strength is reached, Securit disintegrates into small, rounded, relatively smooth particles.

In addition to its greater strength, Securit is extremely resistant to temperature variations which may affect a whole sheet, or only portions.

physical characteristics

Securit's physical characteristics determined by laboratory tests follow:

Modulus of Rupture—28,800 lbs. per sq. in. of cross section.
Hardness (Mohs' Scale)—6
Thermal Endurance—400° F. differential
Safe Working Temperature (maximum)—650°F.
Maximum sizes:
Square—30″ x 30″ Oblong—30″ x 72″

advantages

Due to its special heat treatment, Securit Blue Ridge patterned glass possesses the following advantages:

Three to five times stronger than "non-*Securitized*" patterned glass.
Withstands impact shock far beyond the limits of ordinary rolled glass.
More resistant to thermal shock.

A safer glass since, when it does break, it disintegrates into small diced particles rather than large fragments with sharp jagged edges.

available forms

Patterned Glass $\frac{7}{32}$″ thickness—Hammered, Ribbed, Luminex, Skytex, Velvex, Industrex, Diffusex, Florex, Pebblex, Reglex, Muralex, Louvrex, Flutex, Stylex, Linex, Sterlex.

Patterned Glass ⅜″ and ½″ thickness—Hammered, Ribbed.

Patterned Aklo Glass ¼″ thickness—Hammered.

Patterned Glass $\frac{7}{32}$″ polished one side—Diffusex, Pebblex, Muralex, Reglex, Louvrex, Flutex, Stylex, Linex.

Note: Wire glass cannot be "Securitized".

uses

Office doors or partitions which are subjected to considerable slamming or bumping.
Lighting fixture diffusing glass, and lenses for lamps.
Ceiling sash or sub-skylights.
Tops for cutting tables or counters.
Push plates and kick plates.
Commercial and residential shelving.
Guards around areas subjected to intense heat.
Balustrades and stair railings.
Windows frequently broken by flying materials.

With its special physical qualities, numerous patterns and surface treatments, Securit is a versatile product. Practical uses are being found for it almost daily. The Blue Ridge Glass Corp., Kingsport, Tenn., welcomes inquiries from architects and opportunities to solve their problems.

Warning: Securit tempered glass is supplied by Blue Ridge Glass Corp., in the actual shapes and sizes required, but it cannot be subsequently cut or ground. Cutting or puncturing the surface or chipping the edges will cause immediate disintegration of the glass.

Securit office railing of Satinol Louvrex Glass is used in the Las Vegas, Nevada ticket office of the Union Pacific Railroad. This application of Securit Louvrex is both practical and handsome.

Blue Ridge Aklo Glass may also be Securitized. To overcome the salt fumes and intense heat in the Salt Curing Bath Department of the Dayton Forge & Heat Treating Co., Dayton, Ohio, windows are glazed with Securit Hammered Aklo.

L·O·F Hi-Test Safety glass

Libbey-Owens-Ford Hi-Test Safety Glass is made of two lights of polished plate or sheet glass bonded by tough transparent plastic, and represents the highest achievement in safety glass quality and performance. An important feature is that when safety glass is fractured, the particles of glass tend to adhere to the plastic, affording more protection against flying glass fragments.

For years, L-O-F Safety Glass has been a standard in the automotive and transportation industries.

Uses

Libbey-Owens-Ford Safety Glass is recommended for interior glazing areas where additional protection is desired.

Bullet Resisting Plate glass is a lamination of three or more lights of glass and transparent plastic. It is commonly used for glazing bank teller cages, cash booths and observation windows in pressure test chambers.

Note: Safety Glass made with *Tuf-flex* (page 11) has extra strength qualities.

Kinds of Glass	Number of Lights	Thickness of Safety Glass	Thickness Tolerance	Maximum Area per Lt.	Net Weight Lbs. per Sq. Ft.
Thin Safety Glass	2	5/32"	−1/32"	Up to 7 sq. ft.	1.92
S.S. Safety Glass	2	7/32"	±1/32"		2.94
Combination Safety Glass (S.S. & D.S.)	2	11/64"	±1/32"	Sizes up to 15 sq. ft. of area	2.95
D. S. Safety Glass	2	1/4"	±1/32"		3.16
Safety Plate	2	1/4"	±1/32"	60 x 74	3.16

L·O·F DISTRICT OFFICES

Atlanta 3, Ga. Lamar 0066
1001 Whitehead Building

Boston 16, Mass. Hubbard 2-0100
1437 Statler Building

Buffalo 3, N. Y. Cleve. 0291
1126 Rand Building

Chicago 3, Ill. Central 6-2490
120 So. LaSalle St.

Cincinnati 2, Ohio Main 6174
912 Enquirer Building

Cleveland 13, Ohio Main 7180
1302 Terminal Tower Building

Dallas 1, Texas Riverside 4026
1402 Tower Petroleum Building

Denver 2, Colo. Tabor 8015
414 Tramway Building

Detroit 2, Mich. Mad. 0080
610 Fisher Building

Indianapolis 4, Ind. Franklin 1363
724 Circle Tower

Kansas City 6, Mo. Victor 5360
1004 Baltimore Street

Las Angeles 13, Cal. Michigan 0854
905 Architects Building

Memphis 3, Tenn. 37-7589
540 Sterick Building

Milwaukee 3, Wis. Broadway 5704
161 West Wisconsin Avenue

Minneapolis 2, Minn. Main 8429
506 Savings & Loan Building

New Yark 22, N. Y. Eld. 5-1025
570 Lexington Avenue

Philadelphia 2, Pa. Penny. 5-8666
1528 Walnut Street

Richmond 19, Va. 3-3034
1122 Mutual Assurance Society Bldg.

St. Louis 1, Mo. Central 9863
411 N. 7th Street

San Francisco 5, Cal. Sutter 1-4360
635 Rialto Building

Seattle 1, Wash. Seneca 2513
210 Lloyd Building

Toledo 3, Ohio Main 5291
12th Floor Nicholas Building

Washington 6, D. C. Sterling 4472
806 Connecticut Avenue

See the yellow pages of your telephone directory for your nearest Libbey-Owens-Ford glass distributor.

LIBBEY - OWENS - FORD GLASS COMPANY
TOLEDO 3, OHIO

a Great Name in **GLASS**

Specify MISSISSIPPI GLASS

CATALOG NO. 49

Mississippi Products

Rolled Light Diffusing Glasses, Scientifically Designed to Distribute Illumination Advantageously

PRODUCTS

FIGURED GLASS
FIGURED WIRE GLASS
FIGURED MISCO WIRE GLASS
POLISHED FIGURED GLASS
POLISHED WIRE GLASS
POLISHED MISCO WIRE GLASS
HEAT ABSORBING GLASS
GLARE REDUCING GLASS
STRUCTURAL CORRUGATED GLASS
CORRUGATED WIRE GLASS
FLINT AND COLORED CATHEDRAL GLASS
CATHEDRAL AND WIRE VITAGLASS

MISSISSIPPI GLASS

The various patterns of Mississippi Figured Glass make it possible to choose styles that will be in keeping with the architecture of a building, as well as to obtain the maximum possible advantage from daylight illumination.

Brilliancy, strength, true cutting surface, uniformity of color and excellence of quality in Mississippi patterns combine with moderate cost to make Mississippi Glass the choice of thousands of architects, engineers and builders.

DISTRIBUTION

Mississippi Products are carried in stock by glass jobbers and dealers in every large city in the United States.

MISSISSIPPI WIRE GLASS

The Mississippi Glass Company is the original manufacturer of Solid Wire Glass, which is universally recognized as the standard, being the product upon which the Underwriters' standard was based in 1899.

Wire Glass—is glass having a wire netting completely embedded within the sheet in a position parallel to each surface. This is automatically effected while the glass is in a molten state and, therefore, insures homogeneous and solid wire glass.

ADAPTABILITY OF WIRE GLASS

The object of Wire Glass is to afford constant fire protection at a minimum cost, at the same time admitting and diffusing the light. It is particularly suitable for use in windows, doors, transoms, skylights, and all places where fire or breakage protection is required.

ADVANTAGES OF WIRE GLASS

When employed as above mentioned, Wire Glass may be cracked by severe heat or sudden shock, but the wire mesh will hold the pieces in place, preventing their falling and causing serious injury or loss of life. It will also prevent draft and hold a fire within the bounds of its origin.

UNDERWRITERS' REQUIREMENTS

Standard wire glass ¼ in. in thickness for use in labeled fire window frames and in such labeled fire doors and fire door frames as are recognized when equipped with glass lights.

See Underwriters' Laboratories classification of wire glass sizes permissible for:

1—Openings in corridor and room partitions.
2—Openings in exterior walls.
3—Openings to exterior fire escapes.
4—Openings in vertical shafts.

ORDERING

Glass being one of the last materials to go into a building, it is often not ordered far enough ahead to give the manufacturer time to cut the glass to sizes and make shipment in time to enclose the building by the date desired. It is, therefore, advisable to give this point consideration in due time in order to avoid unnecessary delay.

In ordering always specify width first. In wire glass, the twist of the wire runs with the length of the sheet. When giving sizes remember that the first dimension is understood to be the width.

HOW TO SPECIFY WIRE GLASS

Mississippi Wire Glass shall be installed in (specify location) and in all places marked "W.G." on plans and elevations.

The Wire Glass to have a thickness of at least ¼ in. at thinnest point. Wire mesh to be not larger than ⅞ in., and no wire used for such mesh to be smaller than No. 24 B&S gauge.

Wire mesh to be (specify) standard woven wire, or welded Misco wire mesh.

State name of glass pattern and location in which it is to be installed.

Identification on Mississippi Wire Glass

This seal is 2¼ in. in diameter and is printed in red.

For Full List of Sizes and Thicknesses of Mississippi Products See Page 3

MISSISSIPPI PRODUCTS—MAXIMUM SIZES AND APPROXIMATE WEIGHTS

PLAIN GLASS

NAME	Thickness	Max. Width	Max. Length	Weight Unpk'd	Weight Packed	Thickness	Max. Width	Max. Length	Weight Unpk'd	Weight Packed
Aurora	1/8	48	132	2.0	2.5	7/32	60	136	2.7	3.2
Bandlite	1/8	48	132	2.0	2.5	7/32	54	136	2.7	3.2
Bevelite	1/8	48	132	2.0	2.5	7/32	54	136	2.7	3.2
Dewlite	1/8	48	132	2.0	2.5	7/32	60	136	2.7	3.2
Factrolite	1/8	48	132	2.0	2.5	7/32	60	136	2.7	3.2
Florentine	1/8	48	132	2.0	2.5	–	–	–	–	–
Hammered	1/8	48	132	2.0	2.5	7/32	60	136	2.7	3.2
Hylite	1/8	48	132	2.0	2.5	7/32	60	136	2.7	3.2
Luxlite	1/8	48	132	2.0	2.5	7/32	60	136	2.7	3.2
Magnalite A.	1/4	60	144	3.3	4.0	–	–	–	–	–
Magnalite B.	1/4	60	144	3.3	4.0	–	–	–	–	–
Pentecor	1/8	48	100	2.0	2.5	7/32	60	136	2.7	3.2
Pluralite	1/8	48	132	2.0	2.5	7/32	60	136	2.7	3.2
Ribbed	1/8	48	132	2.0	2.5	7/32	60	136	2.7	3.2
Ribbed	3/8	60	144	5.0	6.5	1/2	60	132	6.5	8.0
Smooth Rough	1/8	48	132	2.0	2.5	7/32	60	136	2.7	3.2
Syenite	1/8	48	132	2.0	2.5	7/32	60	136	2.7	3.2

NAME	Thickness	Max. Width	Max. Length	Weight Unpk'd	Weight Packed	Thickness	Max. Width	Max. Length	Weight Unpk'd	Weight Packed
Bandlite Softone	7/32	54	136	2.7	3.2
Bevelite Softone	7/32	54	136	2.7	3.2
Broadlite	1/8	48	132	2.0	2.5
Broadlite	7/32	60	136	2.7	3.2
Coolite Hammered	1/8	34	132	2.0	2.5
Coolite Hammered	1/4	34	144	3.3	4.0
Improved Structural Corrugated Flint	3/8	50	144	6.3	8.2
Structuralite	3/8	50	144	5.3	6.7
Polished Auroro	7/32	60	135	2.8	3.5
Polished Dewlite	7/32	60	135	2.8	3.5
Polished Syenite	7/32	60	135	2.8	3.5
Vita Glass Plote	5/32	60	100	2.3	3.0
Vita Glass Sheet	1/9	46	60	1.6	2.2
Vito Gloss Rolled	1/8	30	90	2.0	2.5
Vita Glass Rolled	1/4	30	72	3.3	4.1
Vito Glass Agricultural	1/8	30	90	2.0	2.5

WIRE GLASS

Factrolite	1/4	60	144	3.4	4.0	–	–	–	–	–
Hammered	1/4	60	144	3.4	4.0	–	–	–	–	–
Hylite	1/4	60	144	3.4	4.0	–	–	–	–	–
Magnalite A.	1/4	60	144	3.4	4.0	–	–	–	–	–
Magnalite B.	1/4	60	144	3.4	4.0	–	–	–	–	–
Pentecor	1/4	60	144	3.4	4.0	–	–	–	–	–
Ribbed	1/4	60	144	3.4	4.0	3/8	60	132	5.0	7.0
Ribbed	1/2	60	132	6.5	8.5	5/8	46	132	8.5	10.5
Ribbed	3/4	44	132	10.0	12.0	7/8	44	120	11.5	13.5
Syenite	1/4	60	144	3.4	4.0	–	–	–	–	–

Smooth Rough	1/4	60	144	3.4	4.0	3/8	60	132	5.0	7.0
Palished	1/4	60	132	3.1	4.4	3/8	60	132	5.1	7.0
Polished	1/2	44	120	7.0	9.0	5/8	42	108	8.2	10.2
Polished	3/4	42	96	10.0	12.0	–	–	–	–	–
Coolite Hammered						1/4	34	144	3.4	4.0
Corrugated Flint						3/8	55	132	6.3	8.2
Misco Hammered						1/4	56	144	3.4	4.0
Misco Polished						1/4	58	132	3.7	4.4
Misco Polished Coolite						1/4	58	132	3.7	4.4
Vita Glass Raugh						1/4	30	72	3.4	4.1

GLARE REDUCING FINISH

Can be applied to both surfaces only of glasses listed above except the Vita glasses. G.R. treatment cannot be applied ta glass aver 30" x 136". Softone finish an Bandlite and Bevelite con be applied to either or both surfaces.

CATHEDRAL GLASS

Hammered	No.	Hammered	No.	Hammered	No.	Hammered	No.	Hammered	No.	Smooth	No.
Flint	1	Amber	34LLL	Amber	47	Cobalt Blue	58	Var. Opal.	313M	Flint	1
Green	13	Amber	34LL	Amber	48	Green	63	Ripple	No.	Amber	34LLLL
Wine	16	Amber	34L	Amber	49	Green	65	Flint	1	Opal	300 D
Wine	18	Amber	34	Capper Blue	50	Var. Opal.	305M	Amber	34L	Opal	300 W
Wine	20	Amber	35	Copper Blue	51	Var Opal.	306M	Seeded	Na.		
Wine	25	Amber	45	Cabalt Blue	56	Var. Opal.	308M	Flint	1		
Amber	34LLLL	Amber	46	Cobalt Blue	57	Var. Opal.	310M	Amber	34LLLL		

Cathedral thickness scant 1/8". Maximum width 30" or 32". Maximum length 84" or 90". Weight: Unpacked, 1½ lbs. Packed, 2 lbs.

General Notes:

Mast glasses are often available up to 60" wide. Information on request. Weights shown are in pounds per square foot. Dimensians in inches. The packed weights listed are average for all case sizes; ardinarily the glass in full cases will weigh somewhat less than listed. Full cases of stock sheets weigh approximately 1500 lbs. Mill sizes 950 lbs. Normai cut sizes 900 lbs. See aur packing schedule.

In ordering glass, the first dimensian shauld be the width, the second the length. All ribs and twists in wire run with the length.

POLISHED "MISCO" WIRE GLASS
PATTERN ACTUAL SIZE

"MISCO" POLISHED WIRE GLASS

Each Intersection of Wire Is Welded

"Misco" is the latest development in wire glass brought about as a result of many requests from the architectural and engineering professions for something as efficient as the Standard Wire Glass, but more attractive in appearance. "Misco" has been submitted to the Underwriters' Laboratories for test and received their full approval. "Misco" can be obtained not only in polished, as illustrated, but in other surface patterns. (See chart, page 3). To be sure of getting this new glass, specify it by name—"Misco."

MISSISSIPPI POLISHED WIRE GLASS

The Standard

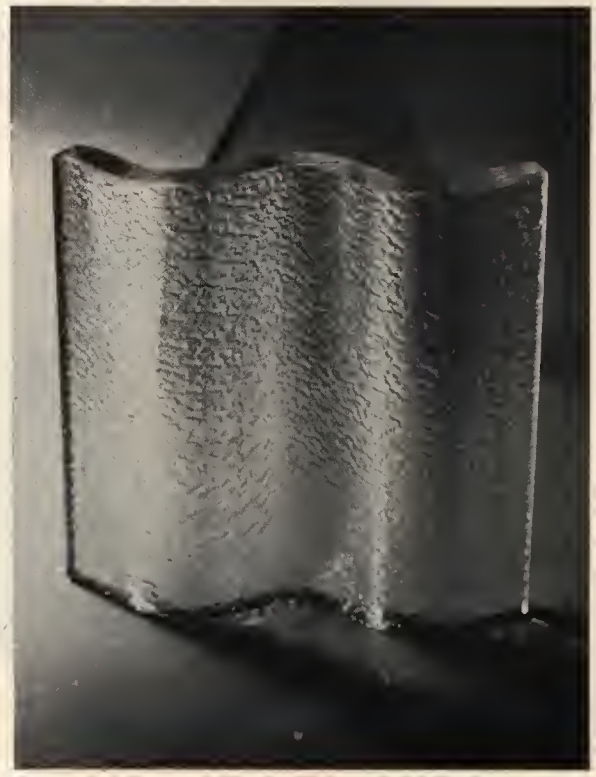
In 1893 the Mississippi Glass Co. began the manufacture of wire glass. Fire and breakage demonstrations soon convinced architects, engineers and the general public of its ability to protect buildings from fire without keeping the interior in utter darkness.

A circular sent out Aug. 24, 1899 stated "The Solid Wire Glass manufactured by the Mississippi Glass Co. is the only make of wire glass officially approved by Boards of Fire Insurance Underwriters. Since that time wire glass has been made by other manufacturers but Mississippi wire glass is still *recognized as standard.*

POLISHED WIRE GLASS
PATTERN ACTUAL SIZE

7a

IMPROVED STRUCTURAL CORRUGATED GLASS



HALF SIZE

A heavy corrugated glass with one surface lightly stippled for obscurity and light diffusion, corrugations 2½ in. from center to center, thickness of glass approximately ⅜ in. and over-all thickness of the sheet approximately 1⅛ in.

This glass offers Architects and Decorators a wonderful opportunity to create new and attractive lighting and decorative effects for interiors of Offices, Showrooms, Banks, and Residences.

It has an unusual, substantial, rich appearance of quality and character, which is most impressive to any critical observer.

ACTUAL SIZE

"STRUCTURALITE"

A heavy glass with one surface lightly stippled, the shallow corrugations giving the effect of a straight line pattern of unusual life and character.

This is a companion pattern to Improved Structural Corrugated, in that the surface is substantially the same with very shallow corrugations. It can be used in the same manner and in perfect harmony, if so desired.

Corrugations 2½ in. from center to center, thickness of glass approximately ⅜ in. and overall thickness of the sheet approximately ½ in.

ACTUAL SIZE

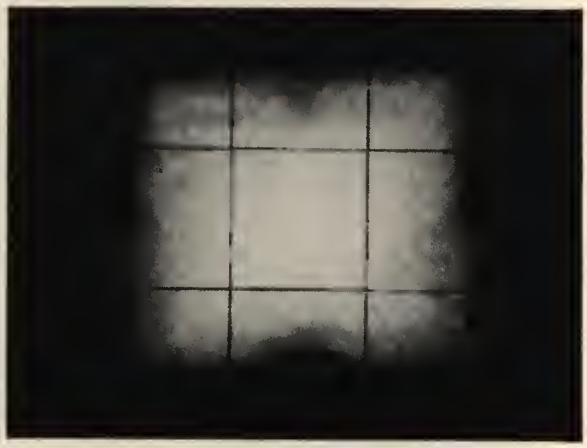
HALF SIZE

ADDITIONAL INFORMATION ON PAGE 3

PATTERN ACTUAL SIZE
Plain—⅛ in.-7/32 in. Thick
Polished—7/32 in. Thick
APPROX. LIGHT TRANSMISSION FOR ⅛ IN. THICKNESS = 0.76

"AURORA"

A diamond design of pyramidal projections with straight depressed valleys which make it easy to clean. An unusually efficient obscure pattern with high transmission of light. Light which is diffused in square shape design is deflected to working plane and to ceiling where it is reflected down and shadows from horizontal illumination are eliminated.



LIGHT DISTRIBUTION CHART

"BANDLITE"

New types of glass suitable for special decorative design. These patterns give an architect or designer an opportunity to produce interesting effects from natural and artificial illumination.

MADE WITH FIRE GLAZED, POLISHED OR SOFTONE SURFACE

⅛ and 7/32 inches thick

PATTERNS ACTUAL SIZE

"BEVELITE"

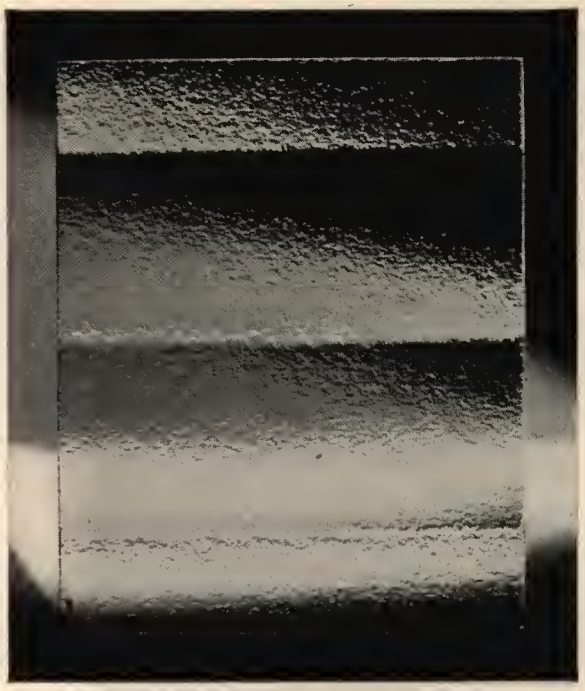
ADDITIONAL INFORMATION ON PAGE 3

"BROADLITE"

Conspicuous for its brilliance and obscurity, with a lustrous pleasing texture which produces an atmosphere of beautiful rich quality, so important in modernization work.

In new work it carries out the streamlined effect which is so popular with everyone.

PATTERN CONTOUR ACTUAL SIZE
Thicknesses—⅛ in. and 7/32 in.



"DEWLITE"

Designed for maximum light diffusion. Small slightly elevated lenses grouped in an attractive manner and spaced to avoid dirt-collecting pockets. It is very easily cleaned and gives a uniform distribution of daylight or artificial illumination in a circular shaped pattern.

PATTERN ACTUAL SIZE
Plain—⅛ in.-7/32 in. Thick
Polished—7/32 in. Thick
APPROX. LIGHT TRANSMISSION FOR ⅛ IN. THICKNESS = 0.885

LIGHT DISTRIBUTION CHART

ADDITIONAL INFORMATION ON PAGE 3

PATTERN ACTUAL SIZE
Plain—⅛ in.-7/32 in. Thick
Wire Glass—¼ in. Thick
APPROX. LIGHT TRANSMISSION FOR ⅛ IN. THICKNESS = 0.875

"FACTROLITE"

A cross-rib which forms tiny concave lenses to break up the direct rays of the sun and diffuse the light in all directions; cuts down the sun's intensity near the windows increasing the illumination 25 feet from the window about 72% over that from clear window glass. Especially designed for use in vertical (side wall window) openings of industrial buildings.

LIGHT DISTRIBUTION CHART

PATTERN ACTUAL SIZE
(Plain—⅛ in. Thick Only)
APPROX. LIGHT TRANSMISSION FOR ⅛ IN. THICKNESS = 0.885

"FLORENTINE"

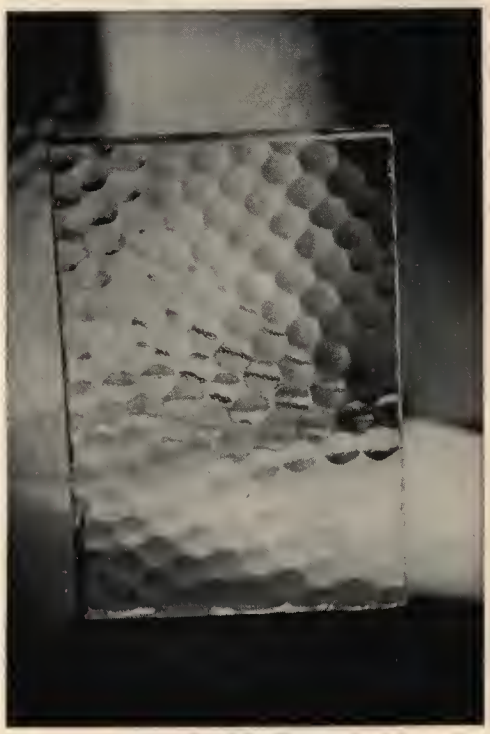
One of America's first and most extensively used figured rolled sheet glass patterns. Purely an ornamental design for partitions or screens where obscurity is desired.

LIGHT DISTRIBUTION CHART

ADDITIONAL INFORMATION ON PAGE 3

"HAMMERED"

The design is formed by a series of raised adjacent lenses which provide the appearance of a hammered surface. Especially designed for industrial buildings, which are exposed to excessive dirt accumulation as it is classed among the easier glasses to clean. It is obscure and provides good light transmission and distributes light in a circular pattern.

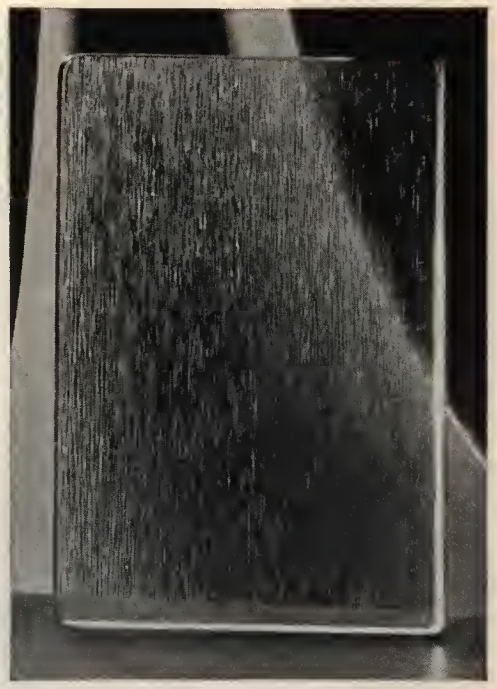


PATTERN ACTUAL SIZE
Plain and Wire Glass, see Page 3 for Thicknesses
APPROX. LIGHT TRANSMISSION FOR 1/8 IN. THICKNESS = 0.875

LIGHT DISTRIBUTION CHART

"HYLITE"

A comparatively clear, irregular pattern designed to transmit a maximum of light. Particularly suited to north elevations to utilize the thoroughly diffused north light without impairing its quality or quantity.



PATTERN ACTUAL SIZE
Plain—1/8 in.-7/32 in. Thick
Wire Glass—1/4 in. Thick
APPROX. LIGHT TRANSMISSION FOR 1/8 IN. THICKNESS = 0.905

LIGHT DISTRIBUTION CHART

PATTERN ACTUAL SIZE
Plain—⅛ in.-7/32 in. Thick
APPROX. LIGHT TRANSMISSION FOR ⅛ IN. THICKNESS = 0.885

"LUXLITE"

A very simple indefinite design. Almost smooth, yet rough enough to obscure vision. An excellent foundation for decorative etchings of glass panels used in artistic lighting screens, fluorescent luminaires, shower doors, and office partitions.

LIGHT DISTRIBUTION CHART

PATTERN ACTUAL SIZE
Plain—¼ in. Thick
Wire Glass—¼ in. Thick
APPROX. LIGHT TRANSMISSION FOR ¼ IN. THICKNESS = 0.875

"MAGNALITE A"

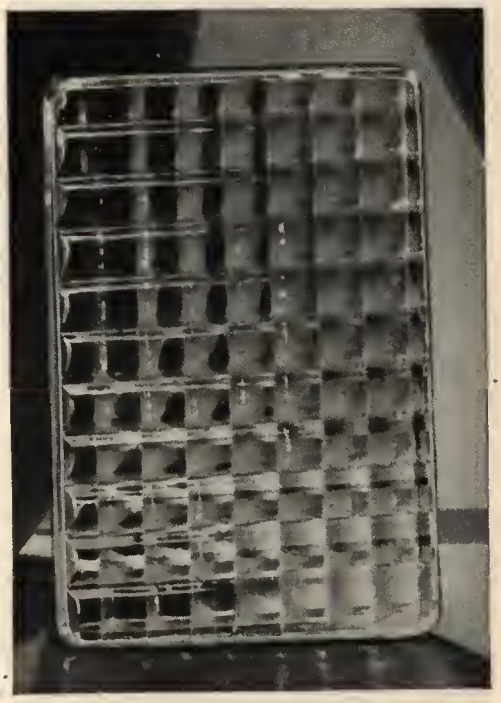
This is an unusual design of figured rolled sheet glass in that it has especially designed cylindrical lenses on each surface, running at right angles to each other—to produce a particular type of light distribution which is most desirable for ceiling light or panel illumination.

LIGHT DISTRIBUTION CHART

ADDITIONAL INFORMATION ON PAGE 3

"MAGNALITE B"

The design of this glass is very similar to Magnalite "A," except in size of cylindrical lenses which are smaller and which affords a more uniform distribution of light. So obscure that objects behind the glass are well concealed.



PATTERN ACTUAL SIZE
Plain—¼ in. Thick
Wire Glass—¼ in. Thick
APPROX. LIGHT TRANSMISSION FOR ¼ IN. THICKNESS = 0.805

LIGHT DISTRIBUTION CHART

"PENTECOR"

The design consists of approximately eight parallel ribs per inch, forming a light transmission pattern rectangular in shape. A popular glass shield for fluorescent lighting with or without glare-reducing finish.

PATTERN ACTUAL SIZE
Plain ⅛ in.-7/32 in. Thick
Wire Glass—¼ in. Thick
APPROX. LIGHT TRANSMISSION FOR ⅛ IN. THICKNESS = 0.885

LIGHT DISTRIBUTION CHART

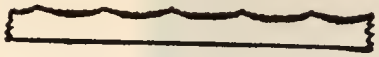
ADDITIONAL INFORMATION ON PAGE 3

PATTERN ACTUAL SIZE
Plain 1/8 in.-7/32 in. Thick

"PLURALITE"

A shallow fluted glass especially adapted for use in fluorescent luminaires or in architectural designs where straight line effects are desired.

The fluted surface has a delicately stippled texture which gives the glass an excellent surface, making it suitable for use in the very finest buildings where only the best of quality would be satisfactory.



PATTERN CONTOUR ACTUAL SIZE

PATTERN ACTUAL SIZE
Plain and Wire Glass—See Page 3, Thicknesses
APPROX. LIGHT TRANSMISSION FOR 1/8 IN. THICKNESS = 0.885

"RIBBED"

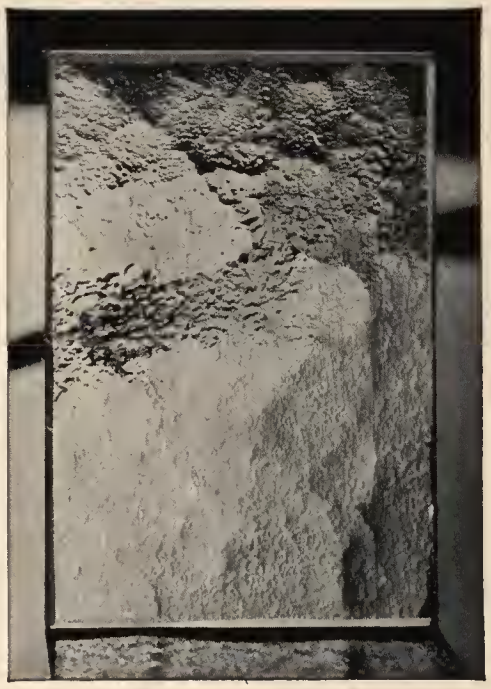
The design consists of approximately twenty-two fine parallel ribs per inch, which spread light perpendicularly to the ribs, forming a light transmission pattern rectangular in shape. When installed the ribs should be vertical.

LIGHT DISTRIBUTION CHART

ADDITIONAL INFORMATION ON PAGE 3

"SMOOTH ROUGH"

Smooth Rough Glass was designed primarily for use in industrial buildings where normal light transmission was desirable and a glass which would be easily cleaned was preferable. But the surface of this glass is so attractive it has become very popular with architects who specialize in colonial design for all kinds of buildings.



PATTERN ACTUAL SIZE
Plain 1/8 in.-3/32 in. Thick
Wire Glass—1/4 in. Thick

Note: This glass is available west of the Rocky Mountains only.

"SYENITE"

The irregular pebbled design is very attractive, deeply impressed in the surface, highly obscure and unusually brilliant in appearance. Has high transmission and diffuses light in a circular shaped pattern.

LIGHT DISTRIBUTION CHART

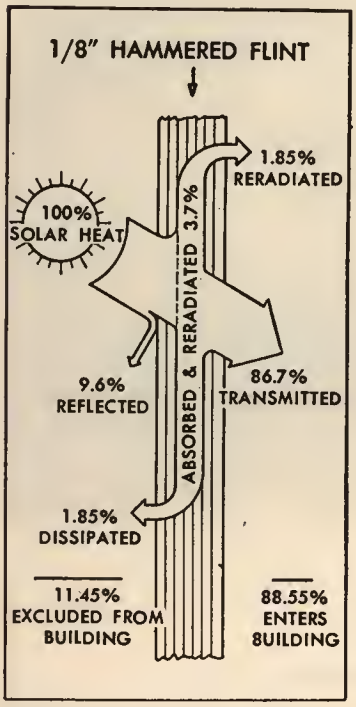
PATTERN ACTUAL SIZE
Plain, Polished and Wire Glass—See Page 3, Thicknesses
APPROX. LIGHT TRANSMISSION FOR 1/8 IN. THICKNESS = 0.875

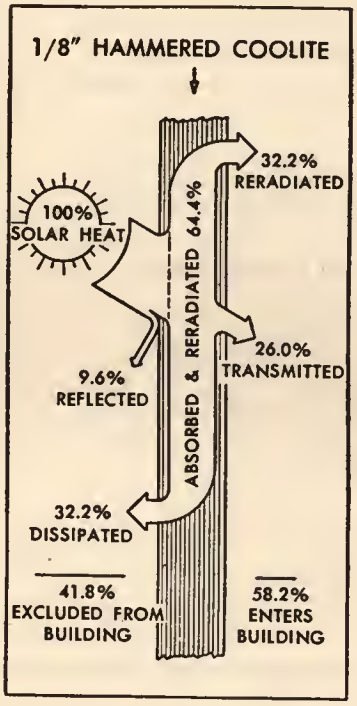
ADDITIONAL INFORMATION ON PAGE 3

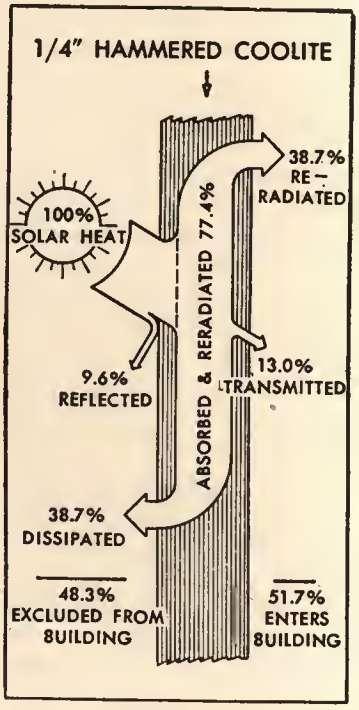
"COOLITE"

HEAT ABSORBING GLASS

Coolite Reduces Solar Heat Transmission and Improves Working Conditions







ROOM TEMPERATURE

Tests show that by installing Coolite instead of ordinary glass, room temperature can be reduced about 11°, which means a considerable difference in the comfort of any building in which Coolite is installed. Furthermore, this much reduction in room temperature would naturally reduce the cooling load on any air conditioning equipment, resulting in a saving in maintenance cost.

The following figures show that Coolite glass absorbed a larger portion of the solar radiation than clear or the Ribbed glass. The results of this are indicated by the temperature of Coolite glass, which averaged 11.5° F. higher than the other glasses; the temperature of the floor averaged 20.4° F. lower under Coolite than under the other glasses; and the temperature of the air averaged 11° F. lower under the Coolite than under the other glasses.

In this test, which was to simulate a roof lighting installation, ¼ in. thick glass was used to conform with standard practice.

AVERAGE TEMPERATURE, DEGREES FAHRENHEIT AT LOCATIONS INDICATED

Location	Glass	Air at Center of enclosure	Floor surface
¼" Clear Glass.....	126°	134.4°	147.6°
¼" Ribbed Glass.....	124°	135°	147.6°
¼" Coolite Glass.....	136.2°	123.7°	127.3°

Outside air temperature in shade averaged 97.6° F.

COOLITE TRANSMISSION FACTORS

AVERAGES OF ALL ELECTRICAL TESTING LABORATORIES MEASUREMENTS ON COOLITE FOR TWO YEARS

PATTERN	⅛" Thickness		¼" Thickness	
	Light	Heat	Light	Heat
Polished (Test Sample)	62%	28%	49%	14.6%
Hammered	59%	26%	47%	13%
Hammered, G. R.*	43%	21%	31%	7%

*G.R. DENOTES GLARE REDUCING FINISH.

NOTE: The figures for ⅛" thickness are for the average thickness of our "⅛"" glass of .160 inches.

ADDITIONAL INFORMATION ON PAGE 3

COOLITE HEAT ABSORBING GLASS

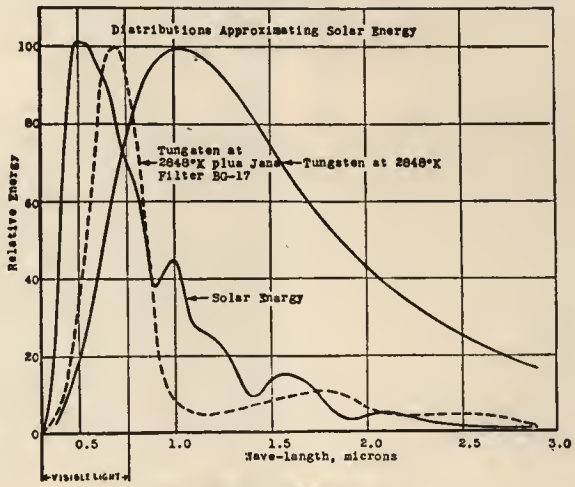
Fundamentally, heat absorbing glass is made to reduce the transmission of *solar radiation,* which is different from that of an artificial source, such as a so-called heat lamp or projection lamp which emits a very high percentage of infra-red radiation, not possible to obtain from sunlight. Therefore in all tests or demonstrations of heat absorbing glasses, the procedure specified by the National Bureau of Standards should be employed in order to make a true comparison. For example, a glass may be made to transmit very little infra-red radiation of the wave lengths emitted by an ordinary electric lamp but the amount of solar heat transmitted by this glass could be relatively high. Therefore you cannot place different types of glass in front of an electric light and determine which is best for reducing solar heat transmission.

In order to determine the efficiency of any glass, the testing or demonstrating apparatus in which an electric light is used as a heat source, must be equipped with the proper filter to make the artificial heat source comparable to sunlight.

COLOR: Coolite is a pleasing cool blue with a greenish cast. Due to inherent manufacturing conditions, we cannot guarantee exact uniformity of color, but it is held within reasonable manufacturing tolerances.

TESTS: It has always been our policy to employ a reputable laboratory to make and report tests which we believe will be of interest to our friends who use Mississippi Products.

Any progressive organization must maintain a private research laboratory of some sort in order to control the quality of their products. But for published official engineering information, we believe tests should be made by a reputable independent testing laboratory in accordance with accepted test specifications which enable all laboratories to test materials under identical conditions.



Graph Showing Solar Radiation Curve

As Coolite glass is designed to reduce solar heat transmission, a comparison of curves for sunlight and artificial light, also the corrected curve for a 100-watt 115-volt projection lamp through a BG17 filter which makes the artificial heat source more comparable with sunlight, are given above.

GLARE REDUCING COOLITE GLASS

Where direct sunlight or severe glare from reflecting surfaces is objectionable, and so impairs the vision of employees that inaccuracy or curtailed production results, it is desirable to reduce glare to maintain efficiency and comfort.

The intensity of light from the sun varies with the seasons and hours of the day. Therefore the location of a building and its exposure to glaring sunlight would determine which type and thickness of Glare Reducing Coolite would best suit the purpose. If the glare is moderate, 1/8-in. Glare Reducing Hammered Coolite would perhaps accomplish the desired results, but if glare is extreme it would be advisable to use 1/4-in. Glare Reducing Ribbed Coolite.

The purpose of Coolite glass is to reduce solar heat transmission and if you refer to the preceding page you will see that the surface treatment of Glare Reducing Coolite reduces the direct solar heat transmission considerably.

You can judge from the table of light and heat transmission through Coolite glass of various thicknesses and surface treatment that the Glare Reducing Coolite accomplishes two important results, heat and glare reduction.

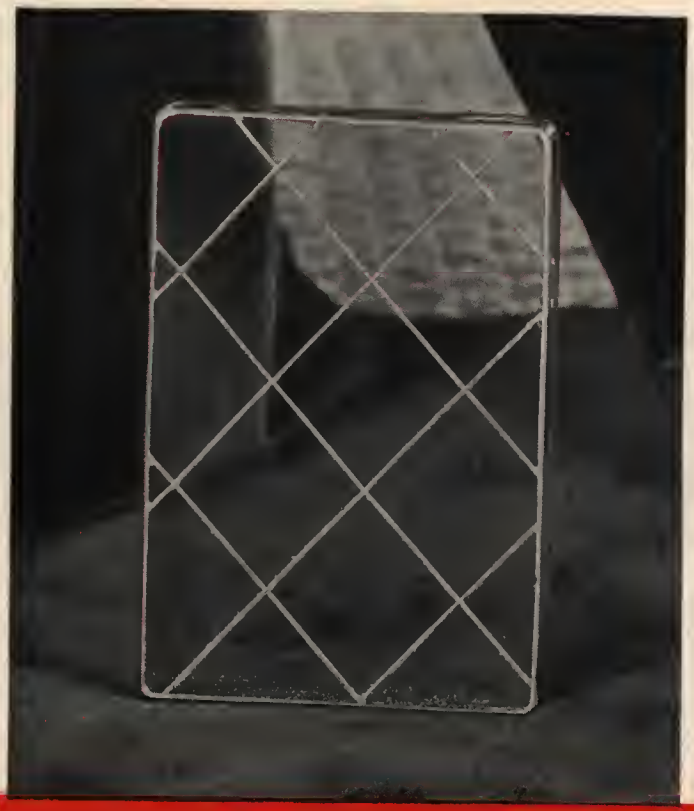
The acid treated surfaces, producing a mat finish, reduce the transmission of direct sunlight by thorough diffusion so that a beam of light, whether from the sun or a high reflecting surface, is so completely broken up that the light is spread over a very wide area and the effect of a spotlight in one's eyes is eliminated.

LOOSE-WILES BISCUIT CO., OAKLAND, CALIF.

ADDITIONAL INFORMATION ON PAGE 3

• SPECIFY • MISSISSIPPI • GLASS •

"MISCO"



THE LAST WORD IN WIRE GLASS

MISSISSIPPI PRODUCTS

MISCO POLISHED WIRE GLASS
MISCO FIGURED WIRE GLASS
STANDARD POLISHED WIRE GLASS
STANDARD FIGURED WIRE GLASS
ROLLED FIGURED GLASS
POLISHED FIGURED GLASS

HEAT ABSORBING GLASS
GLARE REDUCING GLASS
COLORED CATHEDRAL GLASS
CORRUGATED WIRE GLASS
CORRUGATED GLASS (Without Wire)
ULTRA VIOLET TRANSMITTING (Vitaglass)

Printed in U. S. A.

MISSISSIPPI GLASS COMPANY
200 FIFTH AVE. NEW YORK
MAIN & ANGELICA STS. ST. LOUIS, MO.
201 NO. WELLS ST. CHICAGO, ILL.
FULLERTON CALIFORNIA

Architect: JAMES W. MINICK, Harrisburg, Pa.

PITTSBURGH

Glass Products

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PITTSBURGH PLATE GLASS COMPANY

PITTSBURGH

MAKES QUALITY GLASS PRODUCTS

164 pages of data in Sweet's Files give you complete information on Pittsburgh Glass Products. See listings below.

IN THIS SECTION OF SWEET'S

PLATE GLASS

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POLISHED PLATE GLASS	3
VISTA PLATE GLASS	3
BLUE AND FLESH TINTED PLATE GLASS	5
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IN OTHER SECTIONS OF SWEET'S

CARRARA

SEE: Pittsburgh Plate Glass Catalog on *Carrara Structural Glass* in Section 13b, catalog 12.

HERCULITE DOORS AND DOOR-FRAME ASSEMBLY

SEE: Pittsburgh Plate Glass Catalogs on *Herculite Doors* in Section 15b, catalog 2.

Herculite Door Frame Assembly in Section 15b, catalog 2.

PITTCO METAL

SEE: Pittsburgh Plate Glass Catalog on *Pittco Store Front Metal* in Section 20, catalog 8.

TWINDOW

SEE: Pittsburgh Plate Glass Catalog on Insulating Windows in Section 16b, catalog 7.

PC GLASS BLOCKS

SEE: Pittsburgh Corning Catalog on PC Glass Blocks in Section 7c, catalog 3.

PC FOAMGLAS

SEE: Pittsburgh Corning Catalog on PC Foamglas in Section 10b, catalog 5.

THE PITTSBURGH PLATE GLASS COMPANY is the largest manufacturer of flat glass products in the world. Included among Pittsburgh Glass Products are all the types commonly used for glazing and decoration, as well as many special glasses for special architectural purposes. This manufacturer, in more than half a century of glass making, has developed the most modern and efficient production methods and machinery, has integrated its facilities and operations so successfully that it has established an unusually high standard of quality in all Pittsburgh Glass Products. This consistently high quality explains the enviable reputation won by Pittsburgh Plate Glass Company in the building trades.

Pittsburgh Service Is Available for Consultation, Planning, and Installation

We maintain a special staff of architectural representatives, whose whole duty consists in rendering the architect every assistance possible in connection with the use of glass and paint. And our staff of store front experts is maintained to serve the architect in matters concerning the styling and installation of modern store fronts. We extend a cordial invitation to all architects to take advantage of these services at any time.

The PITTSBURGH DATA SHEET HANDBOOK

should be on every architect's desk. It contains important technical descriptions and installation data on all glass, metal and paint products distributed by Pittsburgh Plate Glass Company. As new information becomes available, loose leaf sheets are sent to you for insertion to keep the Handbook up-to-date.

The DESIGN OF THE MONTH

is a popular "suggestion file" of new store front designs. Every month a full-color rendition and complete description of a specially designed store front is sent to a selected list of architects. The Design of the Month shows how Pittsburgh Plate Glass Company products can be used to create modern, sales-winning store fronts, and keeps you abreast of new glass-application techniques.

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS

PITTSBURGH PLATE GLASS COMPANY

General Offices

GRANT BUILDING • PITTSBURGH 19, PA.

POLISHED PLATE GLASS

The Aristocrat of the Transparent Flat Glass Family

Polished Plate Glass is ground and polished, mechanically, to a commercially true, flat surface and a perfect brilliance and reflectivity of finish. It is the finest material available for exterior and interior glazing and should be used wherever clarity of vision, beauty and dignity are desired. Objects viewed through Polished Plate Glass, or reflected from it, are undistorted and perfectly natural in shape, form and outline. It imparts to buildings in which it is used a brilliance and luster, a distinction and charm, that enhances their appearance and adds immeasurably to their rental and sales value.

Vista Plate Glass for Use with Standard Sash

The ⅛ in. Polished Plate Glass manufactured by PITTSBURGH PLATE GLASS COMPANY is called Vista Plate Glass. It was developed to meet a specific need in the building industry . . . the need for a thin Plate Glass of top quality which could be used for general glazing, but which could be glazed in standard sash with standard sash weights, thus eliminating cost of special sash.

Increases Resale Value of Houses

Vista Plate Glass has the same beauty, luster, and clarity as standard ¼ in. Polished Plate Glass, and sufficient strength and durability to assure permanence. Any residence glazed with it has a greater resale value, which more than offsets the extra cost of Vista Plate over ordinary window glass.

THE DYNAMIC MODERNISM of large areas of Polished Plate Glass is fully illustrated in this striking and highly impressive application. Plate Glass lends beauty and dignity to any building in which it is used—commercial, industrial or residential. Architect: H. ROY KELLEY, Los Angeles, Calif. *(Above)*

PICTURE WINDOWS, large panels of Pittsburgh Polished Plate Glass, take advantage of a homesite's attractive environment. They not only afford unobstructed vision, but add tremendously to the appearance of the room. Architects: MITCHELL & RITCHEY, Pittsburgh, Pa. *(Below)*

MADE PG FROM PITTSBURGH PLATE GLASS

Physical Characteristics

QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS PER SQ. FT.	STRENGTH	COLORS	FINISH
Silvering	⅛" (Vista Plate)	⅛" 72x123	⅛" 1.75 lbs.	Tension 6500 lbs. ["]	Clear	Ground and Polished
Mirror		3/16" 123x216	3/16" 2.67 lbs.	Compression 36,000 lbs. ["]		
Glazing	3/16"	¼" 160x220	¼" 3.29 lbs.	Modulus Elasticity		
Glazing	¼"	150x260		10,000,000 lbs. ["]		

United States Government Specifications for Plate Glass for Glazing Purposes; DD-G-451

CLASSIFICATION

Polished Plate Glass: silvering quality, glazing quality.

DEFINITIONS OF THE GENERAL CLASSES OF POLISHED PLATE GLASS

Plate Glass—Transparent, flat, relatively thin glass having plane polished surfaces and showing no distortion of vision when viewing objects through it at any angle.

Plate Glass is made at present by casting and rolling large sheets periodically or by rolling a continuous sheet. The sheets are then ground and polisbed.

DETAILED SPECIFICATIONS OF POLISHED PLATE GLASS

General Principlea Involved in Grading Glass—All flat glass contains some imperiections and the principle employed in grading is to exclude all defects that would be objectionable in a given grade. This is difficult to do since there are no sharp lines of demarcation between grades, and experienced inspectors will differ in judgment as the quality of the glass approaches the limits of the grades. Small lights must be quite free from imperfections, as compared with larger ones, and the center of any sheet should be clear, whereas the edges may contain more pronounced defects.

Method of Examination—The method of examination is described in these specifications in order to make the results more uniform, and defines the condition under whicb glass should be examined because the distance from the glass, the angle between the glass and the line of sight, and the intensity of light all affect the visibility of imperfections.

These specifications sbould be interpreted by examining the glass in the following manner, with reference to the definitions of defects listed in the glossary:

The glass should be examined when placed in a position similar to that of a glazed light with the observer's eye on a level witb the center of the sheet, and looking through the glass from a distance of about 36 in. into the light from a clear sky without any sun or any close background.

The visibility of waves, lines or cords depends chiefly upon the angle of observation, and the intensity of these defects can be classified on this basis. The values given for angles are the angles the line of sight makes witb the sheet of glass when in a vertical position. Slight movement of the head horizontally through an angle of two or three degrees will make waves or lines more perceptible.

Acceptance or Rejection—Acceptance or rejection of a shipment or delivery shall be based on an examination of tbe following quantities:

For orders of 100 lights or less, all shall be examined; for orders of 101 to 500 lights, at least 50% shall be examined; for orders of 501 or more lights at least 25% shall be examined. Boxes shall be selected from the shipment at random.

If not more than 10% of the lights examined are below quality, the shipment shall be accepted provided the lights below the specified grade are not distinctly below the upper limits of the next lower grade.

If, however, an entire shipment of 500 lights or more is examined, not more than 5% may be below quality.

SPECIFICATIONS FOR POLISHED PLATE GLASS

Sizes and Thicknesaes—The standard of thicknesses of plate glass shall be 1/8, 3/16, 1/4, 5/16, 1/2, 5/8, 3/4, 7/8, 1 and 1 1/4 in. Sheets are available 1/4 in. tbick in sizes having a maximum area of 250 sq. ft. Glass of 1/4 in. thickness may be furnished having almost any desired dimension under the following maximums: 120x280 in., 144x260 in., 160x240 in.

Tolerance in Thicknesses—The maximum and minimum thicknesses allowed shall not be more than given thickness plus or minus one-half the difference between the standard thicknesses. The general variation in thickness should not be more than 1/32 in. for individual lights under 10 square feet in thicknesses up to 1/4 in. The variation in lights over 1/4 in. in thickness sbould not exceed one-half tbe total tolerance for that thickness.

Polished plate glass 1/4, 1/8 and 3/16 in. thick is carried in stock in the larger cities.

Tolerance in Dimensions—Variation from dimensions ordered shall not be more than 1/32 in. per 1/8 in. thickness.

Grades—Plate glass shall be furnished for glazing purposes in one of two grades as specified. These grades will be known as silvering and glazing qualities.

Silvering quality is invariably uscd where the highest standard of glazing is required and imperfections are discoverable only on close inspection. This quality is rarely sold for glazing purposes in sizes over 20 sq. ft. Glazing quality represents the usual selection of plate glass supplied when quality is not otherwise definitely specified.

As allowable tolerances in quality must vary considerably with size of sheet required, different specifications will apply in each of the following four divisions according to size:

Division I. Sheets up to and including 10 sq. ft. in area.

Division II. Sheets having an area greater than 10 sq. ft. but not greater than 25 sq. ft.

Division III. Sheets having an area greater than 25 sq. ft. but not greater than 75 sq. ft.

Division IV. Sheets having an area greater than 75 sq. ft.

Division I. (Sizes Up to and Including 10 Sq. Ft.)—*Silvering Quality*—This glass shall not contain any major defects. The central area of this glass may contain only well scattered seeds. Ream, skim, short finisb, and scratches which cannot be removed by buffing are not permissible. The edges may contain coarse seeds, but none shall be larger tban 1/32 in. in diameter.

Glazing Quality—The central area of this quality may contain numerous scattered seed, including an occasional coarse seed, but no heavy seed. Small bubbles may occur on the edge. Stones, large bubbles, skim, ream, or long or heavy scratches are not permissible. Faint strings in the corners or upper edge of the light are permissible. The polish shall not show areas of short finisb.

Division II. (Sizes from 10 Sq. Ft. to 25 Sq. Ft., Inclusive)—*Silvering Quality*—The central area of this quality may contain more numerous fine seed than the small sizes and an occasional coarse seed. The edges may contain occasional small bubbles and fine strings. No heavy defects or scratches which cannot be removed by buffing are permissible. The polish must be good and free from visible short finish.

Glazing Quality—The central area may contain small bubbles and fine strings or ream which do not give visible distortion when looking straight through the glass, but no long or heavy scratches. The edges may contain bubbles over 1/32 in., visible scratches shorter than 10 in., small areas of ream, strings, and small stones not larger than 1/32 in., but these defects should not be grouped nor interfere with the vision. The polish over the central area should be good, but patches of light, short finish may be present about the edges.

General—None of the above grades or sizes may contain any heavy or long lines, streaks of ream, any bubbles larger than 1/8 in., visibly poor polish, open bubbles, areas of skim, or stones over 1/32 in. in diameter.

Division III. (Sizes from 25 Sq. Ft. to 75 Sq. Ft.)—*Glazing Quality*—Lights of this size may contain numerous visible and larger imperfections not allowed in the smaller lights. But these must not be grouped or so prominent that they noticeably interfere with the vision. The central area of the plate sball be free from tbese larger defects.

The sheets may contain seed of any size, but not heavy seed except in relatively small patches on the outer border of the sheet, occasional bubbles up to 1/8 in. in the center and up to 1/16 in. on tbe borders, strings, ream and skim in very limited areas if not causing a deformation of objects viewed tbrough the plate, occasional scratches and small stones under 1/16 in. Heavy ream, heavy cord, bubbles larger than 3/16 in. in diameter, stones larger than 1/16 in. in diameter, large fire cracks, areas of unpolished glass, easily visible poor polish, large open bubbles, or sand holes, are not permitted. The large defects should be confined to the upper edge and upper corners of the sheet, the lower and central areas to be relatively free from major defects.

Division IV. (Sizes Greater than 75 Sq. Ft.)—Sheets larger than 75 sq. ft. may contain defects of almost any kind except that they must not show large areas of heavy seed or bubbles nor have any defects which will cause spontaneous breakage, such as skim or large stones (1/8 in. in diameter) or show any areas of unpolished glass.

GLOSSARY OF TERMS USED IN THESE SPECIFICATIONS

Tbe following terms shall be used in specifications:

Plate Glass—Seeds, short finish, skim, strings, scratches, bubbles, open bubbles, ream, stones, fire cracks, sand holes.

Bubbles—Gas inclusions in any rolled glass. These inclusions are practically always spherical and brilliant in appearance. The term applies to all such inclusions larger than 1/32 in. in diameter. The term small bubbles (commonly known as boil) refers to sizes between 1/32 in. and 3/32 in.

Seeds—Minute bubbles less than 1/32 in. in diameter. Fine seeds are visible only on closc inspection, usually appearing as small specks and are an inherent defect in tbc best quality of plate glass. Seeds about 1/64 in. to 1/32 in. in diameter are usually considered as coarse seeds.

Open Bubbles—Bubbles which have been broken into by grinding, leaving a hemispberical hole in the glass surface.

Skim—Streaks of dense seed with accompanying small bubbles.

Strings—Wavy, transparent lines appearing as though a thread of glass had been incorporated into tbe sheet.

Cords—Heavy strings incorporated in the sheet, occurring without any regularity of direction, and appearing to be of considerable thickness rather than on the surface.

Ream—An area of unhomogeneous glass incorporated in the sheet producing a wavy appearance.

Scratches—Any marking or tearing of the surface appearing as though it had been done by either a sharp or rough instrument. Scratches occur on sbeet glass in all degrees from various accidental causes.

Short Finish—Insufficient polish or lack of brilliancy; improperly finished surface which has the appearance of being slightly pitted and wavy when the surface is viewed in reflected light. These indentations, which are slight, have a polished rather than a ground surface, but the general effect is a slight dulling of the surface. Poor polisb is usually caused by improper grinding.

Stones—Any opaque or partially melted particle of rock, clay or batch ingredient imbedded in the glass.

Fire Cracks—Small cracks penetrating the surface of the sheet. Usually in the shape of short-hooked crescents. Caused by sudden heating or chilling of the surface.

Sand Holes—Rough spots on the polished surface produced during coarse grinding which fine grinding did not later remove; due, to some extent, to coarse grains of grinding sand becoming mixed with finer grades.

Central Area of Sheet—This term is used with slightly different interpretation with reference to plate or window glass. In plate glass tbe central area is considered to form an oval or circle centered on tbe sbeet whose axes or diameters do not exceed 80% of the over-all dimension. This allows a fairly large area at tbe corners, wbicb may have imperfections not allowed in the central area.

PPG PITTSBURGH PLATE GLASS COMPANY

MIRRORS of Plate Glass are generously used throughout this cocktail lounge. They make the room seem more spacious and reflect gaiety and color.

LIGHT is transmitted, but the view is obstructed. Tapestry Glass is ideal for partitions in offices where light is needed and privacy is desired.

BLUE and FLESH TINTED PLATE GLASS

For Striking Decorative Effects
Flesh Tinted Plate Glass

Flesh Tinted Plate Glass is a medium becoming increasingly popular with architects to assist in obtaining decorative effects. The color is slight in surface section, considerably stronger in transverse section. Used in mirrors, Flesh Tinted Plate Glass produces reflections which minimize blues and violets and emphasize flesh colors, thus offering flattering images.

Blue Plate Glass

Blue Plate Glass, another popular product of the PITTSBURGH PLATE GLASS COMPANY, is a glass of rich blue color, ideal for decorative use in modern building. Like Flesh Tinted Plate Glass, this Blue Plate Glass is extraordinarily attractive when fabricated into mirrors.

Specific Uses

Flesh Tinted Mirrors or Blue Mirrors can be used with great success in home decoration to add color, warmth and sparkle to all types of rooms. They also are exceedingly ornamental in bars, stores, and public and commercial buildings of all sorts. Both types of Plate Glass also serve very well as unusual table tops, desk tops, book shelves, sill covers, etc.

Physical Characteristics

QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS PER SQ. FT.
Selected only	$\frac{1}{8}$", $\frac{3}{16}$"	123x216	2.67 lbs.

STRENGTH	COLORS	FINISH
Tension 6500 lbs. ["] Comp. 36,000 lbs. ["] Modulus Elasticity 10,000,000 lbs. ["]	Blue and Flesh	Ground and Polished

TAPESTRY GLASS

A Translucent, Semi-Opaque Glass

Tapestry Glass is a product ideally suited for use where the architect desires to glaze so as to admit the light but obstruct the view. Objects placed quite close to the surface of the glass can be seen through it almost as plainly as through transparent glass. But objects decrease in visibility and eventually become entirely shadowed and obscured when they are removed from close proximity to the glass.

Finish

It is furnished with both surfaces in Tapestry finish or one in Tapestry finish and the other polished, and it can be decorated by sand-blasting, chipping or mitering.

Physical Characteristics

QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS PER SQ. FT.
Glazing	$\frac{7}{32}$"	60x144	2.89 lbs.

STRENGTH	COLORS	FINISH
Equal to or greater than that of regular plate glass	Translucent Semi-Opaque	Plain $\frac{7}{32}$" Polished $\frac{7}{32}$"

X-RAY LEAD GLASS

The PITTSBURGH PLATE GLASS COMPANY now offers a domestic source of supply for X-ray Lead Glass which meets in every respect the requirements of various governmental departments. X-ray Lead Glass was developed primarily to protect operators and their assistants against continuous exposure to X-rays. While affording protection, the glass also allows clear vision of the X-ray apparatus and patient. X-ray Lead Glass may be used both for interior and exterior glazing.

Protection

Protection against very high X-ray intensities may be secured by the lamination of several lights. The single thickness gives protection against X-ray tubes operating under an impressed voltage of 100 k.w.

Lead Coefficient

The actual glass thickness multiplied by the "lead coefficient" gives the equivalent sheet lead thickness. The "lead coefficient" of Pittsburgh X-ray Lead Glass is at least .30.

Plate Glass

← **IN MANY** types of buildings, where protection from the heat of the sun is needed, Solex Plate Glasa can he used to advantage. Rooms exposed to direct aunlight are 10 to 20 degrees cooler when they are glazed with this heat-ahsorhing glass. (*Left*)

MULTIPLATE Bullet-resisting Plate Glass is specially designed for use in hanks, gate houses, industrial plants, and other huildings where protection against firearms is required. (*Right, below*)

SOLEX HEAT-ABSORBING PLATE GLASS

Solex is made by a special process which gives it the valuable quality of absorbing heat without interfering with the transmission of visible light. Thus while it transmits 70% to 75% of the sun's total light, it admits less than 45% of the sun's total heat as compared with clear Plate Glass which admits nearly 90% of the sun's total light and heat.

Greatly Reduces Sunheat in Rooms

When windows, skylights, etc., of a building are glazed with Solex, the solar heat entering that building through such openings is greatly reduced. Persons sitting adjacent to Solex windows are far more comfortable, and the glare resulting from high light intensity is considerably lessened.

Specific Uses

Solex is well fitted for a wide variety of uses. Solex is widely used for the glazing of airport control towers. It may be employed to advantage in southern and western exposures of all types of buildings, whether schools, residences, factories, hotels or office buildings, and will result when so used in greater bodily and visual comfort for building occupants.

In the fabrication of mirrors, Solex has a high decorative value, because of its attractive aquamarine color.

Physical Characteristics

QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS PER SQ. FT.
Glazing only	⅛"	⅛" 123x216	⅛"—1.75 lbs.
	¼"	¼" 123x216	¼"—3.29 lbs.
	⅜"	⅜" 72x130	⅜"—4.93 lbs.

STRENGTH	COLORS	FINISH
Tension 6500 lbs. ["] Comp. 36,000 lbs. ["] Modulus Elasticity 10,000,000 lbs. ["]	Bluish Green	Ground and Polished

MULTIPLATE BULLET-RESISTING PLATE GLASS

A laminted Safety Plate Glass developed by the PITTSBURGH PLATE GLASS COMPANY for use where special protection, usually protection against firearms, is required.

Protective Qualities of Various Thicknesses

1⅛-in. Multiplate, called Super Multiplate and the thickness most commonly used, is satisfactory for use against weapons developing not more than 490 ft. lbs. energy. It will withstand from four to ten shots fired at point blank range from the common sidearms. 1½-in. Multiplate, called Hi-Resist Multiplate, is satisfactory for use against weapons developing not more than 804 ft. lbs. energy. It is especially designed to offer protection against the revolver popularly called the Smith and Wesson Magnum Revolver, shooting a special .357 Magnum cartridge. 2-in. Multiplate, called Hi-Power Multiplate, is satisfactory for use against weapons developing not more than 2400 ft. lbs. energy. It is the only glass officially listed for protection against high-powered rifle bullets. It will withstand successfully several shots from a standard 30-30 sheriff's weapon, and will even turn back a single steel jacketed service bullet shot from the terrifically powerful 30-06 Army Springfield. It also is recommended as adequate protection against a burst of fire from the Thompson Sub-Machine Gun.

Practically all banks in the United States using bullet-resisting glass standardize on Multiplate. It is regularly checked, tested, and listed by Underwriters' Laboratories.

Physical Characteristics

QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS PER SQ. FT.
Commercial	½" Minimum	45x84	½" 6.91 lbs.
	¾" Minimum		¾" 10.30 lbs.
	⅞" Minimum		⅞" 11.90 lbs.
	1" Minimum		1" 13.57 lbs.
	Super 1⅛" Minimum		1⅛" 15.23 lbs.
	Hi-Resist 1½" Minimum		1½" 21.70 lbs.
	Hi-Power 2" Minimum		2" 27.11 lbs.

STRENGTH	COLORS	FINISH
For recommendations of protection against various firearms, see above	Clear	Ground and Polished Plate Glass laminated

PITTSBURGH PLATE GLASS COMPANY

ONE OF THE MANY uses to which Heavy Plate Glass is well-suited. Design possibilities with this glass are practically unlimited. *(Below)*

PLATE GLASS accordion-type partition gives this store interior great charm and up-to-the-minute appeal. Heavy Plate Glass is one of the most striking and versatile materials for use in modern design and decoration. Designer: T. H. ROBSJOHN-GIBBINGS—Architect: RENE BRUGNONI, New York, N. Y.

HEAVY PLATE GLASS, with a glass door, encloses this shower and does away with the need for a shower curtain. This glass adds sparkle and beauty to a bathroom.

Heavy Plate Glass

A Practical Decorative Medium for a Hundred Uses

Heavy Plate Glass is a material that the architect will find particularly helpful in modern design and decoration. Only the architect's imagination limits the possibilities for the effective use of this striking and diffusing material.

Clear, Brilliant, Impervious, Strong

It is clear and affords excellent vision. It has brilliant and mirror-like smoothness of surface which only fine Plate Glass can offer. It is impervious to moisture, weather, cleaning chemicals, pencil marks and other disfiguring agents. It is easily cleaned. And above all, while possessing the strength that protects and endures, it also lends to the furniture or fixtures in which it is the dominant material a beauty, dignity and modern touch which perhaps no other medium can offer.

Specific Uses

A few of the uses in which Heavy Plate Glass has proved eminently successful are: Book Shelves, Decorative Panels and Partitions, Shower Bath Enclosures, Bank Fixtures (Deal Plates), Glass Roofs, Glass Flooring, Porte Cochere Roofs, Skylights, Semi-enclosed Telephone Booths, Theater Marquees, Valances, Lighting Fixtures, Radio Acoustic Chambers, Refrigerator Doors, Show Cases, Soda Fountain Counters, Aquariums, Aquatic Tanks, Bulkheads, Counter Tops, Table Tops, Modernistic Furniture, Shelves and Mausoleums.

Physical Characteristics

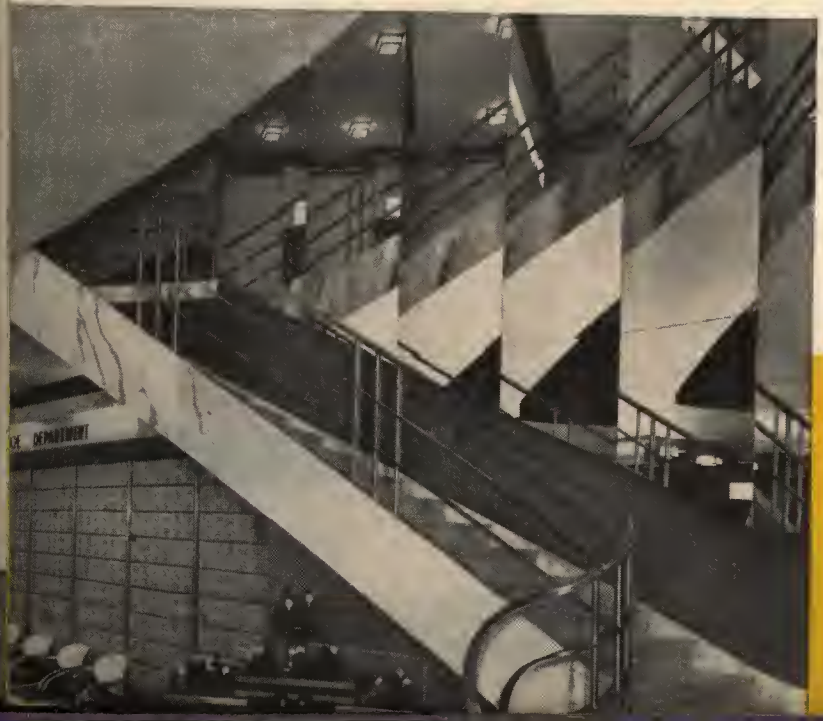
QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS PER SQ. FT.
Commercial Selected	3/8"	3/8" to 1/2" 72x160	3/8" 4.93 lbs.
	1/2"	5/8" to 3/4" 72x130	1/2" 6.58 lbs.
	5/8"	7/8" to 1 1/4" 70x130	5/8" 8.22 lbs.
	3/4"		3/4" 9.67 lbs.
	7/8"		7/8" 11.52 lbs.
	1"		1" 13.16 lbs.
	1 1/4"		1 1/4" 16.45 lbs.

STRENGTH	COLORS	FINISH
In direct proportion to the square of the thickness	Clear	Ground and Polished

PITTSBURGH PLATE GLASS COMPANY

BUILT-IN MIRROR, like the one in this bathroom, adds beauty and smartness. It gives the appearance of spaciousness and luxuriousness. Pittsburgh Mirrors are copper-backed to protect them against the effect of moisture. Architect: MAXWELL A. NORCROSS, Cleveland, O. *(Above)*

A STRUCTURAL wall mirror above and around a fireplace is a treat to the decor of any room. It reflects color, light, ond movement—makes the room seem larger and brighter. *(Above)*



Pittsburgh Mirrors

For Every Structurol ond Decorotive Purpose

Pittsburgh Mirrors include mirrors for every architectural need. Whether used structurally in a building, or as purely decorative media, Pittsburgh Mirrors are consistently of high quality and afford superior reflectivity.

Colors and Types Avoiloble

In line with the recent trend toward the wider use of mirrors, both structural and framed, and the increasingly important part played by mirrors in design and decoration, the PITTSBURGH PLATE GLASS COMPANY has developed a wider selection of glass colors and mirror backings than ever before. Consequently, the architect and designer can today create new and interesting effects with mirrors.

All Pittsburgh Mirrors are available made from regular Polished Plate Glass. But for the achievement of striking and unusual effects, Pittsburgh Mirrors may also be obtained made from blue, flesh tinted or green (Solex) Plate Glass. Furthermore, these various colors of glass may be treated to additional tone mutations by the backing used in fabricating them into mirrors. The regular silver backing is, of course, available, and in addition, a beautiful gold backing, and a smart gunmetal backing.

PITTSBURGH COPPER BACK MIRRORS

Pittsburgh Copper Back Mirrors receive, during manufacture, a coating of copper, electroplated over a heavy film of silver . . . and this copper backing forms an efficient protection against the usual effects of varying climatic and atmospheric conditions. Since these specially protected mirrors retain their beauty and usefulness year after year, their use practically eliminates the need for replacements.

Pittsburgh Copper Bock Structurol Mirrors

These mirrors are specially fabricated for usc with mastic, in order to give maximum service. Structural mirrors differ from other types in that they have an additional protective coating.

MADE PG FROM PITTSBURGH PLATE GLASS

← **LARGE MIRRORED WALL PANELS** heighten and brighten this staircase. They serve to increase the apparent size and reflect both customers and merchandise in this store. Architect: ELIAS-ROTHSCHILD, New York, N. Y. *(Left)*

STRUCTURAL MIRRORS, made with Pittsburgh Polished Plate Glass, add brightness, smart appearance and lively reflections to commercial interiors—whatever their size or style. Such mirror applications, as this one in the coffee shop of a southern hotel, aid greatly in achieving an atmosphere of distinction. Designed by LYMAN W. CLEVELAND, Philadelphia, Pa.

WHATEVER THE SIZE of a commercial interior, Pittsburgh Mirrors can make it smarter and more striking. Here, skillfully designed triplicate mirrors not only function as a practical merchandising aid, but also add charm and the illusion of greater size.

GAIETY, color and life are given to this bar in a San Diego restaurant by the generous use of mirrors. The attractiveness of this bar serves as a magnet to attract trade.

HERCULITE DOORS invite customers to enter. They make the interior of a shop part of the display—allow passers-by to see what the shop has to offer. *(Above)*

SMART, MODERN BALUSTRADE, created by Herculite Tempered Plate Glass panels, is a recent and effective architectural idea. Four times as strong as regular Plate Glass of equal thickness, it can withstand plenty of hard knocks in service. Architects: HOLABIRD & ROOT, Chicago, Ill. *(Above)*

Herculite Plate Glass

A Tempered Plate Glass of Great Strength and Shock Resistance

Herculite is Polished Plate Glass which has been specially processed by heat and chilling. It will support a weight four times as great as ordinary Plate Glass. It will bend four times as far without breaking. Its resistance to impact is 7 to 8 times greater.

Unaffected by Varying Surface Temperatures

Herculite is not affected by varying surface temperatures, being able to stand, without breaking, a temperature of 650 degrees F. on one surface, while the other is at ordinary atmospheric temperature. It resists shocks and impacts as well at 15 degrees below zero F. as at ordinary temperatures.

Shattering Qualities

When Herculite, under terrific impact, *does* shatter, it does not break into sharp fragments like ordinary glass, but disintegrates into innumerable small fragments which are comparatively blunt edged.

Specific Uses

Obviously, the uses of Herculite are almost limitless where strength and safety are important considerations. It proves extraordinarily satisfactory when used for aquariums, cell doors, deck lights, doors, fire screens, flooring, gas cooker doors, glass bottom boats, gauge guards, kitchen equipment, laboratory equipment, partitions, portlights, road traffic signs, shelves, show cases, sight glasses, table and dresser tops, underwater lighting, etc.

Physical Characteristics

QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS
Same as glass before tempering	Same as glass before tempering	72x108	Same as glass before tempering

STRENGTH	COLORS	FINISH
Approximately 4 times that of glass of equal thickness which has not been tempered	Same as glass before tempering	Same as glass before tempering

←

STURDINESS, STRENGTH AND ENDURANCE are outstanding characteristics of Transparent Herculite Doors, providing the brilliant, handsome appearance of Plate Glass. Designed by DARVEED, INC., New York, N. Y. *(Left)*

PITTSBURGH PLATE GLASS COMPANY

LARGE BUILDINGS OR MODEST HOMES—the fine finish and good visional qualities of Pennvernon Window Glass always assure high quality windows.

PLENTY OF DAYLIGHT is important in schools and office buildings. Pennvernon Window Glass in this junior high school provides windows of good, clear vision, of highly reflective beauty giving them plenty of daylight. Architects: Overstreet and Town, Jackson, Miss.

Pennvernon Window Glass

A Quality Sheet Glass for General Glazing Purposes

Pennvernon Window Glass represents an extraordinarily high development in sheet glass making. This glass is manufactured by a special process, in which it is drawn vertically and held absolutely flat from molten metal to finished sheet. During the drawing process, no rolls or foreign substances of any kind touch the surface of the glass until it has cooled sufficiently to be beyond injury. Consequently, Pennvernon has an unusually brilliant, reflective and unmarred surface finish on both sides of the sheet.

Advantages

Other superior qualities distinguish this fine window glass, too. Because it is made only from the purest and most carefully selected ingredients, it is remarkably transparent and retains its clarity indefinitely.

Pennvernon's durability also recommends it. Because the texture of its surfaces is so smooth, wear and abrasion affect it less than ordinary window glass, and its beauty and utility last longer. Because of these qualities, architects everywhere find Pennvernon Window Glass the most satisfactory sheet glass to specify.

Qualities

Pennvernon is graded at the factory by experts, in accordance with U. S. Government standards, and a label indicating quality is affixed to each light, as follows:

AA—This is the best quality of window glass obtainable. Because Pennvernon "AA" is higher in quality than is commercially necessary, it is made only on special order and priced accordingly.

A—The highest grade of window glass for commerical uses. Contains no imperfections that can perceptibly interfere with straight vision.

B—Window glass free from noticeable defects, but containing imperfections which prohibit its being graded as "A" quality.

Greenhouse—A special quality selected to eliminate defects injurious to growing plants. Available in sizes 16x18 in., 16x24 in. and 18x20 in. only.

Heavy Sheet Glass—Available in thicknesses of 3/16 in. and 7/32 in. and in AA, A, and B qualities. It is generally specified where weight and strength are required.

Picture Glass—Pennvernon Picture Glass, about 14 oz. in thickness, is a thin glass especially made and graded for picture framing.

Packing

Pennvernon Window Glass is packed with a sheet of special type separator paper between each light to prevent scratching, marring or staining. Lights are then placed in a specially constructed corrugated carton, which is safe and convenient to handle. This carton is inserted for shipment in a sturdy, lightweight wood crate, upon which the Pennvernon trade-mark always appears for easy identification.

Physical Characteristics

QUALITIES	THICKNESSES	MAX. SIZES	WEIGHTS PER SQ. FT.	STRENGTH	COLORS	FINISH
AA-A-B Greenhouse	Picture .062 - .070 Single Strength .087 - .095 Double Strength .118 - .133 Heavy Sheet 3/16" - .187 to .200 7/32" - .212 to .225	Heavy Sheet 3/16" up to 50 sq. ft. 7/32" up to 60 sq. ft.	Picture 13-14 oz. S.S. 19 oz. D.S. 26 oz. 3/16" 40 oz. 7/32" 45 oz.	Same as plate glass of equal thickness	Clear	Fire-finished

PITTSBURGH GLASS PRODUCTS

are available through the following branches of the

PITTSBURGH PLATE GLASS COMPANY

AKRON 4, OHIO
ALBANY 1, N. Y.
ALLENTOWN, PA.
AMARILLO, TEXAS
ANN ARBOR, MICH.
ATLANTA 1, GA.
ATLANTIC CITY, N. J.
AUGUSTA, GA.
AURORA, ILL.
AUSTIN, TEXAS
BALTIMORE 1, MD.
BEAUMONT, TEXAS
BINGHAMTON, N. Y.
BIRMINGHAM 1, ALA.
BOSTON 15, MASS.
BRONX 51, N. Y.
BUFFALO 2, N. Y.
BURLINGTON, VT.
BUTTE, MONT.
CHARLESTON, S. C.
CHARLOTTE 1, N. C.
CHICAGO 11, ILL.
CINCINNATI 2, OHIO
CLEVELAND 14, OHIO
COLUMBIA 3, S. C.
COLUMBUS 1, OHIO
CORPUS CHRISTI, TEXAS
DALLAS 2, TEXAS
DANVILLE, ILL.
DAVENPORT, IOWA
DECATUR 21, ILL.
DENVER 1, COLO.
DES MOINES 6, IOWA
DETROIT 2, MICH.
DUBUQUE, IOWA
DULUTH 2, MINN.
DURHAM, N. C.
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EL PASO, TEXAS
ERIE, PA.
FINDLAY, OHIO
FORT DODGE, IOWA
FORT WORTH 1, TEXAS
FOSTORIA, OHIO
GALESBURG, ILL.
GALVESTON, TEXAS
GRAND RAPIDS 3, MICH.
GREENSBORO, N. C.
GREENVILLE, S. C.
HAMILTON, OHIO
HAMMOND, IND.
HARRISBURG, PA.
HARTFORD 1, CONN.
HIGH POINT, N. C.
HOMESTEAD, PA.
HOUSTON 1, TEXAS
INDIANAPOLIS 6, IND.
IOWA CITY, IOWA
JACKSON, MICH.
JACKSONVILLE 3, FLA.
JEANNETTE, PA.
JOPLIN, MO.
KALAMAZOO, MICH.
KANSAS CITY 6, MO.
KITTANNING, PA.
KNOXVILLE 12, TENN.
LACROSSE, WIS.
LAFAYETTE, IND.
LANCASTER, PA.
LEXINGTON, KY.
LIMA, OHIO
LINCOLN 1, NEBR.
LITTLE ROCK, ARK.
LOUISVILLE 1, KY.
LYNCHBURG, VA.
MACON, GA.
MADISON 4, WIS.
MANCHESTER, N. H.
MANSFIELD, OHIO
MASON CITY, IOWA
McKEESPORT, PA.
MEMPHIS 1, TENN.
MIAMI 31, FLA.
MILWAUKEE 1, WIS.
MINEOLA, N. Y.
MINNEAPOLIS 15, MINN.
MOBILE 1, ALA.
MONTGOMERY 3, ALA.
MT. VERNON, N. Y.
MUSKEGON, MICH.
NASHVILLE 2, TENN.
NEWARK 8, N. J.
NEW CASTLE, PA.
NEW HAVEN 13, CONN.
NEW ORLEANS 1, LA.
NEW YORK (Brooklyn 1), N. Y.
NIAGARA FALLS, N. Y.
OKLAHOMA CITY 2, OKLA.
OMAHA 1, NEBR.
OSHKOSH, WIS.
PADUCAH, KY.
PARKERSBURG, W. VA.
PEORIA 2, ILL.
PHILADELPHIA 32, PA.
PITTSBURGH 22, PA.
PORTSMOUTH, OHIO
PROVIDENCE 1, R. I.
RACINE, WIS.
READING, PA.
RICHMOND 8, VA.
ROANOKE 5, VA.
ROCHESTER 8, N. Y.
ROCKFORD, ILL.
SAGINAW, MICH.
ST. JOSEPH 7, MO.
ST. LOUIS 10, MO.
ST. PAUL 1, MINN.
SALINA, KAN.
SAN ANTONIO 6, TEXAS
SAVANNAH, GA.
SCRANTON 9, PA.
SHREVEPORT 90, LA.
SIOUX FALLS, S. D.
SOUTH BEND 24, IND.
SPRINGFIELD 5, MASS.
SPRINGFIELD, ILL.
SPRINGFIELD, MO.
SPRINGFIELD 99, OHIO
SYRACUSE 1, N. Y.
TALLAHASSEE, FLA.
TAMPA 1, FLA.
TERRE HAUTE, IND.
TIFFIN, OHIO
TOLEDO 6, OHIO
TOPEKA, KAN.
TRENTON, N. J.
TULSA 1, OKLA.
UTICA 3, N. Y.
WASHINGTON 2, D. C.
WASHINGTON, PA.
WICHITA 1, KAN.
WILKES-BARRE, PA.
WILMINGTON 17, DEL.
WORCESTER, MASS.
YOUNGSTOWN 3, OHIO
ZANESVILLE, OHIO

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SAN JOSE, CALIF.
SAN MATEO, CALIF.
SAN PEDRO, CALIF.
SANTA ANA, CALIF.
SANTA BARBARA, CALIF.
SANTA MONICA, CALIF.
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PRINTED IN U.S.A. G61340 5-48

BROCHURE M-49

7a
4a

Magnalite

REG. U. S. PAT. OFF.

DIFFUSING GLASS

J. MERRILL RICHARDS
25 HUNTINGTON AVENUE, BOSTON 16, MASSACHUSETTS

decorative functional glass

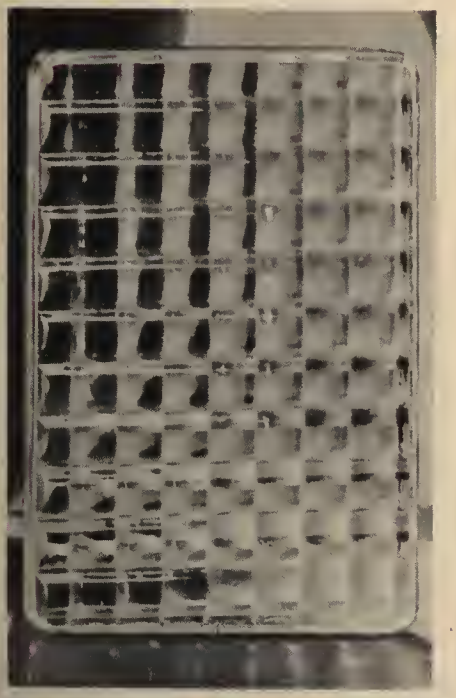
for schools • colleges • hospitals • institutions

Type "A" (actual pattern size)
Decorative and all purpose obscuring glass.

DESCRIPTION. Magnalite is a clear flint glass with series of cylindrically shaped lenses covering each surface and running at right angles to each other. Magnalite Type "A" is made with the lenses approximately ½" on centers and Type "B" ¼" on centers.

- Decorative and Exclusive Functional Properties
- Extremely Obscuring, Ensuring Privacy
- Harmonizes Perfectly With Glass Blocks
- Small Glass Openings Illuminate Wide Areas Evenly
- 4-Way Light Diffusion Improves Interior Vision
- Smart Modern Design For Dramatic Effects in Current Architecture
- Easy To Clean and Keep Clean
- Transmits Abundance of Mellowed Light

Fitzsimmons General Hospital, Denver, Colo.
Courtesy, U. S. Army Engineers
Magnalite "A" used as an obscuring glass throughout.



Type "B" (actual pattern size)
Functional with scientifically designed diffusing lenses.

WITH GLASS BLOCKS—MAGNALITE TYPE "A"
Harmonizes perfectly with all types of glass blocks.

New home office of the John Hancock Mutual Life Ins. Co., Boston. *Cram & Ferguson, Archts. & Engrs., Turner Constr. Co., Bldrs.* Certain outside windows and other locations.

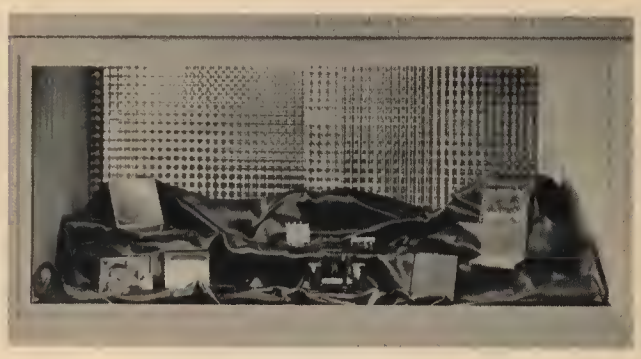
art galleries • monumental and commercial buildings

Magnalite diffusing glass

RESTAURANT—MAGNALITE TYPE "A"
Used in decorative screens and partitions. Effectively bars vision yet transmits an abundance of mellow light.

Wm. T. Aldrich, Archt. — Courtesy, Boston Museum of Fine Arts

CEILING LIGHTS—MAGNALITE TYPE "A" WIRED
MAGNALITE forms a perfect screen and hides all superstructure and lighting equipment, thoroughly diffusing the light from artificial sources as well as daylight. MAGNALITE Type "B" wired widely used for this purpose.



Effective presentation of show case merchandise

TEN EYCK HOTEL, ALBANY, N. Y.

Lippincott & Margulies, Inc., Designers
Photo by Lionel Freedman Pictorial Service

INSTALLATIONS IN WELL KNOWN BUILDINGS

Pentagon Building, Agriculture Extensible Building, National Art Gallery, Washington, D.C. — Harvard and Yale Universities — Planta de Distribucion, Xotepingo, Hospital Militar, Mexico, D.F. — Sports Arena, La Paz, Bolivia. — Cincinnati and Buffalo Railroad Stations. — New England Mutual Life Insurance Building, Boston. — De Young Museum, San Francisco. — Bethlehem Steel Company, Bethlehem, Pa. — General Electric Company, Schenectady, N.Y.—Dow Chemical Company, Midland, Mich. — Robert Simpson Co., Ltd., Toronto, Canada.

SPECIFICATION

MAGNALITE Diffusing Glass Type "A" or "B" (Plain or Wired).

BETTER LIGHTED INTERIORS

Front Page Photo FOWNES GLOVE SHOW ROOM, 5th Ave., New York City
Ketchum, Gina & Sharp, Archts.

Kenton County Warehouse, Covington, Ky. Partial Installation

EXCLUSIVE LENS FORMULA

The lenses of MAGNALITE "B" conform to an exclusive optical formula. One series of lenses spreads light evenly at right angles to its axis. The other spreads light in the opposite direction. The resulting diffusion image of undirectional, or sun's rays, is of even intensity and the same relative shape as the glass opening. The total diffusion angle of MAGNALITE "B" averages 50° and MAGNALITE "A" 35° on each axis.

SMALLER OPENINGS GLAZED WITH MAGNALITE EFFECTIVE

Due to light diffusing properties smaller openings glazed with MAGNALITE will provide ample illumination. Good interior vision is more a question of securing even light distribution of moderate intensity than flooding a room with bright sunlight. Too much light is objectionable. Smaller glass openings effect savings in Winter heat losses and admission of Summer heat.

A SERVICE is maintained for assistance in solving Daylighting Problems.

DISTRIBUTION

MAGNALITE is sold, domestically, by leading glass dealers everywhere and through established Foreign agents.

THICKNESS, SIZES AND WEIGHTS

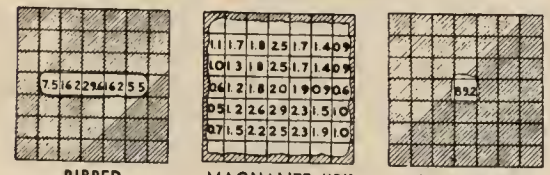
Type	Thickness	Weight Sq. Ft.	Apx. Weight Packed Domestic Cases
A Plain	1/4"	3.0 lbs.	3.7
A Wired	Full 1/4"	3.3	4.0
B Plain	Full 3/16"	3.0	3.7
B Wired	Full 1/4"	3.3	4.0

STANDARD STOCK SHEETS UP TO 48" WIDE and up to 120", 132" and 144" LONG. MAXIMUM SHEETS 60" WIDE.

PRECISION DAYLIGHTING WITH MAGNALITE TYPE "B" WIRED.

The progress photographs of a Tobacco Sales Warehouse show the light diffusing action of Magnalite Type "B" wired. Small skylights, consisting of single sheets of glass, are installed nearly flat and spaced so that the sun's diffusion images from each opening overlap each other in all directions. Sun spots and objectionable areas of high lights and shadows are eliminated to produce an unexcelled natural work-light. The ratios of glass area to floor area are varied according to latitude to secure proper light intensities. Magnalite is the standard and most widely used skylight glass for Warehouses in all Tobacco belts.

EVEN LIGHT DISTRIBUTION



COMPARATIVE LIGHT DIFFUSION IMAGES OF SUNLIGHT

FIGURES ARE IN RELATIVE PERCENTAGES OF INCIDENT LIGHT INTENSITY.

Kenton County Warehouse, Covington, Ky. Installation Completed

OTHER DAYLIGHTING PRODUCTS

Thermag Semi Vacuum Glass Block insulating skylights. Single Glazed Type W-F Skylights. Glass floors and pavement lights.

MANUFACTURE

MAGNALITE is manufactured, in plain and wired sheets, by the **MISSISSIPPI GLASS CO.**

J. Merrill Richards
25 Huntington Avenue • Boston 16, Massachusetts

SOUTHWESTERN SHEET GLASS CO
OKMULGEE OKLA. U. S. A.

SOUTHWESTERN SHEET GLASS CO.

OKMULGEE, OKLAHOMA

GLASS designed for Illumination, Obscurity and Modern Styling

The Southwestern Sheet Glass Company was organized in 1919 to furnish and service the rolled glass requirements of the glass distributors and builders of the Middle West. Southwestern Sheet Glass products are now carried in stock by glass jobbers and dealers in practically every large city in western United States.

We feel our line is so complete as to cover all reasonable requirements of the trade, and it will be our policy to keep it so. It is also a policy of the Southwestern Sheet Glass Company to keep on hand, at all times, a stock of merchandise to enable us to give prompt and economic service to the glass distributors, and to enable them to pass to building owners, for necessary replacement, this same class of service.

Rolled, Figured and Wire Glass fill a place in the construction industry that is not approached by any other type or types of glass. Rolled, Figured and Wire Glass allow maximum illumination and obscurity at the same time. Figured Glass has found its place in the scheme of modern styling.

adaptability

Southwestern Sheet Glass Products are quite versatile and allow for selection of patterns, both wired and unwired, truly befitting a particular style of architecture. These fine patterns find many uses in the glazing of windows, sky-lights, doors, transoms and partitions to transmit and diffuse light. They are used to obstruct vision through the glass and to retard infra-red rays (Heat Absorbing). Other uses include lighting fixtures, shelving and advertising signs. A great demand has been developed for its use in domestic refrigeration.

characteristics

Southwestern standard eighth-inch rolled glass is one-fourth greater in thickness than ordinary D. S. window glass, which increases the shock resistance in a window more than 50%.

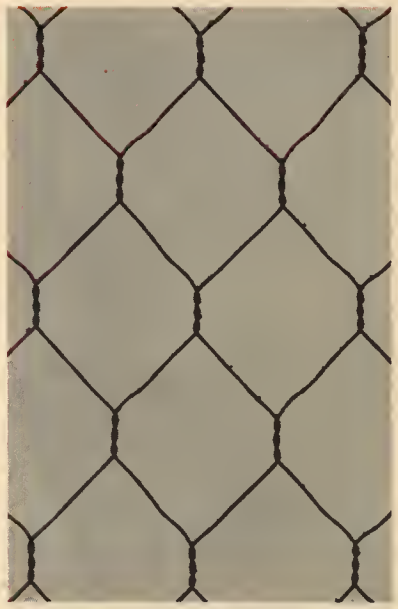
Wire glass is for all practical purposes indestructible except in cases of fire. In such a case it will still hold together and prevent draft and will not allow the glass to fall causing possible injury or loss of life. Wire glass is especially useful in windows, skylights or other places where the use of a fire retordent is advisable.

Southwestern products have maintained through the years a fire polished surface second to none. Well annealed glass cannot be detected by the eye, however the test of time will distinguish Southwestern products from many others in the all important point of annealing.

underwriters' requirements

Southwestern Wire Glass is an approved fire retardent bearing the number—R1621 of the Underwriters' Laboratories, Inc., and is regularly inspected by this institution.

Rolled Wire Glass



(Pattern actual size)

Polished Wire

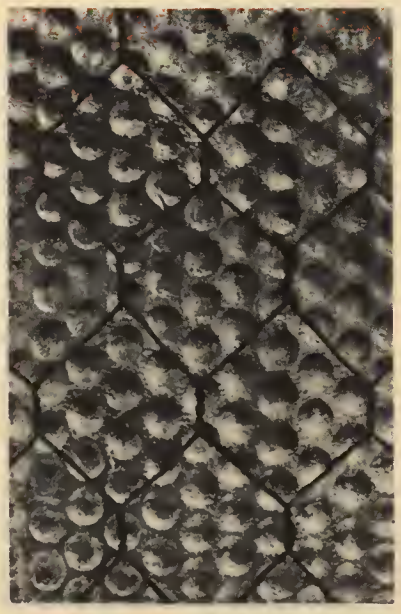
SOUTHWESTERN Palished wire glass has been tested by the Underwriters' Labaratories and is inspected by this institutian. Palished Wire glass is plate glass with wire inserted.

Used and specified an jabs where a fire retardent wire glass is required and visibility is essential.

In ardering, specify width first. The twist af the wire runs with the length af the sheet, ar the secand dimensian.

Sizes, Thicknesses, Weights

Manufactured in sizes up to 56"x140". Appraximate thickness ¼". Shipping weight in standard stack sheet cases af appraximately 400 sq. ft., 4-1/3 lbs. Also packed in cut sizes ta arder.



(Pattern actual size)

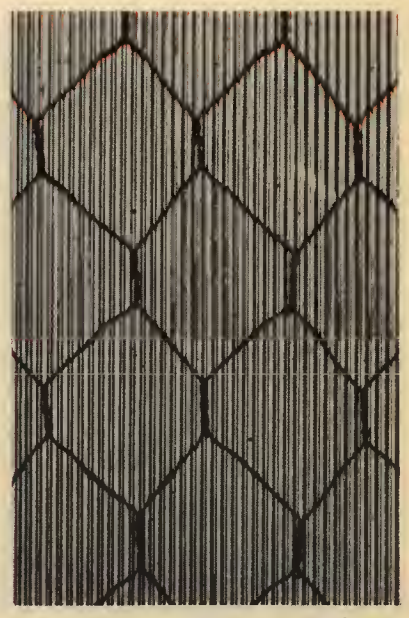
Dewdrop Wire

DEWDROP WIRE glass has been tested by the Underwriters' Labaratories and is regularly inspected by this institution. DEWDROP WIRE glass is used in skylights and windaws in bath waad and metal sash. Alsa used in daars and partitians.

In ardering, specify width first. The twist af the wire mesh runs with the length af the sheet, ar the secand dimensian. The first dimensian is understaad ta be the width.

Specifications

Thickness	Max. Dimen.	Weight Pkd.	Weight Unpkd.
¼"	56"x144"	4¼ lbs.	3½ lbs.
⅜"	48"x132"	6 lbs.	5¼ lbs.
½"	48"x132"	8 lbs.	7¼ lbs.



(Pattern actual size)

Ribbed Wire

RIBBED WIRE glass has been tested by the Underwriters' Labaratories and is regularly inspected by this institutian. RIBBED WIRE glass is recammended and specified far use in all places where a substantial ar fireproaf glass is desired and when the maximum amaunt af diffused light is required. Manufactured 18 ribs ta the inch.

RIBBED WIRE glass shauld be ardered in the same manner as DEWDROP WIRE glass.

Specifications

Thickness	Max. Dimen.	Weight Pkd.	Weight Unpkd.
¼"	56"x144"	4¼ lbs.	3½ lbs.
⅜"	48"x132"	6 lbs.	5¼ lbs.
½"	48"x132"	8 lbs.	7¼ lbs.

Rolled Figured Glass

(Pattern actual size)

Meteor

METEOR glass is a popular figured glass because af its extremely ortistic design and high degree of obscurity. METEOR gloss is used in daars, partitians, transoms, cabinets, bath raam windaws ond ather general interior glozing.

Stocked by all distributars.

Not manufactured with wire insertian.

Sizes, Thicknesses

METEOR glass is manufactured in ⅛" and 7/32" thickness. Extreme dimensions: 60" x144". Shipping weight 2-1/3 lbs. sq. ft. far ⅛" ond 3½ lbs. sq. ft. far 7/32".

(Pattern actual size)

Crepe

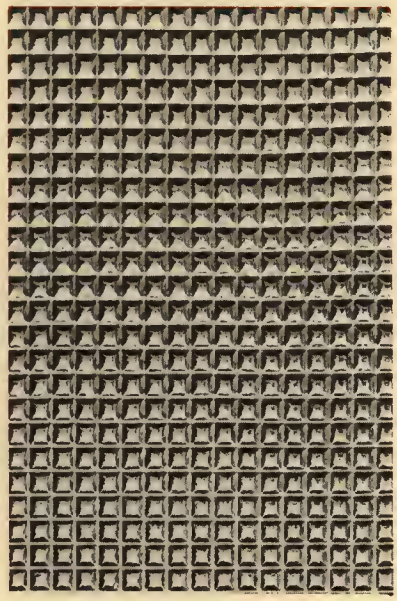
CREPE. The figured surfoce af this pattern clasely resembles the fine and papular textile af the same name. Where a saft diffused light is needed, CREPE has na equal. Used in shawer daors, lighting fixtures and general interiar glozing. Also ovailoble with ane Polished Plate Glass surface.

Nat monufoctured in wire glass.

Sizes, Thicknesses

Manufactured in sizes up to 60"x144"and in ⅛" & 7/32" thickness. Light canductivity af ⅛" thickness, 94%.

Shipping weight the same os far METEOR.



(Pattern actual size)

Pyramid

PYRAMID is o conventional design af figured glass. Monufactured with 64 pyramidal indentatians per square inch. A highly obscure glass far use in doars, transoms and portitians. PYRAMID is also manufactured with ane Polished Plate Glass surfoce.

A glass distributors stack item.

Not monufactured in wire glass.

Sizes, Thicknesses

Manufactured in sizes up ta 60"x140" ond in ⅛" and 7/32" thickness. Shipping weight 2-1/3 lbs. sq. ft. far ⅛" and 3½ lbs. sq. ft. for 7/32."

Heat Absorbing Glass

(Pattern actual size)

Florentine

FLORENTINE glass is the mast papular af figured glass patterns. Diffuses light excellently. Used in doors, portitians, transams, cabinets, bathraom windaws, etc.

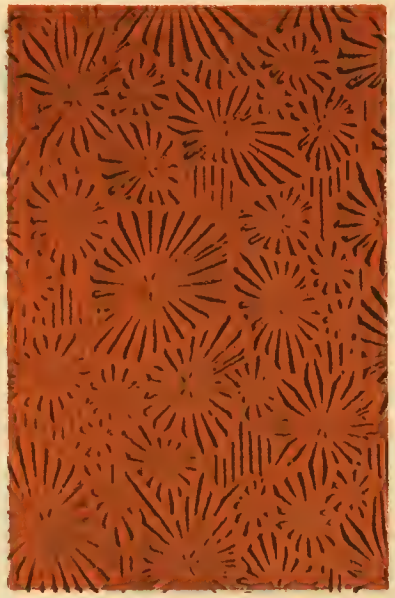
The FLORENTINE pottern is readily available lacally far quick replacement withaut risk of losing uniformity of pottern ond with great economy.

Nat manufactured in wire glass.

Stacked by all glass distributars.

Sizes, Thicknesses

Manufactured in sizes up ta 60"x144" and in ⅛" and 7/32" thickness. Shipping weight 2-1/3 lbs. sq. ft. for ⅛" and 3½" lbs. sq. ft. far 7/32".



(Pattern actual size)

Florentine - Colored

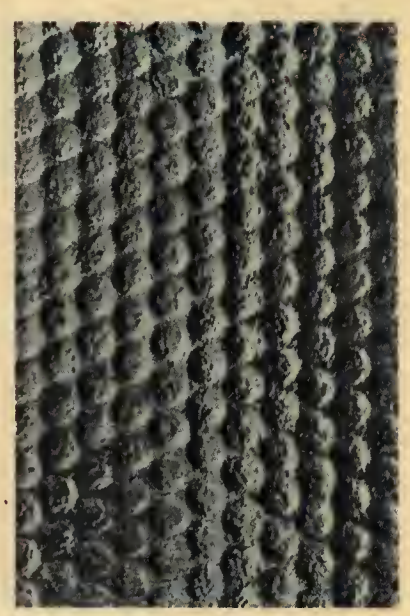
COLORED FLORENTINE is manufactured in blue, green, wine, and light and dark amber. Used in the tropics to admit light and to reduce the heat and glore of the sun.

Interiar decaratian calar schemes may be enhonced, or, decorative effects may be ochieved, by the utilization af the availoble FLORENTINE pattern colors.

Nat manufactured in wire gloss.

Sizes, Thicknesses

Manufactured in sizes up to 60"x140" and in ⅛" thickness anly. Shipping weight for COLORED FLORENTINE the same as for clear FLORENTINE.



(Pattern actual size)

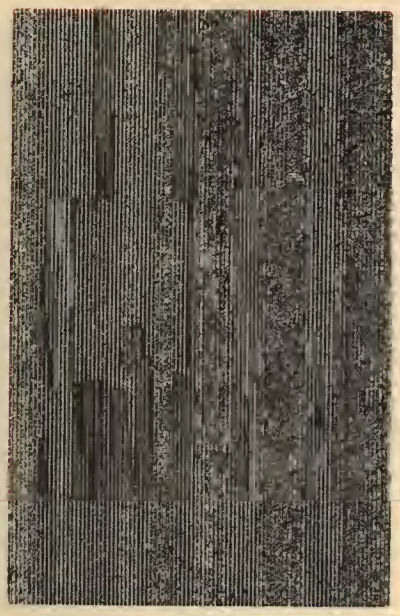
Dewdrop - Colored

HEAT ABSORBING glass is made in the DEWDROP pattern in a saft blue-green calor. The principal function of HEAT ABSORBING glass is to retord the passage of solor heat. This glass with fire finished surface admits appraximately 50% of the light, and excludes opproximately 80% of the heat rays af the sun. HEAT ABSORBING is availoble with a sandblasted finish for increasing illumination and reducing glare. Not made with wire insertian.

Sizes, Thicknesses

HEAT ABSORBING is monufactured in ⅛" and 7/32" thickness. Extreme dimensians, 48"x140". Shipping weight per square foot for ⅛" gloss 2-1/3 lbs., far 7/32" glass 3½ lbs.

Rolled Glass



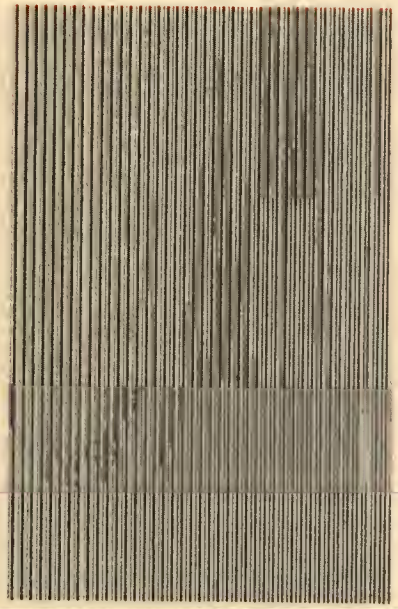
(Pattern actual size)

Plainlite

PLAINLITE glass is a plain rolled glass without a distinctive pattern. Almost as clear as window glass. Used in art glass and in openings where antique glass is desired.

A glass distributors stock item. High light transmission and low diffusion.

Not manufactured in wire glass.

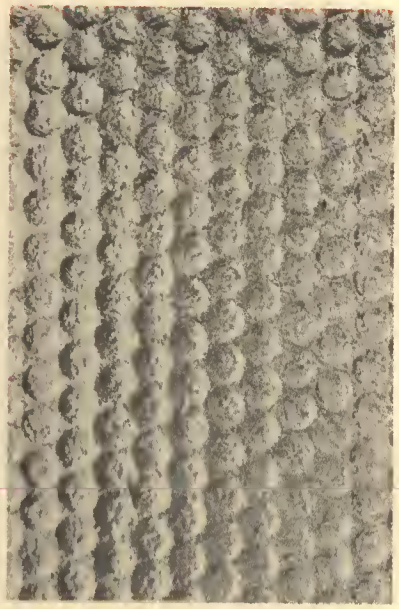


(Pattern actual size)

Ribbed

RIBBED glass design consists of approximately 20 fine parallel ribs per inch which spread light perpendicular to the ribs.

RIBBED glass is used largely in industrial windows. Also used in windows of garages and warehouses where an inexpensive glass and diffused light are desired. Should be installed with ribs vertical. Made in wire glass. (See Page 3)



(Pattern actual size)

Dewdrop

DEWDROP is quite a favorite pattern in rolled glass. The design is produced by a series of raised adjacent lenses which diffuse light in a circular pattern. A very obscure glass yet exceedingly easy to clean.

DEWDROP is the most commonly used of all rolled figured glass patterns. Especially adapted for installation in industrial windows. A very attractive pattern for sandblast work. Made in wire glass. (See page 3)

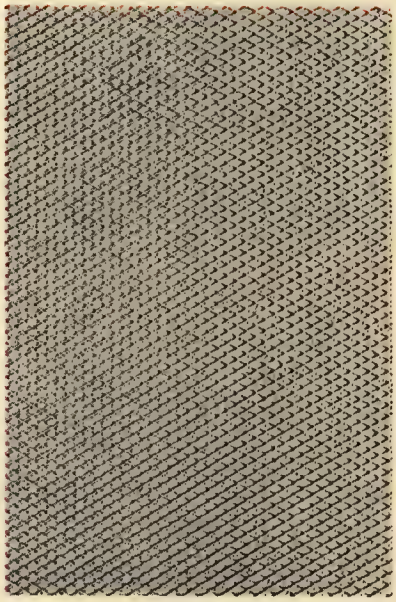
Sizes, Thicknesses

Manufactured in sizes up to 48"x132" in 1/8" and 7/32" thickness. Shipping weight 2-1/3 lbs. sq. ft. in 1/8" and 3½ lbs. sq. ft. in 7/32".

Specifications for above patterns

Thickness	Extreme Dimensions	Weight Per Sq. Ft. Unpacked	Weight Per Sq. Ft. Packed
1/8"	60"x144"	2 lbs.	2-1/3 lbs.
7/32"	60"x144"	2½ lbs.	3½ lbs.
3/8"	48"x132"	5¼ lbs.	6 lbs.
½"	48"x132"	7¼ lbs.	8 lbs.

Directional Patterned Glass



(Pattern actual size)

Fabric

FABRIC is o pottern formed by cross ribs moking very smoll cancove lenses. This pottern diffuses light excellently ond is eosily cleaned. Manufoctured primorily for use in foctory buildings but is also suitable far some types of commerciol buildings. Not monufoctured in wire gloss.

Sizes, Thicknesses

Monufactured in sizes up to 48"x132" ond in 1/8" and 7/32" thickness. Shipping weight 2-1/3 lbs. sq. ft. for 1/8" and 3½ lbs. sq. ft. for 7/32".

(Pattern actual size)

Crepeline

CREPELINE by Southwestern is o new pattern in rolled, figured, flot gloss. One side is flot ond hos o high fire polished surface. The pattern side consists of o finely engroved surfoce much like our regulor CREPE, ond with very norrow convex lines approximotely ¾" apart ond parallel. CREPELINE is not only obscure, but it is also o decorative glass.

CREPELINE gives the orchitect or designer an appartunity ta creote unusual effects from noturol os well os artificial illuminatian. Used in barred lights, inside portitions, cofes, nite-clubs, etc. For an excellent, distinctive, directianal pattern we suggest you specify CREPELINE.

Specifications

CREPELINE is monufoctured with the following surfoces: fire polished, polished, mochine graund and sandblasted. Manufoctured only in 7/32" thickness and in widths up to 60" ond lengths up to 144". Shipping weight 3¼ lbs. per squore foot.

CONVENTION HALL Houston, Texos
Southwestern Crepe ond
Wire Gloss used throughout.

STEVENS HOTEL Chicogo, III.
Southwestern Wire Gloss Products used exclusively in the construction of the Hotel — The Lorgest in the World.

SOUTHWESTERN BELL
TELEPHONE CO. Houston, Texas
10,000 sq. ft. Southwestern
Polished Wire Gloss used.

SOUTHWESTERN SHEET GLASS CO
OKMULGEE OKLA. U. S. A.

SOUTHWESTERN SHEET GLASS CO.

OKMULGEE, OKLAHOMA

CON-GLAZE

GLAZING COMPOUND REMAINS ELASTIC

FOR GLAZING STEEL
ALUMINUM, BRONZE
AND WOOD SASH

CONCORD PAINT COMPANY, INC.
421 HUNTS POINT AVENUE • NEW YORK 59, N. Y.

CON-GLAZE

glazing compound remains elastic

for steel, aluminum, bronze and wood windows

CON-GLAZE is the ideal compound for metal window glazing. It remains elastic and water-resistant and is more adhesive than ordinary putty. It need not be painted, making it particularly effective for use on aluminum and bronze windows.

On **WOOD SASH** *CON-GLAZE* forms a perfect and water-repellent bond to both the sash and the glass. The elasticity of *CON-GLAZE* facilitates replacement of broken glass, thus eliminating any damage to the sash.

special qualities

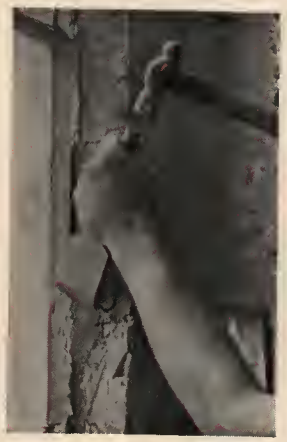
1. A "non-drying" glazing compound.
2. Remains elastic and rubbery.
3. Allows for expansion, contraction and vibration.
4. Cushions the glass against unnecessary breakage.
5. Makes re-glazing easy.
6. Absolutely water-repellent.
7. Resists acid and alkali fumes.
8. Its adhesive qualities prevent moisture from getting underneath to corrode the metal or rot the wood.

plus this important EXTRA quality

DANGER OF MARRING FRESHLY GLAZED SASH IS REDUCED

CON-GLAZE initial set is faster. This faster set reduces the hazard of marring with finger marks, etc. Although *CON-GLAZE* sets faster it will not oxidize or "dry" throughout.

save on maintenance



This putty is holding well but is hard as steel to chop out. It takes a man 15 to 20 minutes to clean out this old putty. It is hard, mean work.

CON-GLAZE can be re-glazed easily. A man may clean out a window where *CON-GLAZE* is used in 1 to 2 minutes.

*suggested specifications

STEEL, ALUMINUM & BRONZE WINDOWS

1. Window rabbets shall be thoroughly cleaned.
2. No glazing shall be carried on during inclement weather or when sash or glass is wet, damp or frosted.
3. Glass shall be well bedded and faced with *CON-GLAZE* as manufactured by the CONCORD PAINT COMPANY, INC., New York, N. Y.

WOOD SASH

1. Wood shall be primed.
2. Glass shall be bedded and then faced with *CON-GLAZE* as manufactured by the CONCORD PAINT COMPANY, INC., New York, N. Y.

Stock colors of CON-GLAZE: Natural, Gray, Brown, Green, Aluminum.

*CON-GLAZE meets Federal Specification TT-P-781a Type 1.

CON-GLAZE GLAZING COMPOUND

far superior to ordinary putty . . . economical to use

CON-GLAZE is a tender, smooth, easy working glazing compound. Because it handles so easily many glaziers prefer to use it to ordinary putty and do not figure any more for labor when using *CON-GLAZE*.

Here are a few glazing firms who state that *CON-GLAZE* handles as easy as putty and that their labor costs of application are no higher.

CONTRACTORS GLASS CO.
New York, N. Y.
ELIZABETH PLATE GLASS CO.
Elizabeth, N. J.
KOSSON & SON
Passaic, N. J.
NEW HAVEN GLASS CO.
New Haven, Conn.
PITTSBURGH PLATE GLASS CO.
Hartford, Conn.
PITTSBURGH PLATE GLASS CO.
New Haven, Conn.
BARNEY SCHOGEL, INC.
New York, N. Y.
DAVID SHULDINER, INC.
Brooklyn, N. Y.
EARL R. SMITH, INC.
Stratford, Conn.
STEEL WINDOW SERVICING CORP.
Brooklyn, N. Y.
UNION COUNTY PLATE GLASS CO.
Linden, N. J.
STATE GLASS CO.
Hartford, Conn.

COMPARATIVE GLAZING COSTS

Additional cast is negligible. One glazier generally uses appraximately 100 lbs. af putty ar campaund in ane day.

	Ordinary Putty	CON-GLAZE
Cast af one day labar	Same	Same
Cast af glass	Same	Same
Additional cast af CON-GLAZE	——	$1.35

For glazing work amaunting to $75.00 up ta $150.00 the additional cast af using CON-GLAZE is appraximately $1.35.

NO WASTE—*CON-GLAZE* is also economical because it keeps well in the package. Ordinary putty settles and dries fast, resulting in much waste. *CON-GLAZE* has minimum settling and may be used down to the last ounce.

several representative buildings glazed with *CON-GLAZE*

PRATT & WHITNEY PLANT, Hartford, Connecticut
Glazed by Pittsburgh Plate Glass Co.

HOFFMAN-LaROCHE PLANT, Nutley, New Jersey.
Architect, Fellheimer & Wagner

WORTHINGTON PUMP & MACHINERY CO.
Wellsville, New York
Archt. & Engr., The Austin Co.

BIRDSBORO FOUNDRY & MACHINERY CO.
Birdsbara, Pennsylvania
Archt., Shreve, Lamb & Harman
Engr., Alexander Crasett Co.

ECLIPSE BENDIX PLANT
Bendix, New Jersey
Archt. & Engr., Brawn & Matthews

AMERICAN STEEL CASTING CO.
Nework, New Jersey
Archt. & Engr., Walter Kidde Co.

DEER PARK STATE HOSPITAL
Deer Park, New Yark
Archt., New Yark State

UNIVERSITY OF MICHIGAN
Married Students Dormitary
Archt., Charles Nable Co.

GENERAL ELECTRIC CO. RADIO EQUIPMENT BLDG.
Schenectady, New Yark
Archt., General Electric Co
Engr., James Stewart Co.

NAVAL AIR STATION
Narfalk, Virginia
Archt., United States Gaverament

PRUDENTIAL INSURANCE OFFICE BLDG.
Newark, New Jersey
Archt., Vaarhees, Walker, Faley & Smith

ROME AIR DEPOT
Rame, New Yark
Archts., A. E. Paar, Gibbs & Hill, R. N. Severud

GREAT NECK HIGH SCHOOL
Great Neck, New Yark
Archt., Taaker & Marsh

IDLEWILD AIRPORT
Queens, New Yark
Archt., Delana & Aldrich

CONCORD PAINT COMPANY, INC.

CONCORD

certified elastic caulking compound

Masonry and Bricks

Window Caulking

Skylight Caulking

CONCORD PAINT COMPANY, INC.

421 HUNTS POINT AVENUE
NEW YORK 59, NEW YORK

the proven and accepted caulking compound

When caulking only a good quality compound should be used. Concord Caulking Compound possesses the following properties:

1. Made with vitalized oil that forms a tough outer protective skin.
2. Remains rubbery and elastic underneath.
3. Repels water.
4. Withstands vibration, expansion and contraction.
5. Will not shrink or crack.
6. Assures a permanent watertight seal.
7. Adheres firmly to wood, metal, masonry, stucco, glass, etc.

suggested uses

Caulking around window frames and door jambs; seals cracks and crevices in concrete, stone, bricks; buttered on metal windows when setting; sealing flashings around chimneys, cornices, coping walls; waterproofing store fronts, greenhouses, etc.

Stock Colors: Natural, Gray, Black, White, Red.

THREE QUARTERS OF A CENTURY OF EXPERIENCE

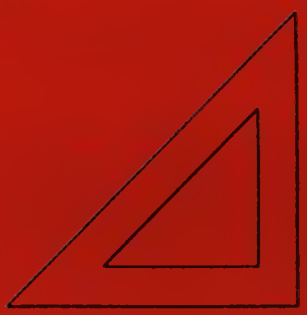
CONCORD PAINT COMPANY, INC., through its predecessors, has an experience in the manufacture of putty and compounds of over seventy-five years in meeting the varied needs and changes in building and construction. When you specify "CONCORD" you do so with the knowledge that you are receiving products tested by time and experience.

From this long and honorable experience has come an unquestioned acceptance of Concord Products by contractors, builders and architects alike.

7b/2

PECORA

PRODUCTS FOR BUILDINGS



MASTICS
SASH PUTTY
ROOF COATING
MORTAR STAINS
WATERPROOFINGS
CALKING COMPOUNDS

PECORA PAINT COMPANY, INC.
PHILADELPHIA, PA.

. . . PECORA CALKING

INTRODUCED in 1908, this plastic material is impervious to heat, cold and moisture, or acid fumes. When set, it forms a tough skin on the surface but remains permamently pliable and elastic underneath. It adheres tenaciously to wood, stone, terra cotta, concrete, iron, steel, glass, or any other building material, while its permanent elasticity adjusts itself under all ordinary conditions to variations in expansion and contraction, or warping of the surfaces it joins. It is made in two consistencies, knife grade and gun grade.

• Advantages of Calking

The prevention of air leakage is a vital pre-requisite to fuel saving and satisfactory heating and to the subsequent comfort of the occupants of a building.

Calking is today recognized as a necessary provision for all building construction for prevention of air and moisture leakage or seepage around window and door frames and between masonry joints. However, calking assumes even greater importance in connection with air conditioning.

This modern development is dependent for operating efficiency on temperature control—and control, in turn, functions most economically when all joints are properly sealed with Pecora Calking Compound.

Pecora Tile Mastic for Application of Metal and Plastic Tile

Pecora Tile Mastic is a soft, putty-like material, easily spread with a putty knife or serrated trowel. Suitable for both metal and plastic tile.

Pecora Tile Mastic is on an oil base, is exceptionally waterproof and sets to a tough, flexible mass. It develops wonderful adhesive strength and is designed to give high quality performance, with extreme durability.

Pecora Tile Mastic is slow drying and can be spread over a good portion of the wall, which eliminates the necessity of switching frequently from applying tile and spreading cement.

• Recommended Methods of Application

Joints to be calked most efficiently should be at least ½ in. in width and preferably not less than ½ in. in depth. If wider than ½ in. or deeper than 2 in., these should be packed with calking cotton to within not less than ½ in. of the face surface and the remaining space should be filled with calking compound. The use of oakum for packing a joint (especially a masonry joint) should be avoided, as oils in the oakum are likely to stain stone.

All joints to be calked should be built up or cut out square down the sides (not V-shape), and they should be thoroughly cleaned of all dust, dirt and loose matter before the calking compound is forced in. Otherwise the calking compound cannot bond properly.

If the calking compound is to come in contact with material that is of a very porous nature, the joint should be brushed or sprayed with a coat of Pecora Klere-Seal Dampproofing Liquid that will close the pores, thus preventing undue "suction," which would have a tendency to lessen the life of the compound.

A satisfactory Hand Calking job can be done by a conscientious mechanic if the compound is forced into the joints with a hand tool, such as a putty knife or small trowel. For this method of application Pecora "Knife" consistency (sold by the pound) should be used.

Hand Gun Calking

The Pecora High Pressure Calking Guns are the most modern in use. If care is taken to force calking compound back into the joint (not merely laying a thin strip of it on top) a good calking job can be done. For this method use Pecora "Gun" consistency (sold by the gallon).

Power Gun Calking

Whereby the gun calking compound is forced into the joint under heavy pneumatic pressure. This is recognized by all authorities as the most efficient method. Installations done by this method will cost somewhat more because a greater amount of calking compound can be forced into any given depth of a joint, but on large construction projects many of the leading architects insist on this method of application, especially for the calking of masonry joints.

COMPOUND . . . . . .

• SUGGESTED CALKING SPECIFICATIONS

Materials and Methods

Calking material shall be Pecora Calking Compound as manufactured by the Pecora Paint Company, Inc. of Philadelphia. (Specify color and consistency.)

Calking Wood Frames—After staff beads have been removed by the carpenters, all exterior wooden window frames and wooden door frames shall have joints between wood and masonry (including at heads and sills) thoroughly air cleaned and calked, after which the staff beads shall be set in place by the carpenters. In all joints between wood frames and masonry, the calking compound shall be forced to a depth of at least ½ in. in spaces to be provided when frames are set (see "Masonry Work").

Calking Metal Frames—All exterior metal frames for steel sash or for doors shall have joints between metal and masonry (including at heads and sills) thoroughly cleaned and calked. In all joints between steel frames and masonry, the calking compound shall be forced to a depth of at least ½ in. in spaces to be provided when frames are set (see "Masonry Work").

Masonry Work

Jointing of Terra Cotta and Masonry for Calking—The joints of all copings, cornices, gutters, belt courses, base courses, or other projecting members as specified under "Calking" shall generally be not less in width or thickness than ½ in., unless otherwise shown or specified. The mortar of all such joints shall be kept back or raked out to a depth of not less than 1 in., or more than 1½ in., and left ready to receive the calking compounds as specified.

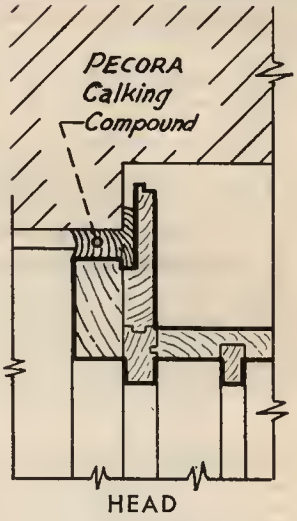
Calking Joints in Masonry and Terra Cotta—Thoroughly clean and calk all open joints (see "Masonry Work") in copings, cornices, gutters, belt courses, base courses, and any projections beyond the vertical wall whether in terra cotta, stone, or other masonry materials. Joints to be calked shall be all those, whether horizontal or vertical, on tops, faces and soffits of all copings and of every projecting member except vertical faces of base courses. The calking shall not be started until after the building is cleaned down and shall start at the top and be continued until completed.

(Note: If columns, pilasters or balusters are included in the design, the calking of same, including capitals and bases, should be separately referred to.)

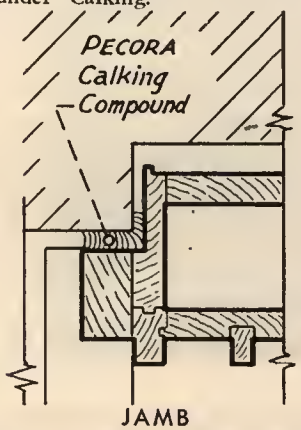
Carpentry Work

Removing Staff Beads for Calking
At the proper time remove staff beads (unless detailed for reception of calking) from all wooden window frames or wooden door frames to allow for calking as specified under "Calking" and after calking is completed, securely and neatly replace the staff beads and leave ready for painter to putty nailholes and complete painting.

Jointing of Window and Door Frames for Calking
The mortar of all exterior joints between masonry and window or door frames, both wood and metal, shall be kept back or raked out to a depth of not less than ½ in. nor more than ¾ in. and left ready to receive the calking compound as specified under "Calking."



HEAD



JAMB

SILL

PECORA PUTTIES for METAL & WOOD SASH

Our line of Sash Putties, and Glazing Compounds are carefully formulated to meet the various requirements for best performances. The materials listed below are outstanding in their class, dependable and durable and will give entire satisfaction when properly used.

NO. 181-A PECORA ELASTIC GLAZING COMPOUND—A high grade glazing compound made of selected pigments and processed oils in balanced proportions to produce a material of excellent quality, works smoothly and easily under the knife, stays put and remains plastic under a strong surface film.

For use on both wood and metal sash. This grade is *recommended* for use on all sash.

NO. 101-C PECORA SPECIFICATION PUTTY—A high grade sash putty suitable for both wood and metal sash. Made of chalk whiting and pure linseed oil.

NO. 100-Q PECORA SASH PUTTY—A pure linseed oil putty similar to above but coarser in structure and firmer drying. Suitable for use on both wood and metal sash.

NO. 120-C PECORA CASEMENT PUTTY—A firm drying putty made of processed oils for use in steel sash only. Designed to meet conditions when a hard drying material is desired.

NO. 70-N PECORA METAL SASH PUTTY—A smooth, easy-working putty made of processed oils which sets firm but is elastic and flexible. Designed principally for application to metal sash.

New wood should be primed with a good grade of ready mixed paint or lead in oil and allowed to dry thoroughly before putty is applied. Do not apply putty at or near the freezing point nor in damp or rainy weather.

Apply putty only to a dry, clean surface free of dirt, moisture, ice, etc.

On old work, sash should be cleaned of all loose putty and paint and primed if necessary.

All sash putties and glazing compounds should be painted to give proper protection and long life and the paint should be applied to extend slightly beyond the edge of the putty forming a seal.

Paint should be applied two weeks to month after the putty has been allowed to dry and set. Too quick painting will retard drying and proper set of the putty and may result in failure of both putty and paint.

OTHER PECORA PRODUCTS ▶

PECORA PECOMASTICS, ROOF COATING, WATER AND DAMPPROOFINGS . . .

PECORA PECOMASTICS

This registered name identifies all Pecora Mastics for glass installations. These mastics are made under several formulae modifications to insure best possible results for specific installations. While general information can be furnished, it is advisable to consult with us, so you may specify and use the material most suited to your purpose.

Field investigation has disclosed seven essential requirements, all of which are incorporated in Pecora Pecomastics. These are: (1) Ease of application; (2) Cleanliness of application; (3) Proper consistency of material; (4) Adhesion; (5) Tensile strength; (6) Waterproofing properties, and (7) Permanent elasticity.

PECORA ROOF-COATING

Pecora Weathertite Roof Coating will make an old leaking roof almost as good as new. Use plastic form for plugging large holes and for repairing corrugated glass and slate. Use liquid form for composition or paper roofs in bad repair, for leaks around nail holes and seams, for pin holes on metal roofs, and for any other kind of roof. Contains no coal tar. Is fire resisting, weatherproof, sunproof, acid and alkali proof. Ten times thicker than a paint film. Costs less per gallon. Much more durable.

PECORA MORTAR STAINS

Uses—Made to be mixed with lime or cement mortar, or with the two combined, for facing exterior or interior brick walls regardless of the type of structure. Also for mantel facings, fireplaces and hearths of brick, tile, marble, slate, or other materials, for pointing or joining stonework and for introducing color tones into exterior "whitewash."

Properties and Advantages—Offered only in form of pulp or paste; manufactured from selected, finely ground ores combined with extenders and fixatives making non-acid solution; "hoe in" with minimum handling and form strong chemical union with the mortar; produce tones that are rich, uniform, fadeproof; do not cause or increase efflorescence; economical.

Colors—Stock shades: Black, Brown, Chocolate, Red, Buff. Special shades made to order.

PECORA WATERPROOFINGS

Klere-Seal Colorless Dampproofing Liquid

Use—For sealing porous or spongy masonry above grade against penetration of water without changing the appearance of the surface. Also used as a priming coat or sealer in porous joints where **Pecora Calking Compound* is to be applied.

Description—A colorless liquid about the consistency of thin varnish, made of the best waterproof colorless raw materials available. It contains no wax or paraffine, and will not discolor any surfaces on which it is applied. Keeps indefinitely in a properly closed package.

Directions—Calk or point all voids in masonry about two days before waterproofing and have the surface clean, warm and dry when "Pecora Klere-Seal" is applied. Brush or spray two coats, allowing an interval between coats of 24 hours. For permanence, renew with one coat every three to five years. Should not be applied in weather lower than 50° F.

Result—Masonry so treated, (and if the "Pecora Klere-Seal" is properly applied under favorable surface conditions) will be unchanged in appearance, and impervious to water.

Covering Capacity—Approximately 150 square feet per gallon, one coat, depending on porosity condition, or 80 square feet—two coats.

*(Booklet on request.)

Note:—Pecora Klere-Seal should NOT be stored in unheated warehouse. Weight per gallon approximately 7 pounds.

Varseal Dampproofing Liquid

Use—For sealing above grade masonry against penetration of water. Especially designed to remedy severe conditions and to give durable results. Should not be used where appearance of masonry color must remain unchanged.

Description—A transparent amber-colored liquid about the consistency of varnish. It is made of the finest gums and oils, and contains no wax or paraffine. Will slightly darken surfaces to which it is applied, but will seal hair-line cracks as well as pores and is capable of holding soft or partly disintegrated mortar together.

Directions for Application—Calk or point all voids in masonry to be treated, two days before waterproofing, and have surface clean, warm and dry when "Pecora Varseal" is applied. Brush or spray two coats, allowing an interval of 24 hours between coats. For permanence, renew one coat every three to five years.

Result—Masonry so treated, (and if the "Pecora Varseal" is properly applied under favorable surface conditions) will be slightly darker in color, and would be impervious to water.

Covering Capacity—Approximately 150 square feet per gallon, one coat,—80 square feet per gallon, two coats, depending on porosity conditions.

Do not reduce the body by use of thinners.

Weight per gallon approximately 7¼ pounds.

Black Asphaltic Waterproofing

(Paste or Liquid Form)

Use—For waterproofing, dampproofing and protecting masonry below or above grade, this is a very versatile product which may also be used as plaster-bond, floor-bonding mastic, calking compound, (where appearance is not important) roof coating, and protective coating for all kinds of building materials. It sets to a dull, rough finish, will bleed through paint, and is not recommended for use where staining is objectionable.

Description—Made of pure rock asbestos fibre, combined with an asphaltic vehicle. It is available in two consistencies, paste and liquid. It is weatherproof, acid and alkali proof and will adhere to all surfaces. When set, is capable of withstanding heavy water pressure. *It contains no coal tar.*

Directions for Application

I—Masonry below grade

Clean surface to be treated so it is free of dust and dirt, and apply a prime coat of "Pecora Black Asphaltic Liquid Waterproofing" which has been thinned to about the consistency of house paint with a volatile thinner. If the conditions are extremely severe, a second coat of "Pecora Black Asphaltic Liquid Waterproofing" (this time without changing it from its factory-made consistency) may be brushed on before applying the final coat. Whether or not the second coat is applied, the final coat should be of "Pecora Black Asphaltic Paste Waterproofing" applied with a trowel to a minimum thickness of $\frac{1}{16}$ in.

II—Masonry above grade

Prepare and prime surface exactly as recommended for below grade, and then apply a final coat of either "Pecora Black Asphaltic Paste or Liquid Waterproofing," depending on the condition of the wall. If it is full of holes, use "Pecora Black Asphaltic Paste Waterproofing" which will fill them; if not, "Pecora Black Asphaltic Liquid Waterproofing" will seal the pores and small cracks.

Result—Masonry treated as directed will be protected from and impervious to water, acid alkali or weather by a tough membrane completely covering the surface to which it is bonded. No more durable protective coating for masonry has ever been developed.

The Pecora Black Asphaltic Paste Waterproofing, is generally applied with a trowel. The covering capacity being approximately 2 square feet per pound—$\frac{1}{16}$ of an inch thick.

The Pecora Black Asphaltic Liquid Waterproofing, is brushed on, using a long handled roofer's brush and being well brushed into all surfaces leaving no voids. The covering capacity of the liquid is approximately 80 square feet per gallon—one coat.

Weight per gallon of the Paste form, approximately 11 pounds.

Weight per gallon of the Liquid form, approximately 9 pounds.

PECORA PAINT COMPANY, INC.

MEMBER OF PRODUCERS COUNCIL INCORPORATED

FOURTH STREET AND ERIE AVENUE, PHILADELPHIA 40, PA.

ESTABLISHED 1862 BY SMITH BOWEN

THE MASTIC GLAZING COMPOUND THAT "SPEAKS FOR ITSELF" — **TREMGLAZE**

HOW TO SPECIFY AND GET MASTIC GLAZING AT ITS BEST WITHOUT INCREASING THE COST OF THE FINISHED JOB!

Paint first——— Then Glaze———

On all steel and wood sash

WITH **TREMGLAZE** MASTIC GLAZING COMPOUND

A color for every job — Does not need to be painted

Tremglaze "paints itself" with a film that is better than paint because it is part of Tremglaze. Painting of steel and wood sash need be done only where needed —on the sash itself—then glazed with Tremglaze in a color suited to the job.

"Cutting in" around lights of glass is eliminated, and this can result in a saving on the painting contract more than enough to pay the additional cost of Tremglaze. Moreover, all painting of sash can be done from the ground and from inside the building, thus eliminating the expense of scaffolds or stages used for painting. This suggestion is no experiment; it has been in use for years and is proved to be a practical procedure.

On ALUMINUM or BRONZE sash . . . Eliminate painting entirely!

Aluminum and bronze sash are distinguished by their ability to endure without being painted. Then why not glaze fine aluminum and bronze sash with Tremglaze Mastic Glazing Compound, which also has distinguished itself through its ability to endure without being painted? Why disfigure one of these fine installations with paint simply to preserve the glazing?

Specify aluminum or bronze sash to be glazed with Tremglaze in *aluminum* or *bronze* color. Save the cost of painting these sash and eliminate unnecessary scaffolding or staging.

This catalog contains condensed information on Tremglaze. A complete Tremglaze brochure with color card and other valuable data is available upon request.

TREMCO

MANUFACTURERS OF QUALITY BUILDING PRODUCTS — THE PRODUCERS' COUNCIL

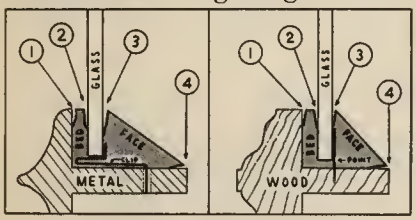
TREMGLAZE

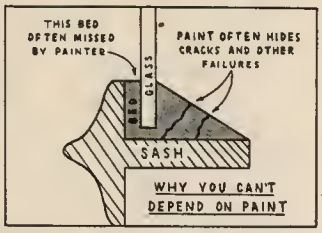
THE TREMCO MANUFACTURING CO., CLEVELAND · TORONTO

THE SOLE PURPOSE OF GLAZING IS TO SEAL GLASS IN THE SASH

Spring clips or glazier's points hold glass in the sash. The sole purpose of glazing is to seal the glass—to keep out moisture and air, to preserve sash against rusting or rotting and to cushion glass against expansion, contraction, and vibration.

Material used for glazing must maintain a perfect seal at four critical points. Its failure to do so means leakage that brings serious damage to sash and further deteriorates the glazing. This is the basic lesson Tremco has observed on thousands of buildings where its field staff has been called upon to correct sash and glazing troubles.





Paint cannot correct faulty glazing. The way to obtain trouble-free glazing is to specify a compound that is self-sufficient and can endure without protection of paint. Specifying Tremglaze Mastic Glazing Compound secures the best in glazing materials and methods, as proved by thousands of Tremglaze jobs over a period of more than 15 years. Moreover, the building owner appreciates the ease with which Tremglaze can be stripped from the rabbet for replacement of broken glass . . . the endurance of Tremglaze under severe conditions such as fumes and high humidity . . . its ability to keep heavy panes of glass free from leaks as in skylight installations.

TREMGLAZE READY FOR THE DOUBLE GLAZED ERA

Tremco was in on the ground floor of double glazing developments, and many of the earliest double-glazed installations are in better condition today, thanks to Tremglaze. Manufacturers of sash for double glazing and fabricators of double-glazed units recognize the need for good glazing and approve or recommend Tremglaze Mastic Glazing Compound.

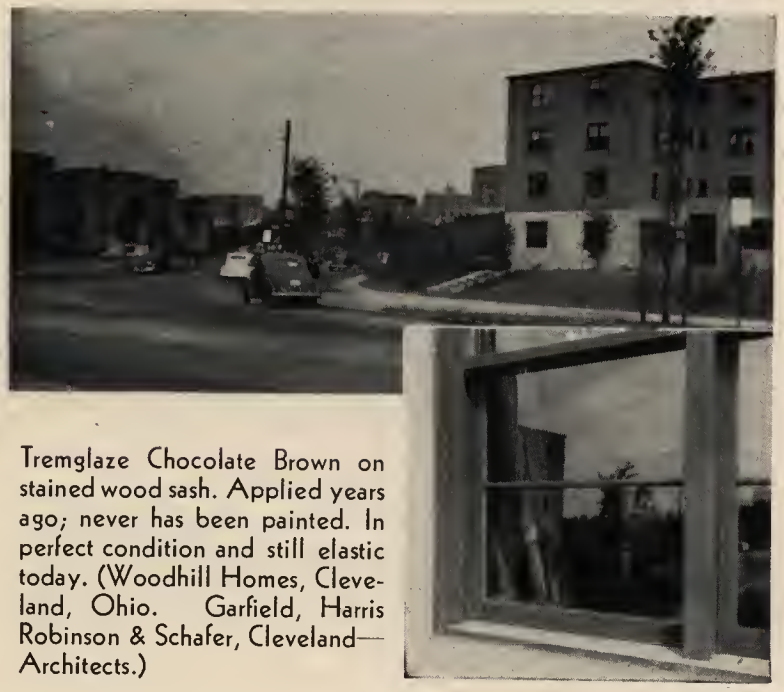
EXCEEDS FEDERAL SPECIFICATIONS

Tremglaze exceeds U. S. Federal Spec. TT-P-781a, Type 1, for elastic glazing compound. It meets the requirements of various state departments and departments of the Dominion Government of Canada.

A TREMGLAZE COLOR FOR EVERY JOB

Tremglaze is furnished in Neutral, Slate, Red, Light Green, Dark Green, Chocolate Brown, Aluminum color, Aluminum Pigmented, Bronze color, and Black.

Not an experiment . . . Proved in practice



Tremglaze Chocolate Brown on stained wood sash. Applied years ago; never has been painted. In perfect condition and still elastic today. (Woodhill Homes, Cleveland, Ohio. Garfield, Harris Robinson & Schafer, Cleveland—Architects.)

THE "PAINT FIRST-THEN GLAZE" TREMGLAZE SPECIFICATION

All glass shall be bedded and face glazed with Tremglaze Mastic Glazing Compound, as manufactured by The Tremco Manufacturing Co., Cleveland, Ohio and The Tremco Manufacturing Co. (Canada) Ltd., Toronto, Ontario. The compound shall be of a color selected by the architect and shall be able to withstand exposure on the sash without being painted.

All painting of the sash (when required) shall be done before glazing, and no painting of the sash shall be done after glazing. The compound shall be especially adapted for glazing (*metal or wood*) sash. (*Insert the type of sash that is applicable.*)

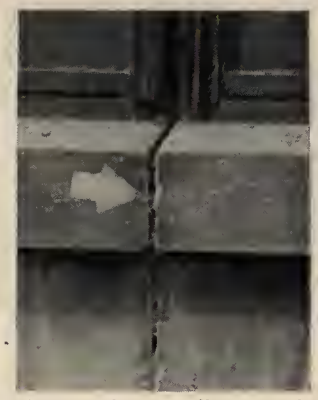
No putty of any kind shall be used, and Tremglaze Mastic Glazing Compound shall be used as the basis for all estimates. Alternative estimates may be submitted separately in the form of additions or deductions to be applied to the base bid, if such alternative material is adopted.

(Optional)—If the contractor should prefer to use an elastic glazing compound of other manufacture, he shall furnish satisfactory evidence that the material submitted for approval meets the standard set forth herein in both quality and workability, and that it has been used with satisfactory results on jobs of no less than 7 years' standing under comparable conditions, without being painted over.

SPECIFY TREMCO CAULKING AND POINTING COMPOUND BY NAME

Tremco's field staff of trained maintenance specialists see first hand the damage and trouble resulting from inadequate caulking and pointing protection. They have gained invaluable experience helping owners of existing buildings overcome costly mistakes that could have been avoided during their construction.

For more than 15 years this experience has been applied on new buildings of all types. Federal, state, municipal, and private construction projects have benefitted from Tremco recommendations. From Tremco's experience in the maintenance field and their experience in new construction has come this lesson—to specify good caulking and pointing compound by name; it doesn't pay to take a chance.



A nameless caulking and pointing compound.

Tremco Caulking and Pointing Compound

TESTED AND ACCEPTED ON FOURTEEN NECESSARY REQUIREMENTS

Here are 14 requirements which a caulking and pointing compound must meet in order to last and be 100% satisfactory. Meeting half of them is not enough; all are important. Tremco Caulking and Pointing Compound meets all of these requirements:

1. Does not dry out or become brittle.
2. Adheres to metal, masonry, glass, wood.
3. Extremely low shrinkage factor.
4. High expansion and contraction factor.
5. Waterproof and weather-resisting.
6. Will never sag because of high temperatures.
7. Will not stain porous stone or other masonry surfaces with which it comes in contact.
8. No priming of the surface is required.
9. Will not corrode metal of any kind; prevents corrosion.
10. Repels soot and dirt. Forms a smooth, non-tacky surface.
11. Attractive in appearance; smooth, clean looking.
12. Consistency is always uniform.
13. Easy to apply in a neat bead.
14. May be painted over but not necessary unless painting is desired.

Above—After a pointing failure, water freezing in the open joint caused this crack.

Right—Tremco Caulking and Pointing Compound after ten years; still "alive" and elastic.

CONFORMS TO FEDERAL SPECIFICATIONS

Tremco Caulking and Pointing Compound conforms to U. S. Federal Specification TT-C-598.

CONDENSED CAULKING AND POINTING SPECIFICATIONS

Caulking—"All surfaces to receive caulking shall be dry and thoroughly cleaned of all loose particles, dirt, dust, oil, grease, or other foreign matter.

"The space between masonry and the outside of the frames, around jambs, heads, and sills, shall be filled with Tremco Caulking and Pointing Compound, as manufactured by The Tremco Manufacturing Co., Cleveland, Ohio and The Tremco Manufacturing Co. (Canada) Ltd., Toronto, Ontario. Where openings are more than ¾ in. in depth, joints shall be filled with picked oakum to within ¾ in. of the surface before caulking." (Substitute mop yarn for oakum where same will contact light colored stone.)

Pointing—"All contact surfaces shall be dry and thoroughly cleaned of all loose particles, dirt, dust, oil, grease, or other foreign matter.

"All exposed joints in the washes of cornices, roofs, gutters, and curbs, projecting courses, belts, top and blocking courses, and copings; joints in chimney caps and cap stones; and joints around the perimeter of same, and all horizontal joints immediately above such surfaces and stones, shall be pointed with picked oakum to within ¾ in. of surface and filled solid with Tremco Caulking and Pointing Compound, as manufactured by The Tremco Manufacturing Co., Cleveland, Ohio and The Tremco Manufacturing Co. (Canada) Ltd., Toronto, Ontario." (Substitute mop yarn for oakum where same will contact light colored stone.)

"Tremco Caulking and Pointing Compound shall be used as the basis for all estimates. Alternative estimates may be submitted separately in the form of additions or deductions to be applied to the base bid, if such alternative material is adopted."

AUGMENT CAULKING AND POINTING WITH EFFECTIVE DAMPPROOFING

Surface absorption of moisture by exterior masonry above grade may bring a variety of undesired results, such as spalling and chipping by frost action, untimely soiling of light stone, and even leaks to the interior. Infiltration is also a cause of efflorescence.

Tremco 145 Clear Dampproofing is a modern, effective, water-clear preparation which can be applied in one coat. It seals the pores of stone, cast stone, concrete, brick, and other porous masonry surfaces. Its effect upon appearance of the surface is no more than results from the wetting action of water.

SHORT SPECIFICATION

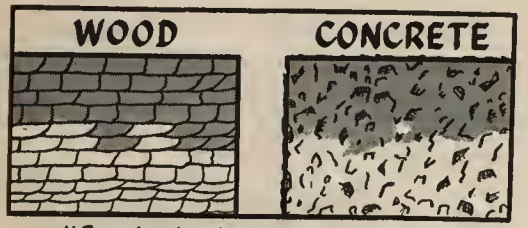
Dampproofing—"The surface shall be cleaned free from all dust, dirt, and foreign matter and shall be absolutely dry. Several days of warm weather shall elapse after a rain before application. Application of dampproofing shall be made after caulking and pointing.

"Application shall be made, preferably by brush, continuously in one coat, until the porosity is entirely satisfied. The material shall be Tremco 145 Clear Dampproofing, manufactured by The Tremco Manufacturing Co., Cleveland, Ohio and The Tremco Manufacturing Co. (Canada) Ltd., Toronto, Ontario."

Protected against infiltration through caulking, pointing, and dampproofing with Tremco materials.

"Application shall be made, preferably by brush, continuously in one coat, until the porosity is entirely satisfied. The material shall be Tremco 145 Clear Dampproofing, manufactured by The Tremco Manufacturing Co., Cleveland, Ohio and The Tremco Manufacturing Co. (Canada) Ltd., Toronto, Ontario."

HARDEN CONCRETE FLOORS, SEAL WOOD FLOORS—WITH PENETREM



"Case hardens" wood and concrete.

Concrete floors that wear and dust away—wood floors that splinter and break down under foot and wheel traffic—both gain greatly in life and serviceability when treated with Tremco's Penetrem. Penetrem penetrates the pores of concrete, the cell structure of wood, to reinforce and harden the surface. Appearance, sanitation, and ease of cleaning are greatly improved. Consider Penetrem for the industrial floor or the fine floor of exacting appearance requirements.

SPECIFICATIONS

Concrete Floors—"All concrete floors, after being thoroughly dried and before being put into service, shall be treated with two coats of Penetrem, as manufactured by The Tremco Manufacturing Co., Cleveland, Ohio and The Tremco Manufacturing Co. (Canada) Ltd., Toronto, Ontario."

Industrial Wood Floors—"All wood floors, before being put into service, shall be thoroughly cleaned and treated with two coats of Penetrem, as manufactured by The Tremco Manufacturing Co., Cleveland, Ohio and The Tremco Manufacturing Co. (Canada) Ltd., Toronto, Ontario."

For finer appearance, longer wear on wood floors—"All wood floors shall be sanded and given two coats of Penetrem, as manufactured by The Tremco Manufacturing Co., Cleveland, Ohio and The Tremco Manufacturing Co. (Canada) Ltd., Toronto, Ontario. After each coat is dry, including the finish coat, it shall be burnished with steel wool."

DAMPPROOFING AND BONDING PLASTER TO CONCRETE CEILINGS

The reasons for the failure of plaster to bond to concrete ceilings are—efflorescence, vibration, unequal rate of expansion and contraction between concrete and plaster, laitance, and smoothness of surface.

Tremco 202 Ceiling Plaster Bond overcomes these obstacles by securing an elastic, dampproofing, tenacious bond between the ceiling and the plaster coats. Its use eliminates the scratch coat normally employed, and plaster may also be bonded to surfaces other than concrete.

SPECIFICATION

Bonding of plaster—"Ceiling plaster shall be bonded and dampproofed by means of Tremco 202 Ceiling Plaster Bond, as manufactured by The Tremco Manufacturing Co., Cleveland, Ohio and The Tremco Manufacturing Co. (Canada) Ltd., Toronto, Ontario, and in accordance with engineering data furnished by the manufacturer."

For complete architectural data on these and other quality materials, write

THE TREMCO MANUFACTURING CO.
8701 Kinsman Road Cleveland 4, Ohio
In Canada — The Tremco Manufacturing Co. (Canada) Ltd., Toronto, Ontario

A luminous structural medium for windows, walls, partitions.

7c/2

TEMPREX GLASS STRUCTURAL BLOCKS

REG. U S. PAT. OFF

livingwall

THE WALL THAT ACTUALLY GLOWS WITH LIGHT!!!

LIVINGWALL answers the fundamental architectural need far a luminaus glass partitian ar window wall that functions as an integral part of the building structure . . . yet may readily be illuminated from within. Made of TEMPREX glass and aluminum, LIVINGWALL is fire-resistant, saund-proof, fully insulated and virtually unbreakable. As interiar partitians they may be free standing, ceiling high, or railings; all erection is "dry wall" without martar permitting alteratians to be effected with 100% reclaiming of the original blocks. The inside panels af the LIVINGWALL are easily removable for display. The autside panels are permanently sealed in at the factory ta pravide an air and watertight jaint.

TEMPREX Structural Blocks are self supporting units assembled ecanamically and quickly with no skilled labor required. A simple interlacking key jains the Blocks securely tagether both vertically ond horizantally resulting in a rigid sturdy wall structure. For exterior wolls a caulking space ½" wide by 7/16" deep is pravided when Blacks ore joined.

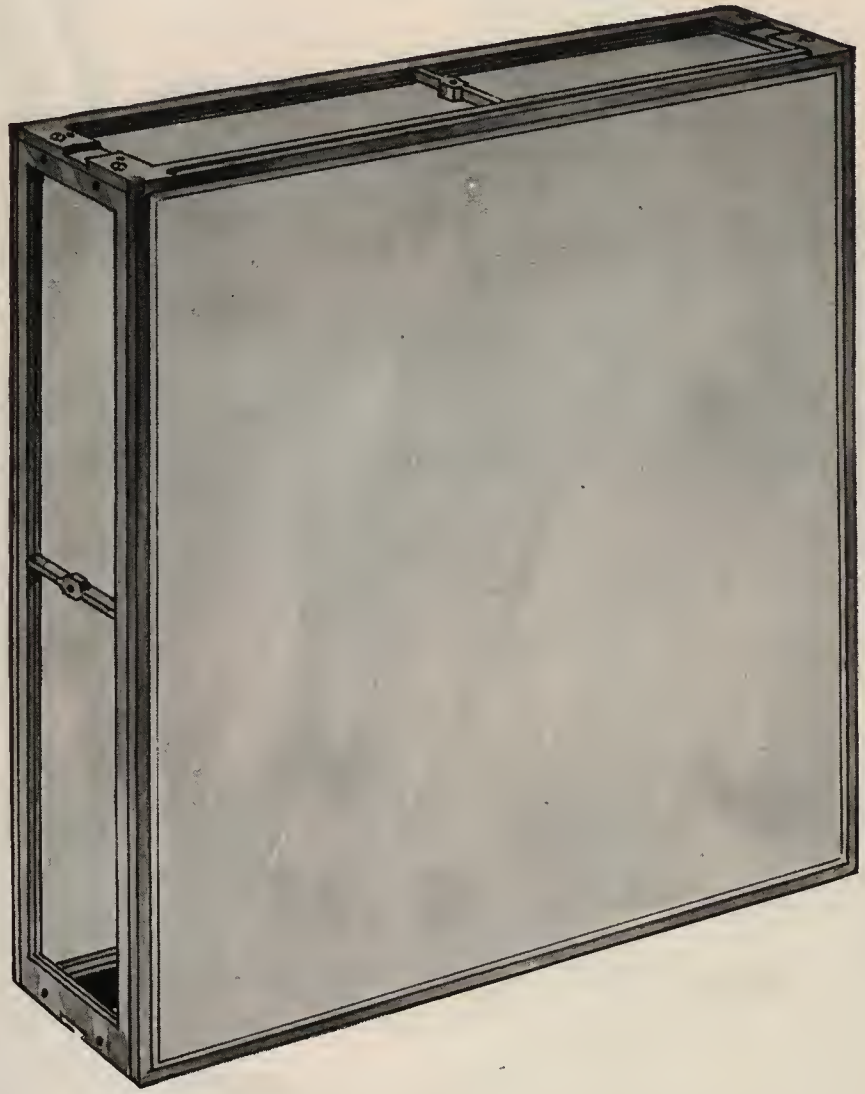
HOMES **OFFICES** **STORES**

FACTORIES **SCHOOLS** **CHURCHES**

Appleman Art Glass Works **Bergenfield, N. J.**

TEMPREX GLASS STRUCTURAL BLOCKS

REG. U. S PAT. OFF.



TEMPREX Glass Structural Blacks are self supparting units which are erected withaut the use of any cementing agent to form wall ta wall picture windows, inside walls and partitians. The Black is a camposite madule unit cansisting af a die cast aluminum frame 20" square by 3⅞" deep and two panes af 7/32" TEMPREX glass 19½" square. One of these panes is permanently sealed in at the factory ta pravide an air and watertight jaint; the other pane is removeable. This feature pravides the basis far many decarative as well as practical applications af this versatile praduct.

Both panes af clear ar both of diffusing TEMPREX are standard equipment; alsa ane pane clear in combination with ane diffusing. Far decorative wall effects there are 4 standard patterns available—Pyramid, Disc, Fret, Mode. Each design is permanently fire-fused in a neutral warm gray tint on an off white apal translucent background; also in mural effects and special calar cambinatians upan request.

TEMPREX GLASS is a product of wartime research and results fram a special pracessing technique af scientifically heat treating glass. This tempering process gives TEMPREX GLASS many impartant advantages aver ordinary glass, such as greater strength and a substantial increase in its resistance ta shocks. TEMPREX GLASS is nat affected by varying surface temperatures, resisting thermal shack ar impact at sub-zero as well as high temperatures. When TEMPREX GLASS daes reach its limit of resistance to abnarmal thermal shocks or impact it still has a factar of safety which ardinary glass daes not possess. It daes nat break in sharp fragments, but disrupts into small, comparatively blunt edged particles.

TENSILE STRENGTH

Weight Suppart—Temprex glass will support almast five times as much weight as ardinary glass. The tensile ultimate of Temprex glass is 30,000 lbs. per sq. inch of cross sectian as against 6,500 lbs. average for ardinary glass.
Fatigue Praaf—Temprex glass can be twisted at an angle in excess of 20 degrees which is an indicatian of its surprising flexibility and elasticity.

IMPACT RESISTANCE

The tempering pracess relieves Temprex glass of strain. This results in its being extremely resilient.
By camparisan Temprex glass has a resistance ta impact seven times greater than ordinary glass . . . for example, Temprex glass will nat break if a steel ball is dropped on it fram a height of five feet. Ordinary glass will shatter if the same ball is dropped on it from a height of only a few inches.

THERMAL SHOCK

Temprex glass will withstand in excess of five times as much heat as ordinary glass without breakage. It will withstand in excess af 650 degrees F. Therefore, Temprex glass may be considered fire retardent. Tests have praven that 650 degrees F. can be applied to one surface af Temprex glass while the other surface is at normal atmospheric temperature.

Many decorative and practical lighting effects are achieved with

TEMPREX GLASS STRUCTURAL BLOCKS

REG. U. S. PAT. OFF.

TEMPREX Structural Block LIVINGWALL used as an outside picture window with decarative abjects placed inside the blocks. A practical feature is that windows to open can be set into the autside LIVINGWALL as shawn. LIVINGWALL also used as an inside partitian between kitchen and breakfast noak. If desired this LIVINGWALL partitian may be readily illuminated to light twa raams with the same current.

This dining raam interiar shaws an effective use af patterned LIVINGWALL TEMPREX Structural Blocks in cambinatian with a graup of Blocks fitted with clear TEMPREX panes ta farm a window. At night the patterned section can be illuminated.

TEMPREX Structural Block LIVINGWALL is ideal for canstruction af affice partitians by virtue of it being assembled "dry", withaut cement, thus making it removeable. Alteratians are easily effected with 100% reclaiming of the original Blacks. Individual Blacks ar graups af Blacks may be used in the Walls af carridars far displaying samples of merchandise. Note the attractive TEMPREX glass doors which are a companion unit to the TEMPREX Blocks.

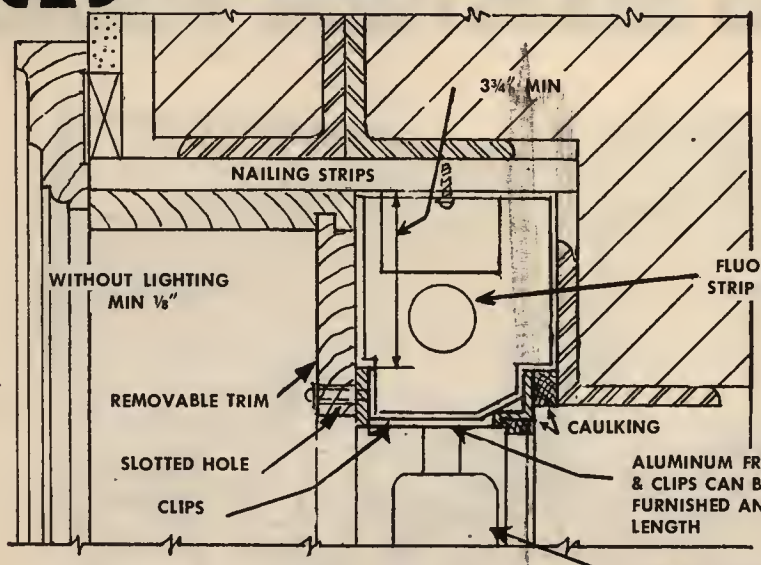
Far canstruction of a starefrant the TEMPREX Structural Blacks find many useful applicatians. Individual blacks make small distinctive display windaws and graups of Blocks can make an entire LIVINGWALL display front. The Black may also have firm name ar business permanently fired inta the inner ar outer panel as illustrated.

Appleman Art Glass Works

GLASS STRUCTURAL BLOCKS • HEAD, JAMB, AND SILL DETAILS

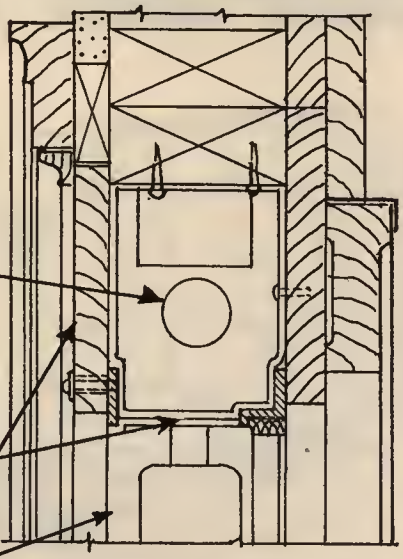
SCALE 3" = 1'-0"

MASONRY WALLS

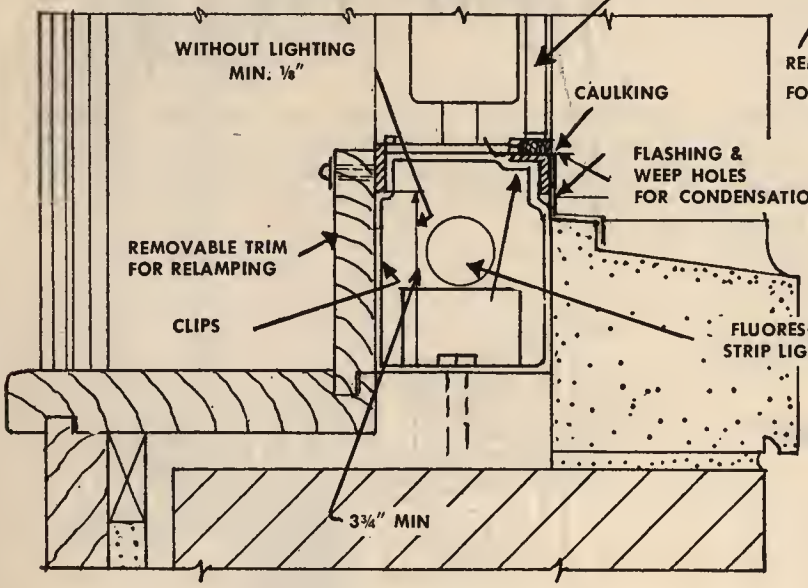


HEAD SECTION
JAMB SIMILAR

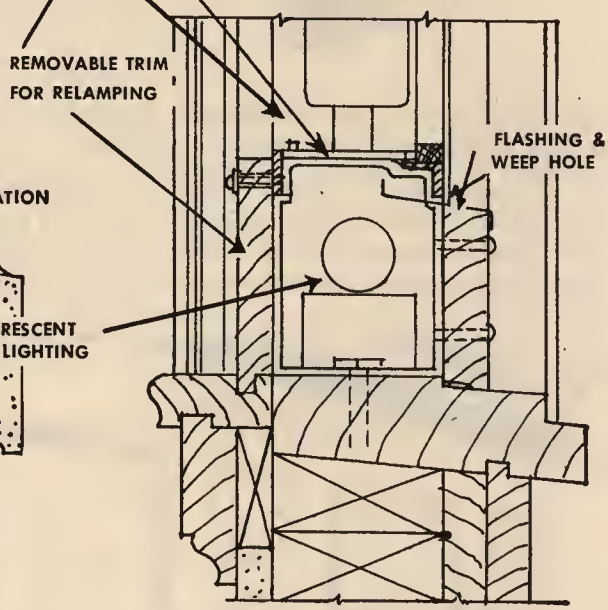
WOOD FRAME



HEAD & JAMB SECTION



SILL SECTION



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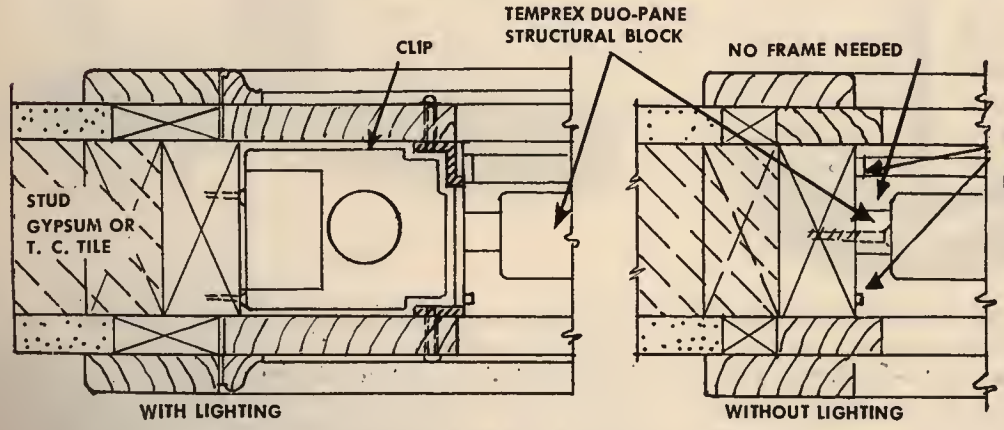
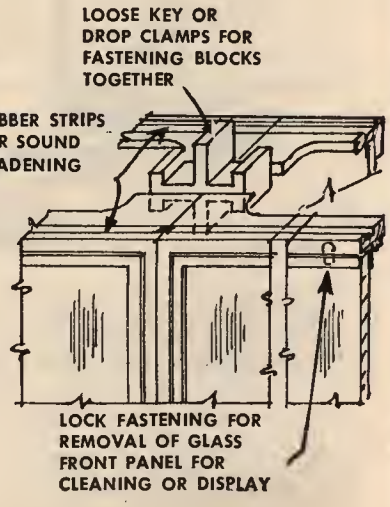
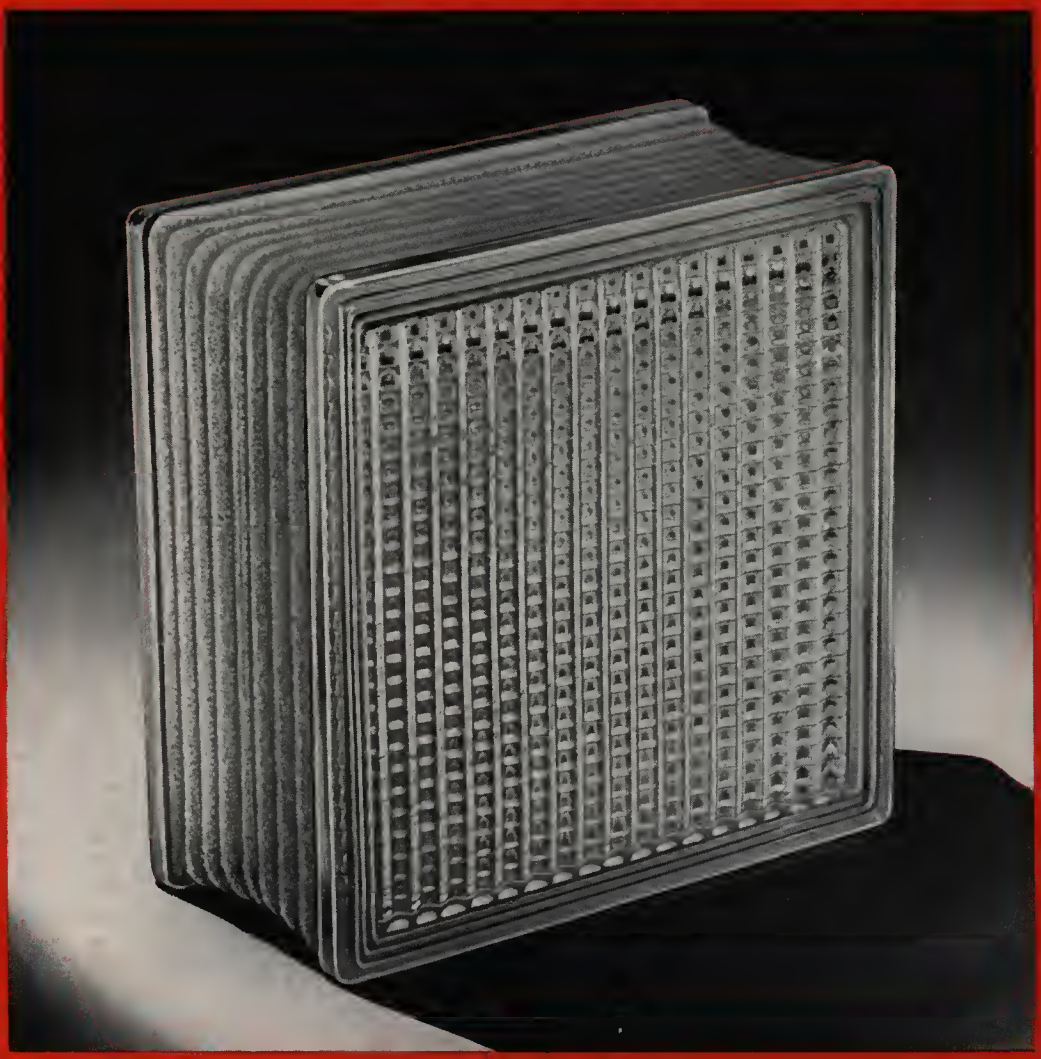




HEAD, JAMB, AND SILL
INTERIOR PARTITIONS

Appleman Art Glass Works **Bergenfield, N. J.**

7c-
1



INSULUX

GLASS BLOCK

AMERICAN STRUCTURAL PRODUCTS COMPANY

TOLEDO 1, OHIO

SUBSIDIART OF OWENS-ILLINOIS GLASS COMPANY

GENERAL 1949 CATALOG

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Designed by Architects Holabird and Root, this 11-story unit of Illinois Bell Telephone Company's long distance switching center will house intricate costly equipment. Insulux will provide daylight, the insulation necessary for economical air conditioning, and help block out dust and dirt in this structure planned to be built at Clark and Congress Streets, Chicago, Illinois.

Basic Properties of Insulux Glass Block

Insulux Glass Block is used in thousands of buildings because of its superior light transmitting characteristics, its high insulation value, low sound transmission, its capacity to reduce air infiltration, and because of its permanence and low maintenance.

Light—Because Insulux Glass Block is a hollow glass unit having four surfaces into which designs can be impressed, it can be designed and made to direct and control the light which it transmits.

Insulation—High insulation value is an advantage in both summer and winter. Heat loss through glass block is less than half of that through windows. This means lower heating costs, greater comfort and less condensation on glass areas.

In summer, Insulux transmits less than half as much solar heat as single-glazed sash.

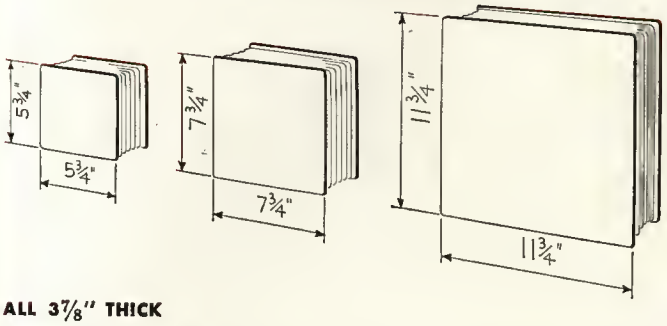
Permanence and Low Maintenance — Glass Block panels are built of durable glass and mortar with some steel reinforcing—minimum exposed steel, nothing to rot or corrode. They require no painting.

Infiltration — Properly installed, Insulux Glass Block panels eliminate almost all the infiltration of air, dust and dirt, thus reducing interior maintenance costs.

Sound Transmission—Glass block has a sound reduction factor that approximates the better class of fireproof partitions typically used in fireproof buildings.

For detailed technical information see Pages 11, 26 and 27.

Three Standard Sizes



ALL 3⅞" THICK

Insulux Glass Blocks are made in three sizes: 5¾" square, 7¾" square and 11¾" square, with supplementary corner and radial blocks.

Laid with ¼" mortar joints, these sizes conform to accepted modular design systems. For complete information on designs and sizes, see pages 12 and 13.

Two Ways to Erect

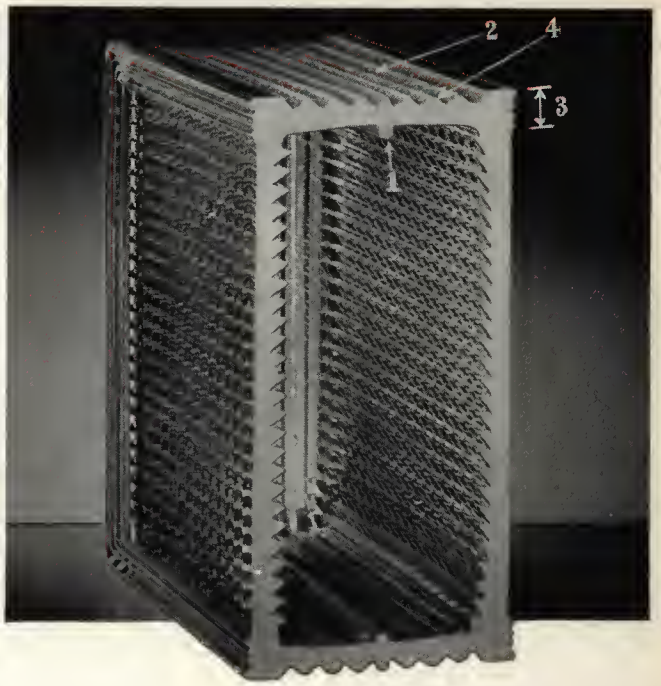
1. SET-IN-MORTAR

The common method of erecting both interior and exterior panels of Insulux Glass Block is to lay the blocks in mortar. Their corrugated edges and rough mortar bond coating give the block a good "grip" on the mortar, making them easy to lay. When set, the corrugations have a greater contact with the mortar than a straight surface, thus making a strong panel. Full details in specifications on pages 24 and 25.

2. SET-IN-WOOD

(For Interior Partitions Only)

A prefabricated construction system, "Insulux set-in-wood", may be used in place of the conventional mortar for the erection of glass block in interior partitions. While panels so constructed do not have all the advantages—such as a high sound reduction value and fire resistance—that panels set in mortar have, the system does permit easy dismantling and re-erection with complete salvage of block (see page 23 for erection details).



CROSS-SECTION OF BLOCK

1. Partially evacuated and hermetically sealed unit.
2. Corrugated bearing edges.
3. Rim prevents edge glare.
4. Mortar bond coating.

Description

Insulux Glass Block is a hollow, partially evacuated block made of water-clear pressed glass, hermetically sealed when manufactured. It is coated on the corrugated mortar-bearing surfaces with a gritty mortar bond.

Insulux Glass Blocks are made in a variety of designs for functional, decorative or general-purpose use. Functional blocks control the direction of light as well as distribution and diffusion. Decorative blocks are used where design is most important. General-purpose blocks are for use where direct light transmission is required.

Acceptance

Characteristics of Insulux Glass Block have been investigated at Purdue, Columbia, Leland Stanford, Jr., and Michigan universities, the National Bureau of Standards and the Underwriters' Laboratories, Chicago. Official approval conforming to Insulux specifications has been given by code authorities in most cities and states; some West Coast codes require smaller panel areas and additional reinforcing.

Southwark Station newest link in Philadelphia Electric Co.'s chain of generating stations, is a model of advanced power plant design. One important construction feature is the use of almost 30,000 Insulux Glass Block. Ease of maintenance and permanence were deciding factors in this choice. Design by Philadelphia Electric Engineering Dept. with Paul Cret Associates consultants. General contractor: United Engineers & Constructors, Inc.

Milcor Steel Company at Baltimore, Md. Architects, James R. Edmunds, Jr., and Howard G. Hall.

Miles' Laboratories—well known manufacturer of proprietary medicine, Elkhart, Ind. Insulux Nos. 351 and 350 used.

Kansas Flour Mills—North Kansas City, Mo., recently replaced all their out-worn windows with Glass Block Panels.

Diesel Repair Shops of the Burlington Lines, at Clyde, Ill.
Architect, C. B. & Q. Engineering Dept.

Light—Designers of Industrial Buildings can give their clients beneficial, economical daylight with Glass Block, and still maintain adequate control of inside temperature and humidity. No shading is required—daylight distribution is uniform, excessive glare is eliminated and shadows reduced to a minimum.

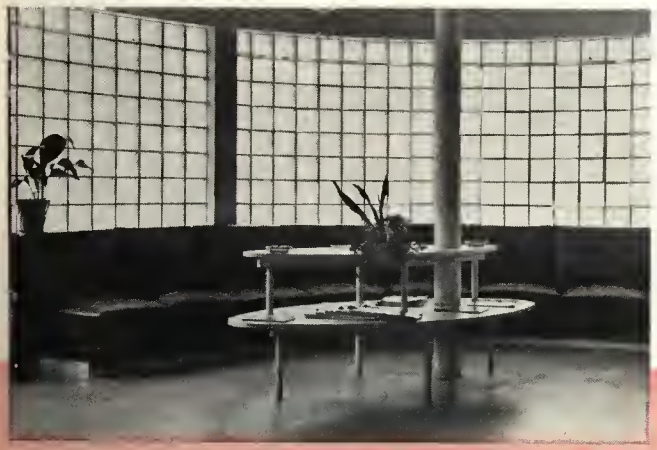
Grainer Room of International Salt Co. at Watkins Glen, N. Y., is well daylighted with Insulux. Despite corrosive atmosphere, glass block won't rot rust nor corrode.

Dean Milk Company, Huntley, Ill., interior and exterior. Permanence, sanitation *and* daylight. Architect, Victor L. Charn, Chicago.

Offices of Artek Pascoe, New York City. Ketchum, Gina & Sharp, N. Y. C., Architects.

Fourth Northwestern National Bank, Minneapolis, Minn. Architects and Engineers, Lang and Raugland, Assoc., J. A. Brunet and A. H. Lange.

Privacy—Because it transmits light without sacrifice of privacy, Glass Block is ideal for offices and partitions. Small rooms can be made to seem more spacious and cheerful by building one or more walls of Insulux:



Waiting Room, Women's Clinic at Seattle, Wash.

Rodio Stotion KSOO, at Sioux Falls, S. D., uses Insulux in its studios—because of high sound-retarding qualities.

Bakersfield Sandstone Brick Co., Bakersfield, Cal.. Architect, Chas. H. Biggar & Associates.

Offices of B. F. Goodrich Company, Cleveland, Ohio. Architect, Bonfield & Cumming.

Easily Maintained— The easy-cleaning qualities of Insulux promote a high degree of sanitation and cut redecoration costs. It keeps out dust and dirt, thus lowering losses through spoilage.

Poulsen & Nardon, Inc., Los Angeles, California. Architects & Engineers, The Austin Company, of Cleveland.

Three views of a Chicago apartment house using a glass block "screen" over stairs. Gives light without loss of privacy.

Apartment Building at 6107 N. Cicero, Chicago, Illinois. E. L. Anderson Company, Designers and Builders, Chicago.

Bakersfield Hall of Records, Bakersfield, California. Architect, Frank Wynkoop.

Hutsonville, Ill., Power Station. Engineers, Sargent and Lundy, Chicago, Ill.

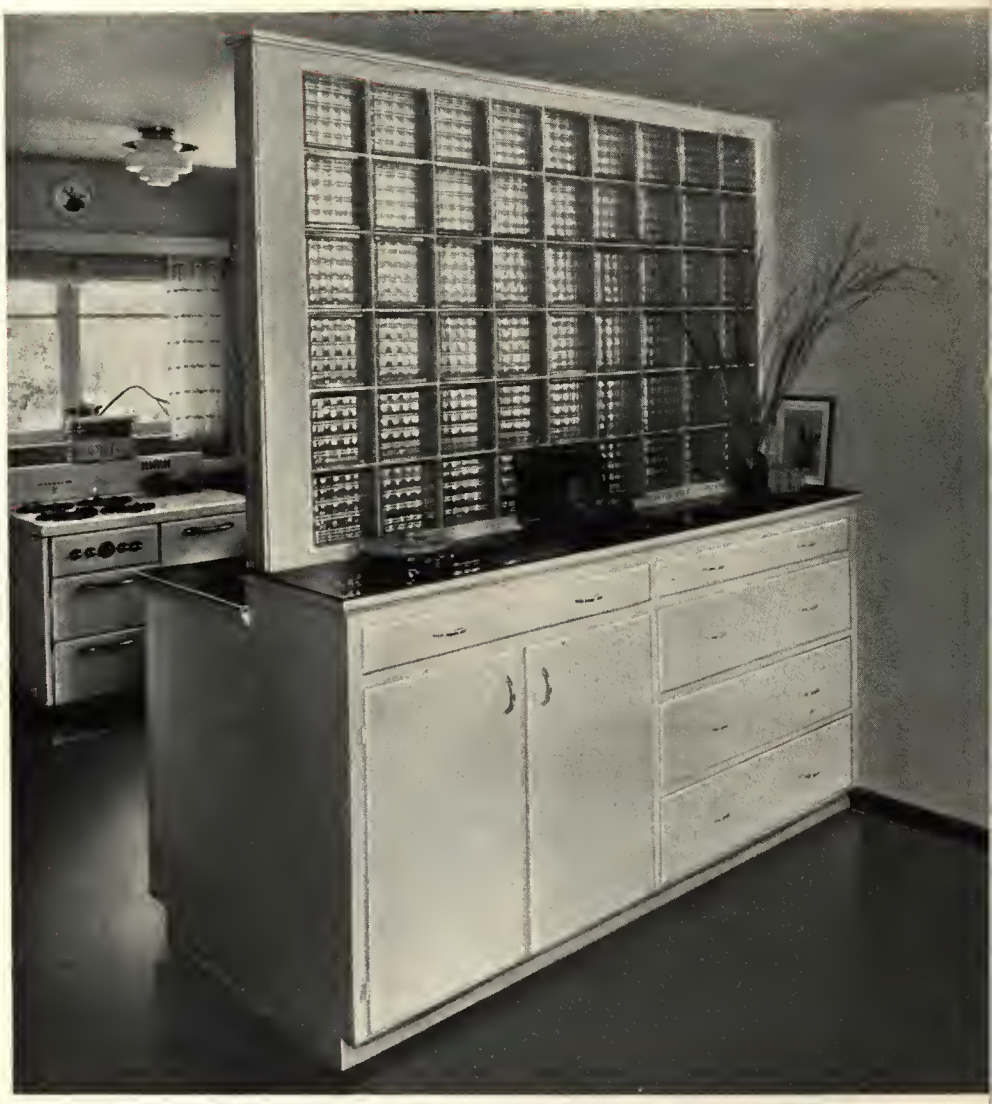
Public buildings, hospitals, power plants, filtration plants, armories, sewage disposal plants and service buildings find Insulux a permanent material that requires little or no maintenance.

Croyden Apartments, Washington, D. C. Architects, Berla & Abel, Washington.

Sylacauga Hospital, Sylacauga, Ala. Architect, Chas. H. McCauley, Birmingham.

In the bath, Insulux is easy to clean. Ribbed-face blocks assure complete privacy.

Brighter Homes with Insulux Glass Block. Used in combination with windows it provides privacy—yet allows the larger total glass areas needed for modern and cheerful living.



Kitchens are lighter, brighter with easy-to-clean Insulux over the stove, over the sink or as a light-giving partition between kitchen and dinette.

Basement Recreation Room can be lighted with panels of glass block set in area-ways.

Stair-landings and hallways with Insulux are cleaner, lighter—have fewer chilling drafts.

Interior Oakdale Christian School, Grand Rapids, Michigan. (Photo taken with supplementary lighting).

Swimming Pool at Culver Military Academy at Culver, Indiana.

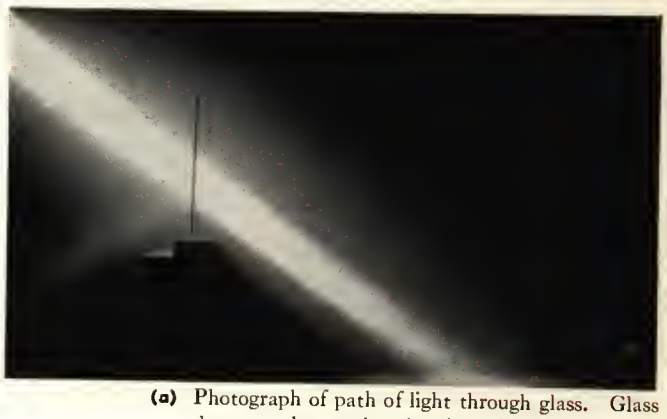
Schools. The No. 351 glass block, the prismatic block described on the following page, is recommended as the best means of bringing daylight illumination into school classrooms. It is used above a clear vision strip as illustrated above. It is recommended as preferable to other constructions because the No. 351 block directs its principal illumination toward the ceiling at all sun altitudes. It thus tends to put a greater proportion of its illumination deep into the room, and it produces more even light distribution. Most important, it reduces interior brightness contrasts to a ratio much lower than that achieved with conventional constructions. For full information on this use of glass block see *Daylight in School Classrooms*. Write for a copy if you do not have one.

It resists breakage and gives evenly-distributed daylight for gyms, fieldhouses and auditoriums.

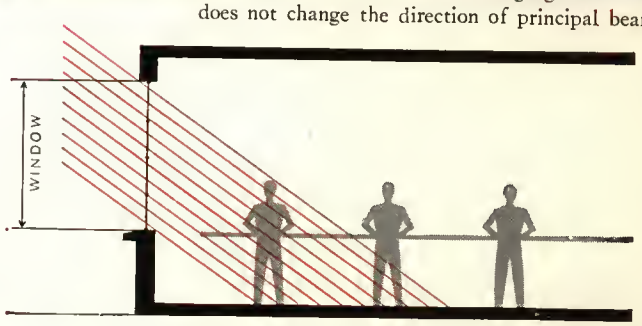
Exterior Oakdale Christian School, Grand Rapids, Mich. Architect is James K. Haveman, Grand Rapids.

Utilization of Daylight

The problem of utilizing daylight is illustrated in (a) and (b) at the right. Photograph (a) shows a beam of light passing through a single sheet of glass, which does not control or change the direction of the light. Diagram (b) shows the effect of such lighting: too much light near the outside wall, too little at the far side of the room. To reduce the light to a brightness that can be tolerated, shading, painting or figured glass have been used as control methods. The result: questionable glare control, poor distribution and greatly reduced illumination.



(a) Photograph of path of light through glass. Glass does not change the direction of principal beam.



(b) Light through window or unglazed opening. Distribution uneven. Shading is required to reduce glare.

No. 351 Prismatic Block

A new approach to the problem has been made by research at the University of Michigan. By utilizing the four faces of a glass block, patterns have been developed for accurate daylight control.

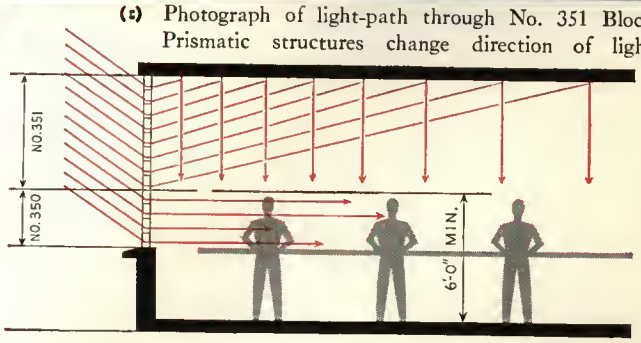
Picture (c) shows how prismatic block No. 351 changes the direction of the light, turning it upward. Picture (e) at left shows how block No. 350 diffuses light. Diagram (d) illustrates how these two blocks control light in a room. The No. 351 block used in the upper part of the panel direct the light toward the ceiling. The ceiling acts as a huge reflector to re-direct the light downward to the working surface. Because most of the light transmitted by this block is directed upward, the block viewed from below has a greatly reduced brightness.

(c) Photograph of light-path through No. 351 Block. Prismatic structures change direction of light.

No. 350 block spreads light evenly through horizontal plane.

No. 350 Block

Since the No. 351 block is designed for use only above the eye level, the lower part of the panel is constructed of Block No. 350. This block transmits somewhat less light than No. 351 but has a low brightness regardless of its location (high or low) in the panel.



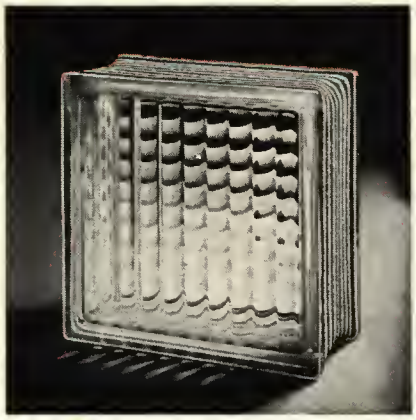
(d) Red lines show how a combination panel of blocks No. 350 and No. 351 directs light. Light is well distributed, brightness of the lighting source, the panel, greatly reduced. Windows may be substituted for No. 350 block in the lower part of the panel if vision required.

Insulux Glass Blocks No. 350 and 351 are recommended for offices, laboratories, precision manufacturing plants and classrooms, or wherever lower brightness and control of daylight are of maximum importance. To secure the maximum efficiency with these blocks, upper walls and ceilings should be light in color. They are manufactured in 7¾" size only. Where less precise light control is needed, other Insulux designs with different light characteristics may be used (see pages 12 and 13).

DESIGNS, SIZES AND DESCRIPTION

DESIGN NO. 7

An easily-cleaned, smooth-face block with parallel convex ribs on both interior faces. Gives high light transmission, limited privacy. No matching corner. Use corners 216-C, 316-C, Radial 316-R. Lay exterior ribs vertical to match corners and radials.



DESIGN NO. 16

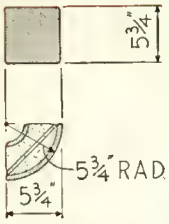
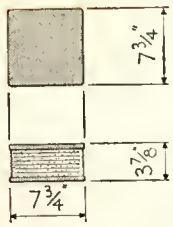
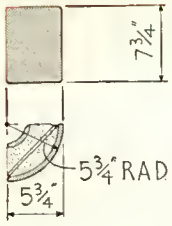
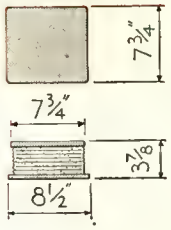
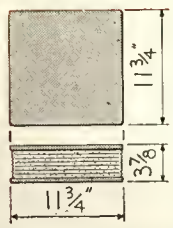
A smooth-face block with convex interior ribs running vertically one face, horizontally on the other. For decorative and lighting effects. Gives a fair degree of privacy. Lay exterior ribs vertical to match corners No. 216-C, 316-C and radial No. 316-R.

DESIGN NO. 17

A highly decorative, smooth-face block with concave flutes running vertically one face, horizontally on the other. Gives high light transmission with very limited privacy. Lay exterior ribs vertical to match corner No. 217-C, 317-C and radial 317-R.

No. 207—5¾" x 5¾" x 3⅞"	No. 216—5¾" x 5¾" x 3⅞"	No. 217—5¾" x 5¾" x 3⅞"
No. 307—7¾" x 7¾" x 3⅞"	No. 316—7¾" x 7¾" x 3⅞"	No. 317—7¾" x 7¾" x 3⅞"
No. 407—11¾" x 11¾" x 3⅞"	No. 416—11¾" x 11¾" x 3⅞"	No. 417—11¾" x 11¾" x 3⅞"

BLOCK DIMENSIONS

	SQUARE	CORNER	RADIAL
200 SERIES 5¾"x5¾"x3⅞"			
300 SERIES 7¾"x7¾"x3⅞"			
400 SERIES 11¾"x11¾"x3⅞"		Use two 200 Series Corner Blocks	

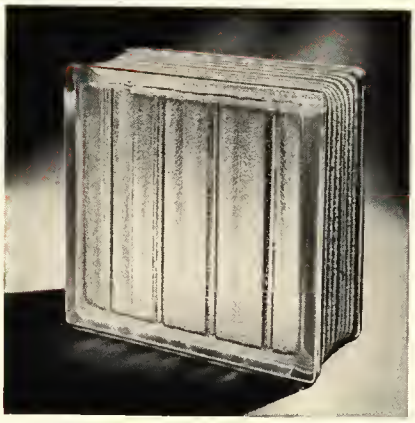
CORNER BLOCKS

Designs to match standard block patterns listed below. Made in 5¾" and 7¾" heights only. All ribs are vertical on exterior faces. Use two 5¾" high blocks with the 11¾" x 11¾" blocks.

200 SERIES (5¾"x5¾")	300 SERIES (7¾" x 7¾")	400 SERIES (11¾" x 11¾")
216-C	316-C	USE TWO
217-C	317-C	200 SERIES
230-C	330-C	CORNER
240-C	340-C	BLOCKS
	350-C	

DESIGN NO. 30

A smooth-face, highly decorative pattern with high light transmission but a low degree of privacy. Distinctive design permits laying without regard to pattern. Has matching corner blocks, No. 230-C and 330-C.



DESIGN NO. 40

A ribbed face block offering a very high degree of privacy. Face ribs are shallow for easy cleaning. All four faces have parallel ribs. Both interior faces have stippled surfaces. Lay with ribs vertical to match corner blocks No. 240-C and 340-C.

DESIGN NO. 370

Both interior and exterior faces are smooth to permit a limited degree of vision thru the block. May be inset in other patterns for general vision to the outside, but must be shaded when used on sun exposures. In one size, 7¾" x 7¾" x 3⅞" only.

▼ No. 230—5¾" x 5¾" x 3⅞"
No. 330—7¾" x 7¾" x 3⅞"
No. 430—11¾" x 11¾" x 3⅞"

▼ No. 240—5¾" x 5¾" x 3⅞"
No. 340—7¾" x 7¾" x 3⅞"
No. 440—11¾" x 11¾" x 3⅞"

▼ No. 370—7¾" x 7¾" x 3⅞"

RADIAL BLOCKS

Designs to match standard block patterns listed below. For use with 7¾" standard blocks only. Minimum radius 2'-5". Ribs vertical on long face. May be combined with standard blocks on long radii to reduce cost.

200 SERIES (5¾" x 5¾")	300 SERIES (7¾" x 7¾")	400 SERIES (11¾" x 11¾")
NOT M'FD.	316-R 317-R 330-R 340-R 350-R	NOT M'FD.

DESIGN NO. 350

Ribbed-face—designed primarily for severe sun exposures. Complete privacy. Use alone or combine with No. 351. Lay with exterior ribs vertical. One size: 7¾" x 7¾" x 3⅞". Matching corner No. 350-C, radial 350-R. Diffusing qualities for decorative or artificial illumination effects.

•

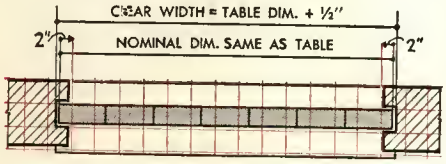
DESIGN NO. 354—Similar in appearance to Nos. 350 and 351. For use on north exposures where 350 and 351 used on sun exposures.

DESIGN NO. 351

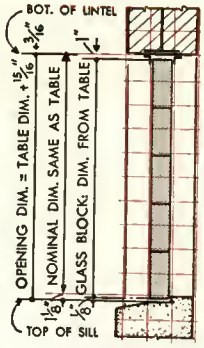
A functional block designed to direct light above the horizontal, to the ceiling for reflection deep into room (see photograph below). Use above eye-level. Has vertical ribs on exterior faces. Lay only as marked. Made in one size only: 7¾" x 7¾" x 3⅞".

Dimension Table

To determine clear opening size for glass block panels use dimensions given below and add $\frac{1}{2}$" for the width and $\frac{15}{16}$" for the height. For modular layout a $\frac{1}{4}$" mortar joint is required.



PLAN



SECTION

No. OF UNITS	5¾" x 5¾" HEIGHT OR WIDTH ¼" JOINTS	5¾" x 5¾" HEIGHT OR WIDTH 3/16" JOINTS	7¾" x 7¾" HEIGHT OR WIDTH ¼" JOINTS	7¾" x 7¾" HEIGHT OR WIDTH 3/16" JOINTS	11¾" x 11¾" HEIGHT OR WIDTH ¼" JOINTS	11¾" x 11¾" HEIGHT OR WIDTH 3/16" JOINTS
1	6"	5 15/16"	8"	7 15/16"	1'-0"	11 15/16"
2	1'-0"	11⅞"	1'-4"	1'- 3⅞"	2'-0"	1'-11⅞"
3	1'-6"	1'- 5 13/16"	2'-0"	1'-11 13/16"	3'-0"	2'-11 13/16"
4	2'-0"	1'-11¾"	2'-8"	2'- 7¾"	4'-0"	3'-11¾"
5	2'-6"	2'- 5 11/16"	3'-4"	3'- 3 11/16"	5'-0"	4'-11 11/16"
6	3'-0"	2'-11⅝"	4'-0"	3'-11⅝"	6'-0"	5'-11⅝"
7	3'-6"	3'- 5 9/16"	4'-8"	4'- 7 9/16"	7'-0"	6'-11 9/16"
8	4'-0"	3'-11½"	5'-4"	5'- 3½"	8'-0"	7'-11½"
9	4'-6"	4'- 5 7/16"	6'-0"	5'-11 7/16"	9'-0"	8'-11 7/16"
10	5'-0"	4'-11⅜"	6'-8"	6'- 7⅜"	10'-0"	9'-11⅜"
11	5'-6"	5'- 5 5/16"	7'-4"	7'- 3 5/16"	11'-0"	10'-11 5/16"
12	6'-0"	5'-11¼"	8'-0"	7'-11¼"	12'-0"	11'-11¼"
13	6'-6"	6'- 5 3/16"	8'-8"	8'- 7 3/16"	13'-0"	12'-11 3/16"
14	7'-0"	6'-11⅛"	9'-4"	9'- 3⅛"	14'-0	13'-11⅛"
15	7'-6"	7'- 5 1/16"	10'-0"	9'-11 1/16"	15'-0"	14'-11 1/16"
16	8'-0"	7'-11"	10'-8"	10'- 7"	16'-0"	15'-11"
17	8'-6"	8'- 4 15/16"	11'-4"	11'- 2 15/16"	17'-0"	16'-10 15/16"
18	9'-0"	8'-10⅞"	12'-0"	11'-10⅞"	18'-0"	17'-10⅞"
19	9'-6"	9'- 4 13/16"	12'-8"	12'- 6 13/16"	19'-0"	18'-10 13/16"
20	10'-0"	9'-10¾"	13'-4"	13'- 2¾"	20'-0"	19'-10¾"
21	10'-6"	10'- 4 1/16"	14'-0"	13'-10 1/16"	21'-0"	20'-10 1/16"
22	11'-0"	10'-10⅝"	14'-8"	14'- 6⅝"	22'-0"	21'-10⅝"
23	11'-6"	11'- 4 9/16"	15'-4"	15'- 2 9/16"	23'-0"	22'-10 9/16"
24	12'-0"	11'-10½"	16'-0"	15'-10½"	24'-0"	23'-10½"
25	12'-6"	12'- 4 7/16"	16'-8"	16'- 6 7/16"	25'-0"	24'-10 7/16"
26	13'-0"	12'-10⅜"	17'-4"	17'- 2⅜"	26'-0"	25'-10⅜"
27	13'-6"	13'- 4 5/16"	18'-0"	17'-10 5/16"	27'-0"	26'-10 5/16"
28	14'-0"	13'-10¼"	18'-8"	18'- 6¼"	28'-0"	27'-10¼"
29	14'-6"	14'- 4 3/16"	19'-4"	19'- 2 3/16"	29'-0"	28'-10 3/16"
30	15'-0"	14'-10⅛"	20'-0"	19'-10⅛"	30'-0"	29'-10⅛"
31	15'-6"	15'- 4 1/16"	20'-8"	20'- 6 1/16"	31'-0"	30'-10 1/16"
32	16'-0"	15'-10"	21'-4"	21'- 2"	32'-0"	31'-10"
33	16'-6"	16'- 3 15/16"	22'-0"	21'- 9 15/16"	33'-0"	32'- 9 15/16"
34	17'-0"	16'- 9⅞"	22'-8"	22'- 5⅞"	34'-0"	33'- 9⅞"

Curved Panel Laying Radii

Either Standard or Radial Block can be laid to several radii by varying the thickness of the mortar joints. By combining both Standard and Radial in one panel various radii can be laid with a more uniform joint thickness.

Type "A" Panels laid with all Standard Block.

Type "B" Panels laid with all Radial Block.

Type "C" Panels laid alternating—2 Radial with 1 Standard Block.

Type "D" Panels laid alternating—1 Radial with 1 Standard Block.

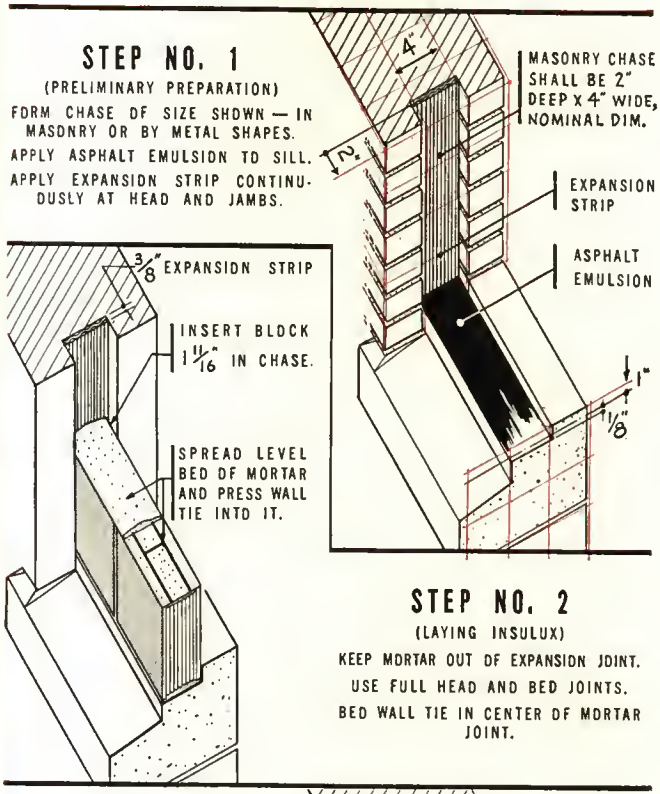
Type "E" Panels laid alternating—1 Radial with 2 Standard Block.

BLOCK AND VERTICAL JOINT TABLE FOR 90° ARC OF A CIRCLE

	OUTSIDE RADIUS	NUMBER OF UNITS S-Standard R-Radial	JOINT THICKNESS INSIDE	JOINT THICKNESS OUTSIDE	TYPE
7¾" STANDARD AND RADIAL BLOCK	2'-5"	5-R	⅛"	⅝"	B
	2'-10"	6-R	3/16"	⅜"	B
	3'-3"	7-R	⅜"	7/16"	B
	3'-8"	8-R	3/16"	⅛"	B
	4'-1"	6-R 3-S	⅛"	5/16"	C
	4'-4"	9-R	⅝"	9/16"	B
	4'-8"	10-R	7/16"	¼"	B
	5'-0"	B-R 3-S	¼"	¼"	C
	5'-4"	6-R 6-S	⅛"	¼"	D
	5'-9"	7-R 6-S	⅛"	3/16"	D
	5'-9"	13-S	⅛"	⅜"	A
	6'-0"	7-R 6-S	½"	9/16"	D
	6'-4"	7-R 7-S	⅜"	⅜"	D
	6'-4"	14-S	⅜"	¾"	A
	6'-8"	7-R 8-S	¼"	¼"	D
	6'-8"	15-S	¼"	⅝"	A
	7'-0"	6-R 10-S	⅛"	¼"	E
	7'-0"	16-S	⅛"	½"	A
	7'-5"	6-R 11-S	⅛"	¼"	E
	7'-5"	17-S	⅛"	7/16"	A
	7'-8"	6-R 11-S	7/16"	½"	E
	7'-8"	17-S	7/16"	¾"	A
	8'-0"	6-R 12-S	5/16"	7/16"	E
	8'-0"	18-S	5/16"	⅝"	A
	8'-4"	7-R 12-S	¼"	¼"	E
	8'-4"	19-S	¼"	½"	A
5¾" STANDARD BLOCK	4'-3"	13-S	⅛"	⅝"	A
	4'-8"	14-S	⅛"	½"	A
	5'-0"	15-S	⅛"	½"	A
	5'-4"	16-S	⅛"	½"	A
	5'-8"	17-S	3/16"	½"	A
	6'-0"	18-S	3/16"	½"	A
	6'-4"	19-S	3/16"	½"	A
	6'-8"	20-S	¼"	½"	A
	7'-0"	21-S	¼"	½"	A
	7'-4"	22-S	¼"	½"	A
11¾"	8'-6"	13-S	⅛"	⅝"	A

APPROXIMATE WEIGHT PER SQ. FT. OF INSULUX, LAID UP IN PANEL: 17.5 LB.

Erection Procedure



STEP NO. 1
(PRELIMINARY PREPARATION)

FORM CHASE OF SIZE SHOWN — IN MASONRY OR BY METAL SHAPES.

APPLY ASPHALT EMULSION TO SILL.

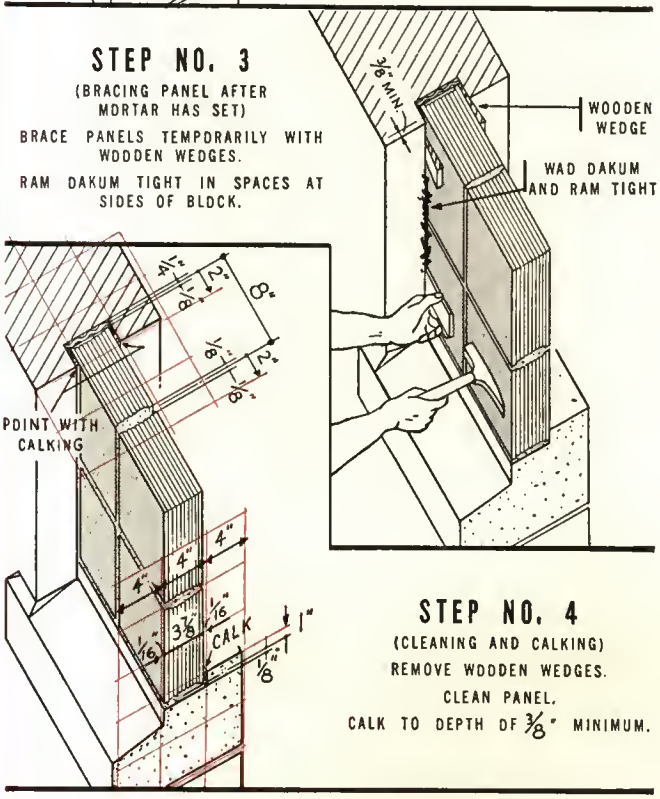
APPLY EXPANSION STRIP CONTINUOUSLY AT HEAD AND JAMBS.

STEP NO. 2
(LAYING INSULUX)

KEEP MORTAR OUT OF EXPANSION JOINT.

USE FULL HEAD AND BED JOINTS.

BED WALL TIE IN CENTER OF MORTAR JOINT.



STEP NO. 3
(BRACING PANEL AFTER MORTAR HAS SET)

BRACE PANELS TEMPORARILY WITH WOODEN WEDGES.

RAM DAKUM TIGHT IN SPACES AT SIDES OF BLOCK.

STEP NO. 4
(CLEANING AND CALKING)

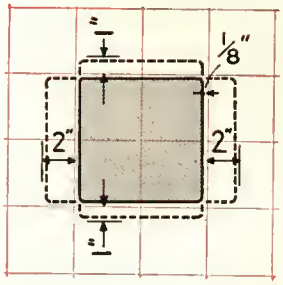
REMOVE WOODEN WEDGES.

CLEAN PANEL.

CALK TO DEPTH OF 3/8" MINIMUM.

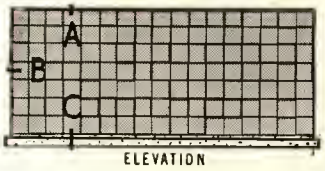
USE ABOVE IN CONJUNCTION WITH TYPICAL DETAILS AND SPECIFICATIONS

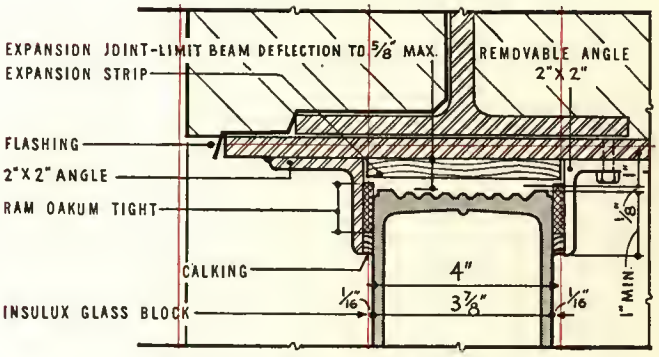
Modular Coordination



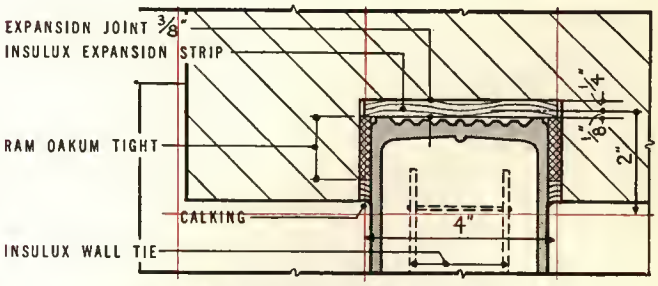
Details shown conform to ASA project A62. Ponel position variable on grid lines; verticolly 1" above or below, depending upon sill detoil. Horizontally it may be on grid line or centered between—depending upon jomb detail.

Panels in 12" Masonry Walls

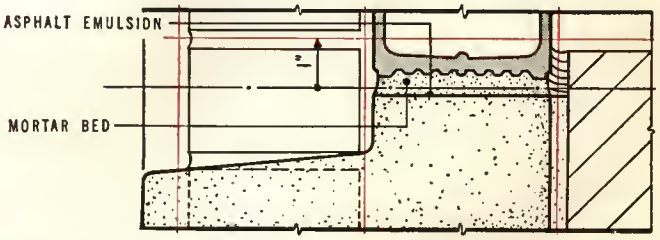




HEAD SECTION "A"



JAMB SECTION "B"

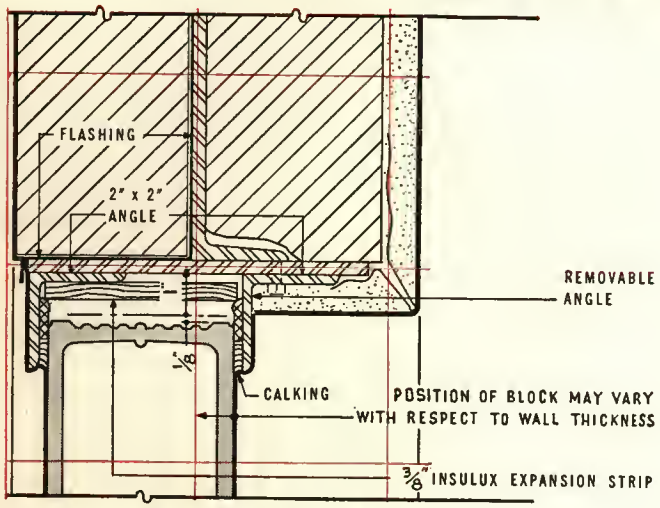


SILL SECTION "C"

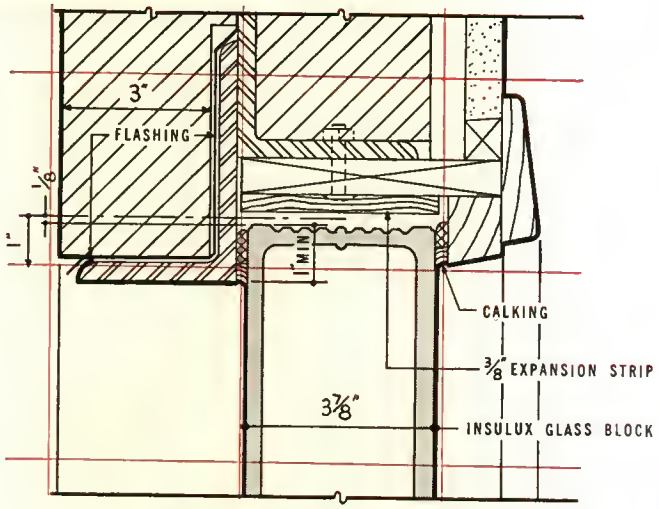
SCALE: 3" = 1'—0"

Structural members shown on details that follow are for illustration of method only. Compute size for required load.

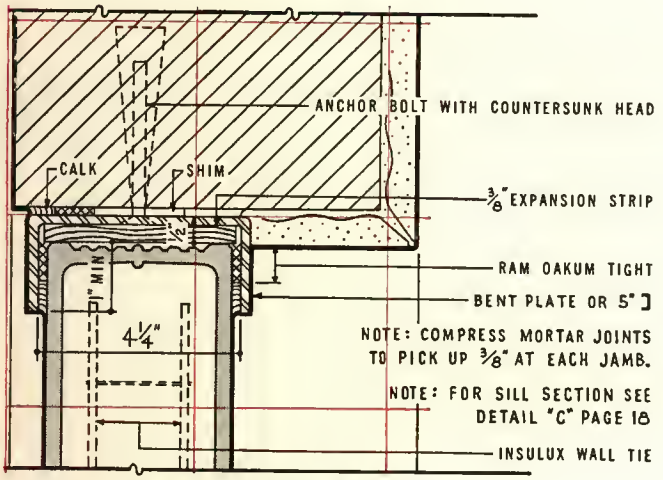
Panels in 8" Masonry Walls



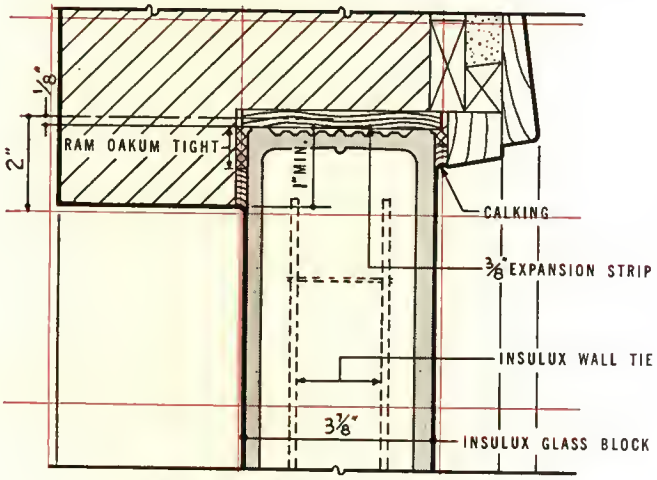
HEAD SECTION "A"



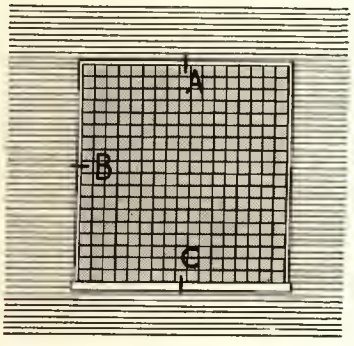
ALT. HEAD SECTION "A"



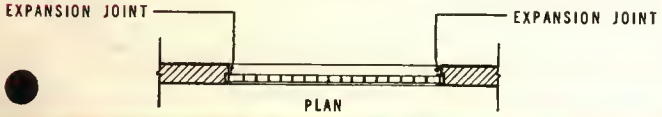
JAMB SECTION "B"



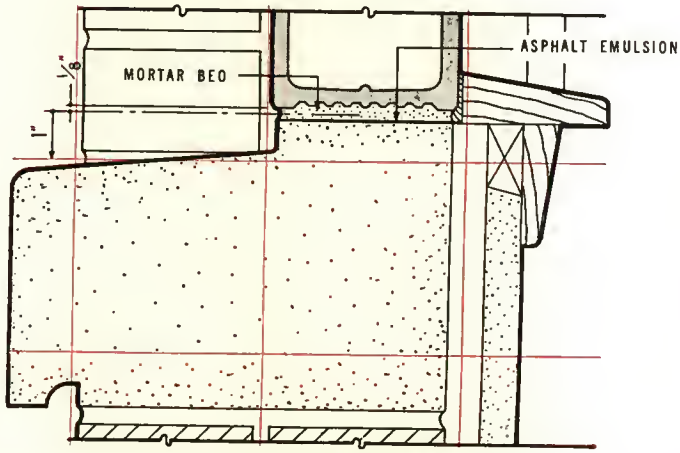
ALT. JAMB SECTION "B"



ELEVATION



PLAN



SILL SECTION "C"

SCALE: 3" = 1'–0"

Intermediate Reinforcing for Large Panels

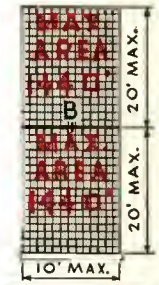
Exterior Panel Sizes and Areas

Sizes: Max. Length—25 Ft., Max. Height—20 Ft. Panels over these limiting dimensians shall be divided by mullians, detail "A" ar shelf angles, detail "C" ar "B," to pravide expansian jaints and reinfarcement against wind pressure.

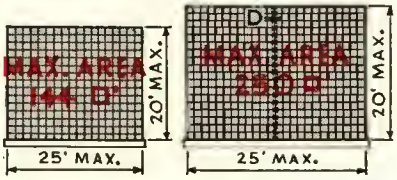
Areas: 144 Sq. Ft. (withaut stiffener)—250 Sq. Ft. (using stiffener detail "D"). Panels over these areas to be reinfarced with mullians, detail "A", or shelf angles, detail "C" or "B".

EXAMPLES

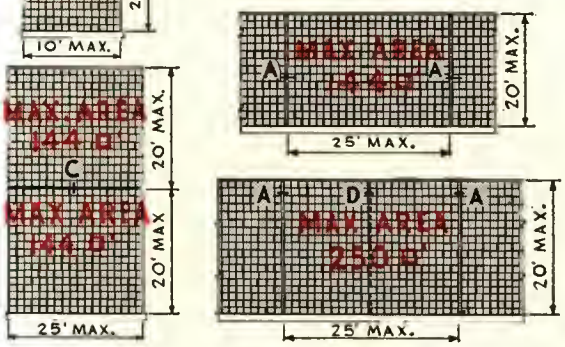
TALL PANELS



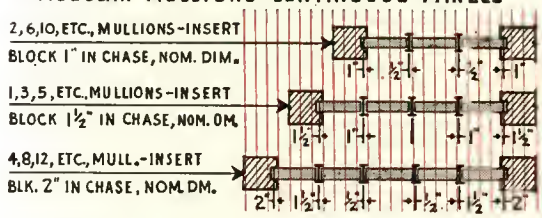
UNIT PANELS

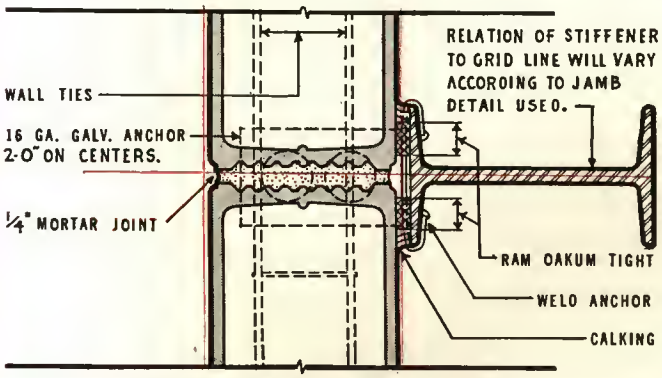


CONTINUOUS PANELS

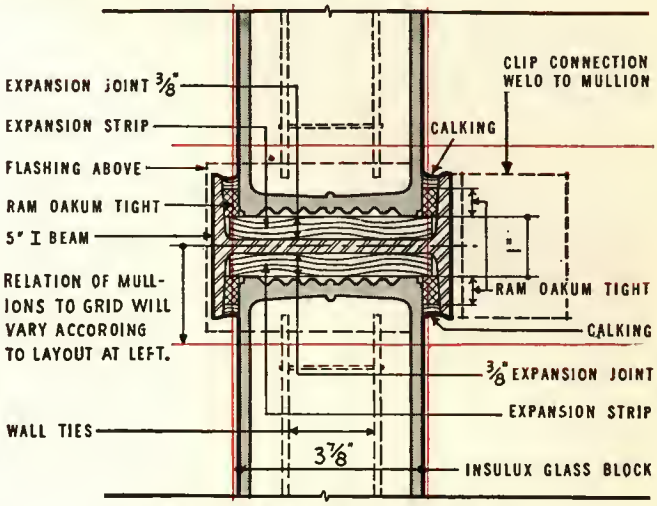


MODULAR MULLIONS-CONTINUOUS PANELS

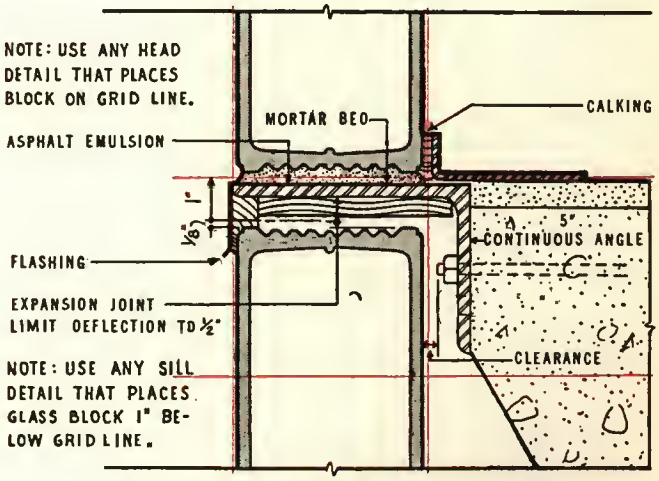




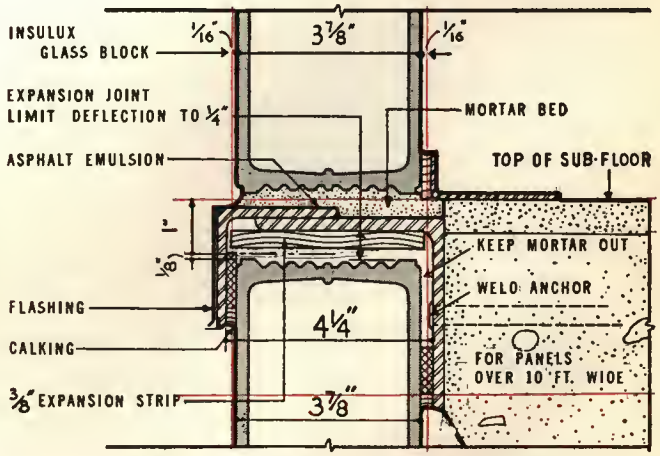
STIFFENER DETAIL "D"



MULLION DETAIL "A"



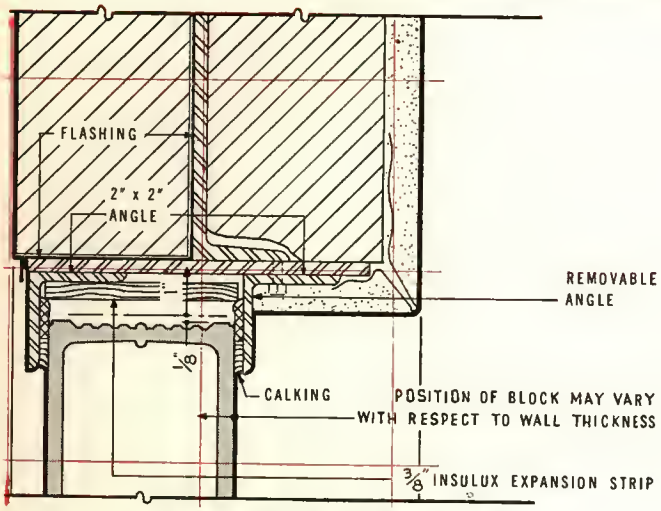
SHELF ANGLE DETAIL "B"



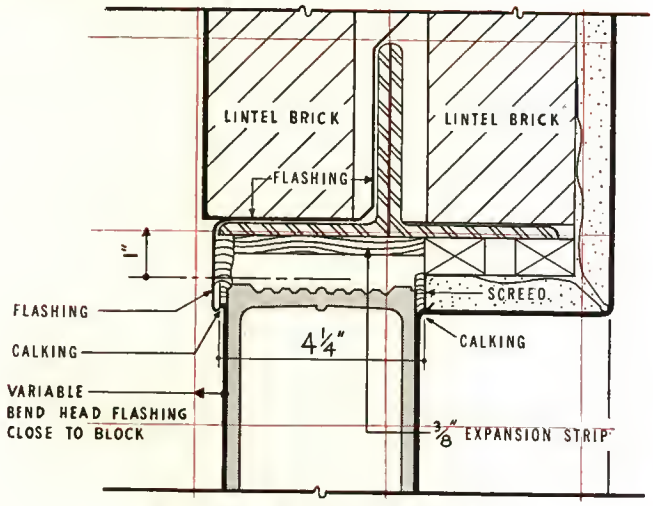
SHELF ANGLE DETAIL "C"

SCALE: 3" = 1'—0"

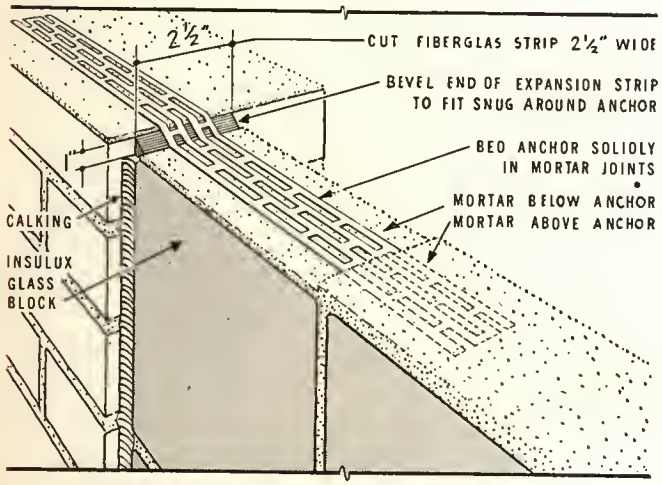
Alternate Details for Small Panels



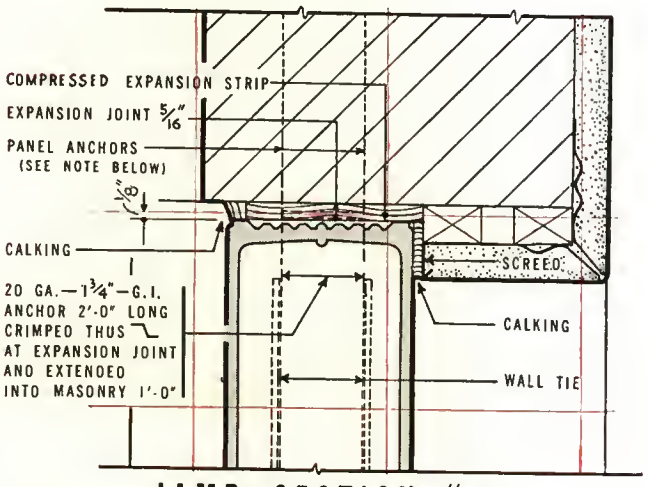
HEAD SECTION "A-1"



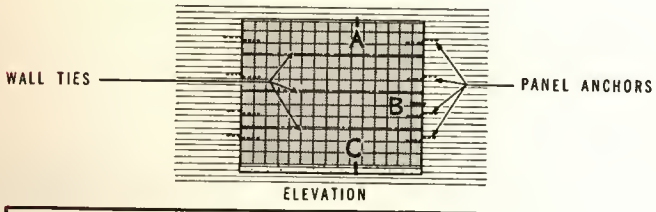
HEAD SECTION "A"



PANEL ANCHOR DETAIL



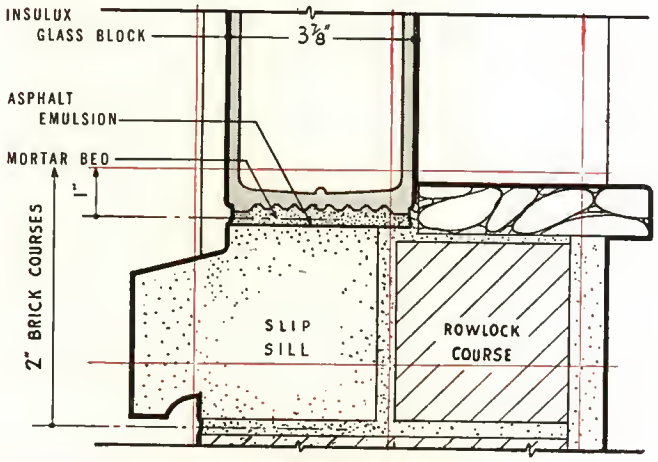
JAMB SECTION "B"



LIMITATIONS WHERE PANEL ANCHORS ARE USED:

MAXIMUM AREA = 100 SQ. FT.
MAXIMUM LENGTH = 10 FEET

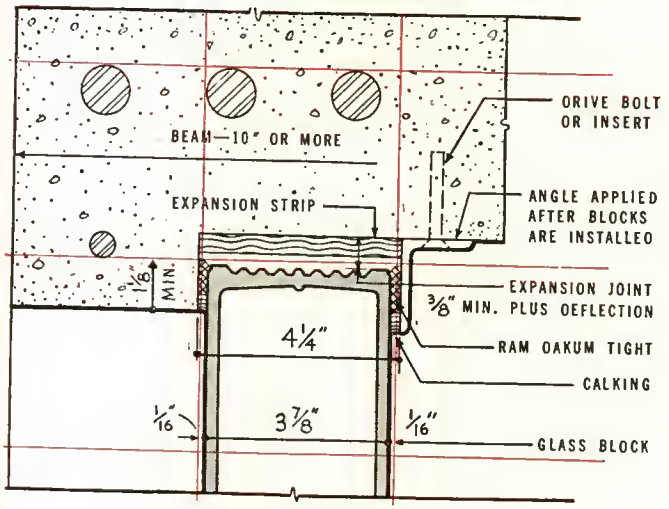
IF PANELS ARE OVER 10 FEET IN LENGTH USE ALTERNATE HEAD DETAIL A-1



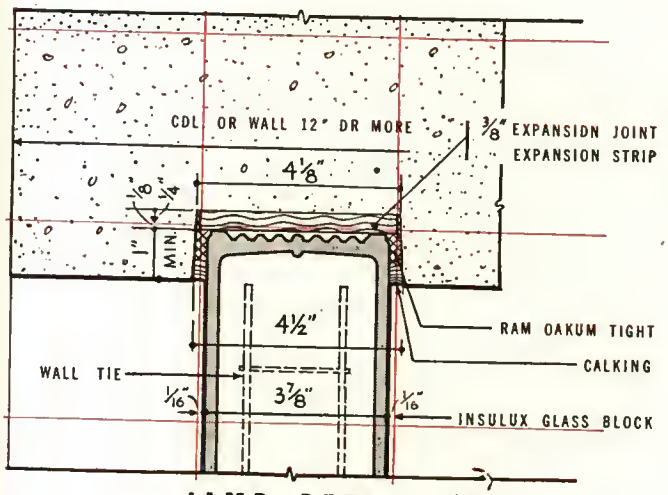
SILL SECTION "C"

SCALE: 3" = 1'-0"

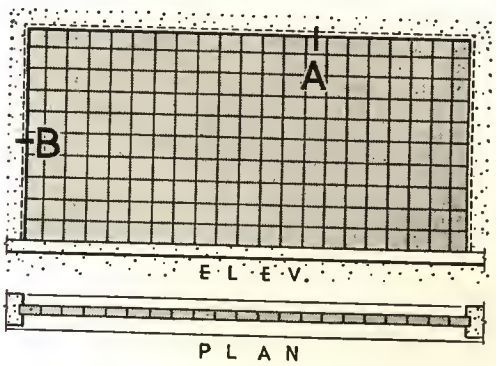
Panels in Concrete Walls



HEAD DETAIL "A"



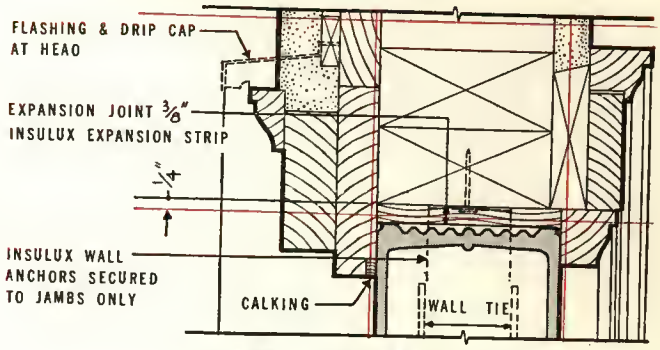
JAMB DETAIL "B"



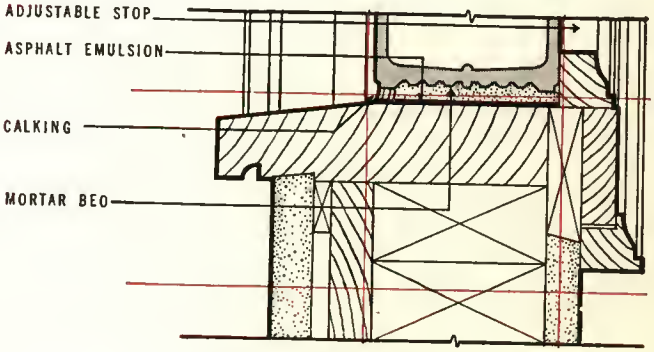
Note: See "intermediate reinforcing", page 17, for large panels and for panel size limitations.

Sill detail may be same as shown on detail "C" panels in 12" walls, p. 15, except panel is on grid lines.

Wood Frame Construction

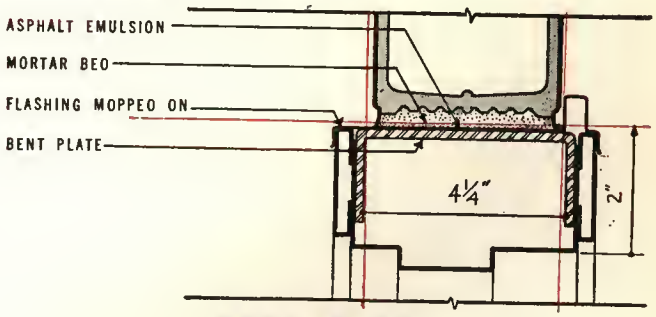


JAMB DETAIL (HEAD SIMILAR AS NOTED)

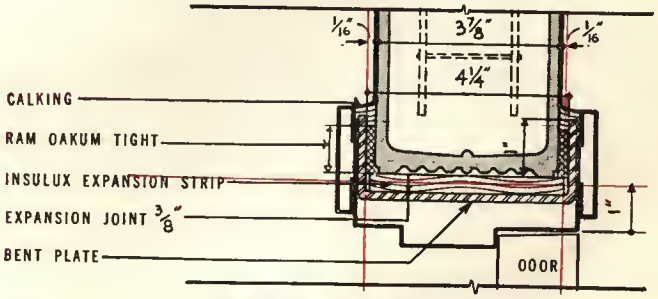


SILL DETAIL

Exterior Metal Door Frames



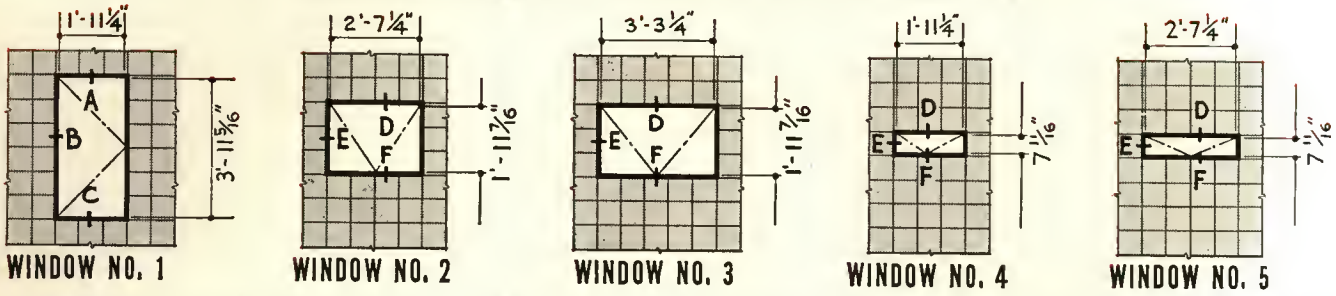
DOOR HEAD



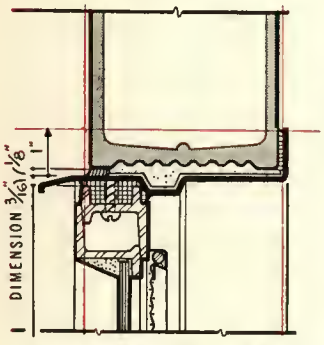
DOOR JAMB

SCALE: 3" = 1'—0"

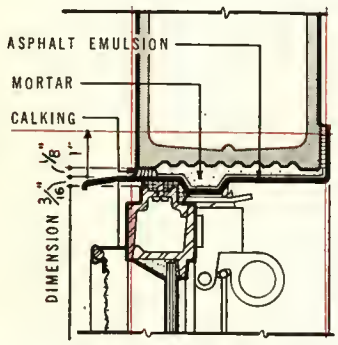
For Setting Into Glass Block Panels



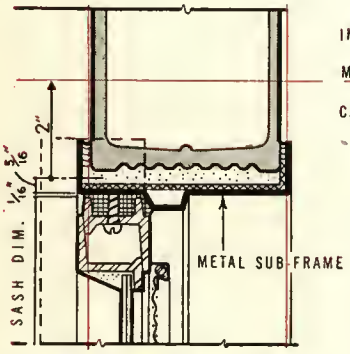
DIMENSIONS SHOWN ARE SASH DIMENSIONS. SUB-FRAMES WILL FIT BLOCK LAID WITH MORTAR JOINTS VARYING FROM 3/16" TO 3/8".



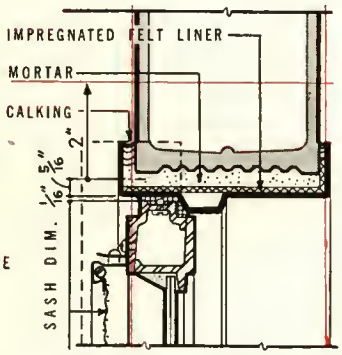
HEAD DETAIL "A"



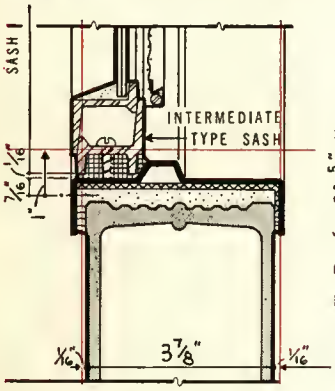
HEAD DETAIL "D"



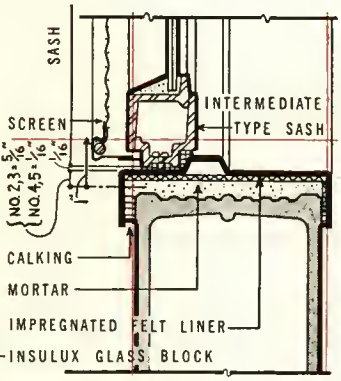
JAMB DETAIL "B"



JAMB DETAIL "E"



SILL DETAIL "C"

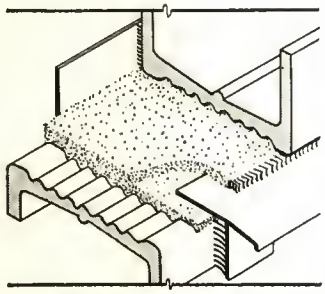


SILL DETAIL "F"

Steel windows for use with glass block are now available through some steel sash manufacturers. Details on these pages show types which have been set up as standard.

Windows on this page

Shown at the left are windows which can be set in glass block panels. They can be furnished complete with sub-frames (including impregnated felt lining and asphalt coating) by sash manufacturers.



Cutaway view of upper corner of window frame showing top flange bedded in mortar at head

Windows No. 2 and No. 3 are intermediate projected types for use with 8" glass block. Window No. 1 is an intermediate casement for use with 6", 8" or 12" block—it is also available 4(8") blocks in width. These windows are for industrial and commercial uses. Windows No. 4 and No. 5 are intermediate types for 8" glass block panels—use for ventilating small rooms.

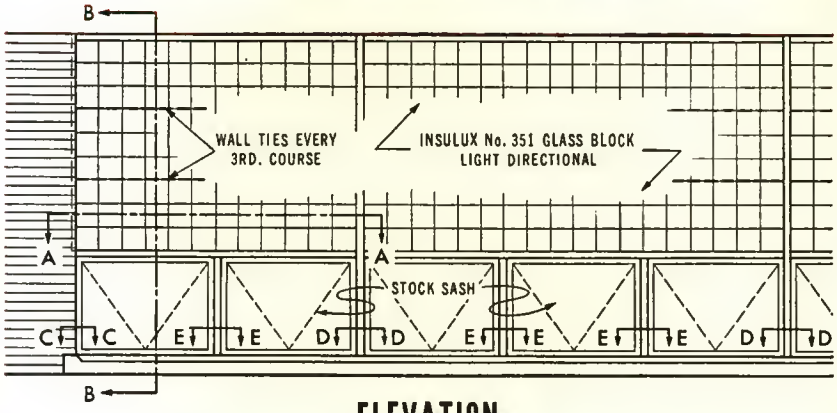
Windows on opposite page

The details on page 21 show intermediate projected windows for use below glass block panels when continuous vision or ventilation is needed. They can be furnished complete, with pressed steel cover plates, connecting angles, bolts and screws by sash manufacturer.

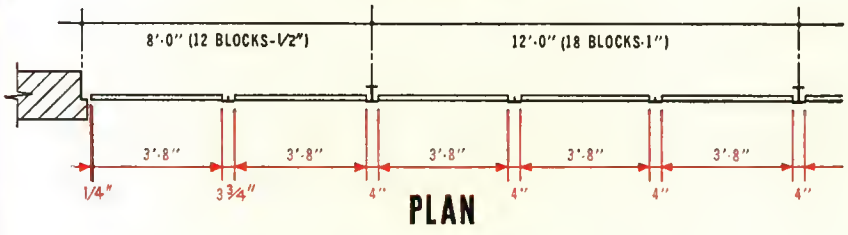
Where Prismatic Blocks (Insulux No. 351) are used above sash, the sight line of the panel sill should not be less than 6'-0" above the floor.

SCALE: 3" = 1'—0"

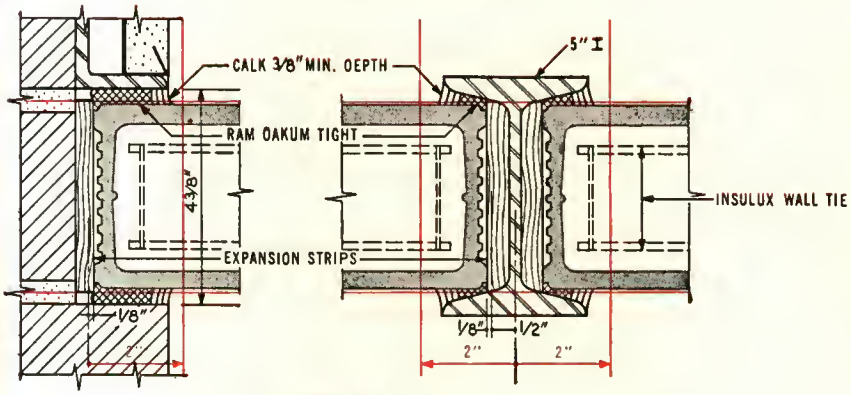
Windows For Use Below No. 351 Glass Block Panels



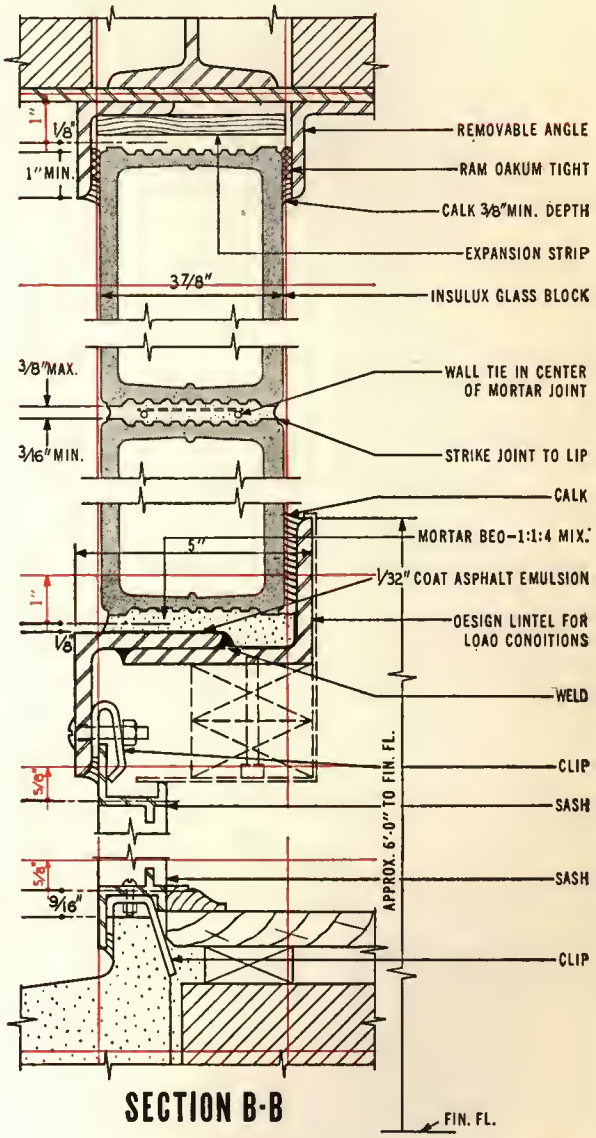
ELEVATION



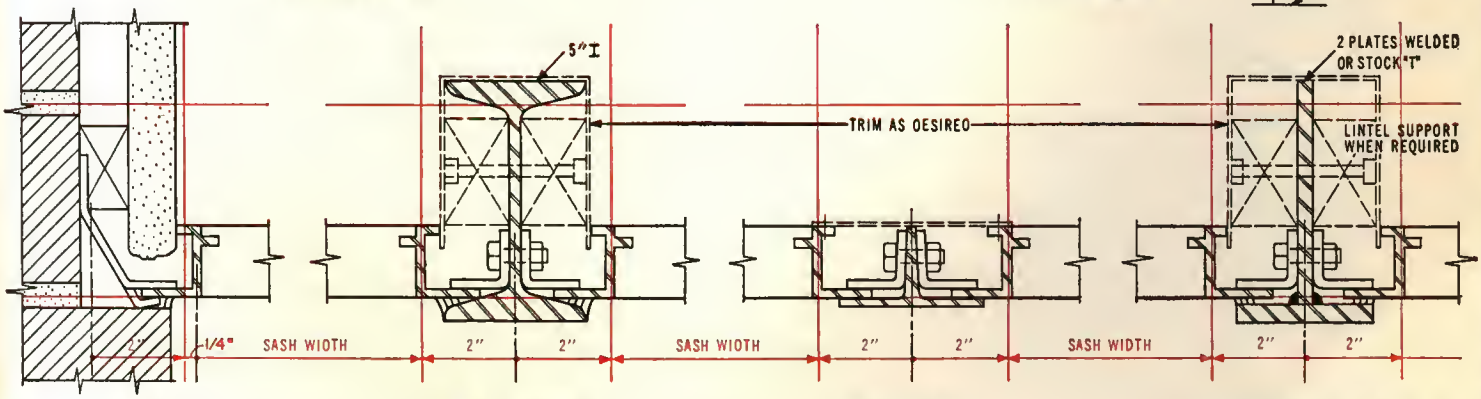
PLAN



SECTION A-A



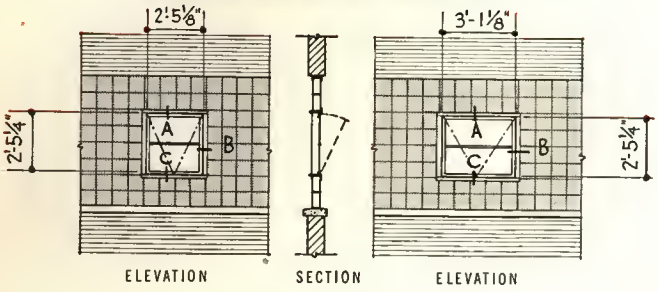
SECTION B-B



JAMB-C MULLION-D MULLION-E ALT. STRUCT. MULL.-E

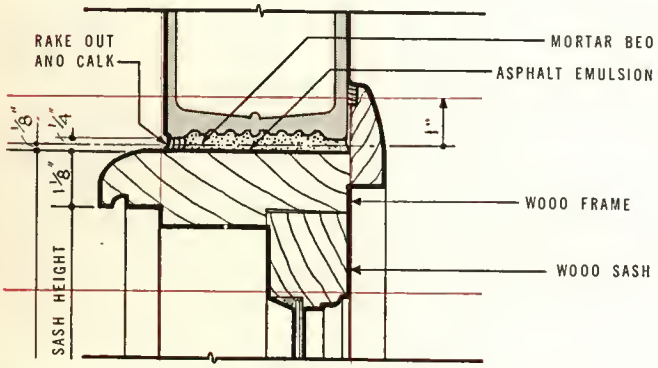
SCALE: 3" = 1'—0"

Wood Sash in Panels

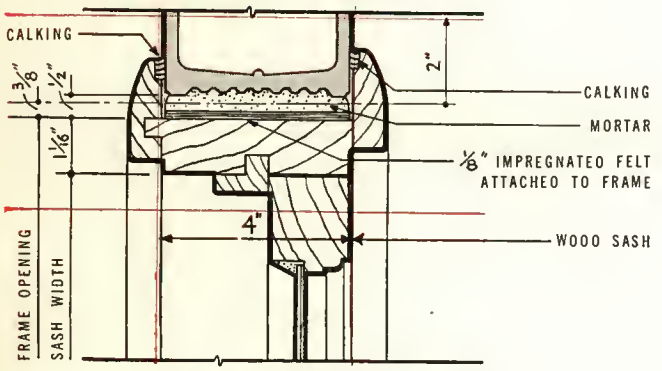


DIMENSIONS SHOWN ABOVE ARE SASH DIMENSIONS

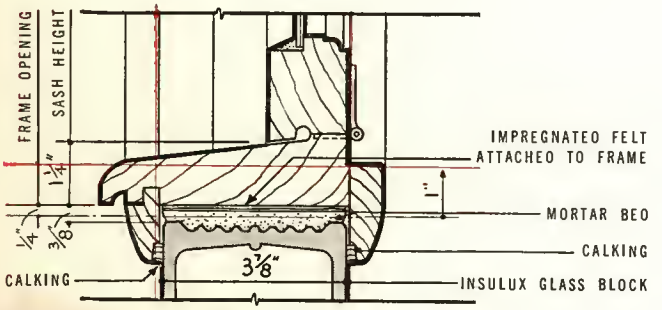
BOTTOM HINGED WOOD SASH



HEAD SECTION "A"

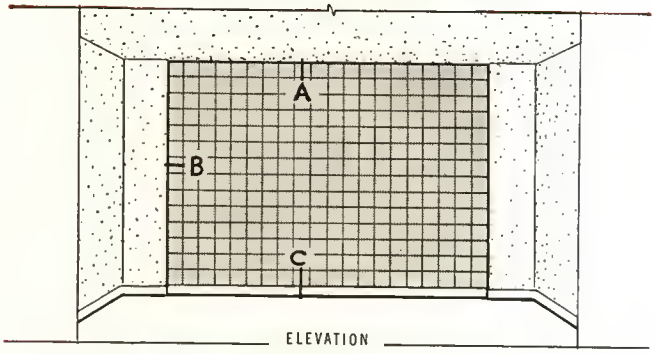


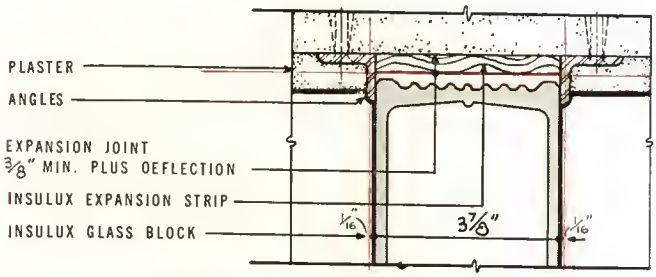
JAMB SECTION "B"



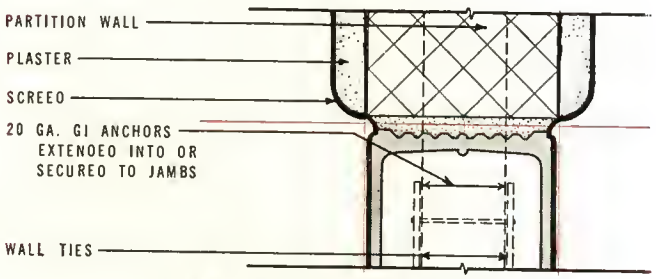
SILL SECTION "C"

Interior Partitions

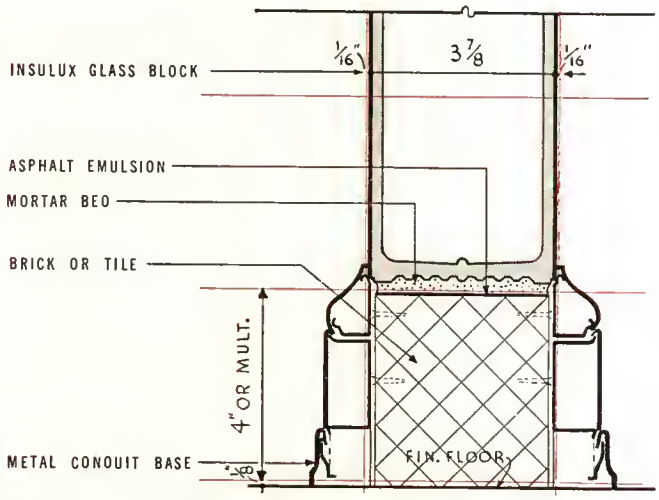




HEAD SECTION "A"



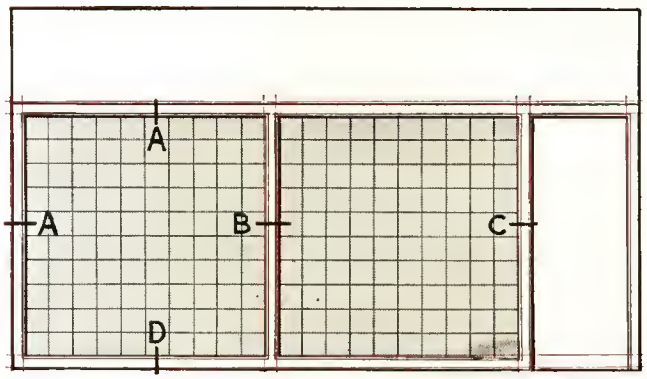
JAMB SECTION "B"



BASE SECTION "C"

SCALE: 3" = 1'–0"

Set-in-Wood Construction for Interior Partitions



TYPICAL OFFICE ELEVATION

Details on this page show methads far installing "Insulux Glass Block Set-in-Wood" interior partitions (nat far exterior use).

The system is simple, requiring anly three basic wood pieces: Continuous strips for horizontal jaints; Made-to-length pieces far vertical jaints; Wedges far use at jambs and heads to lock panels tagether.

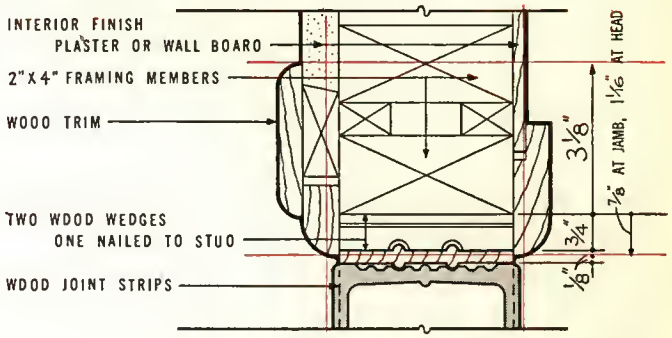
In framing the apening, it is impartant that raugh bucks be sturdily and accurately built. The exact apening sizes are shawn in the dimensian table below.

Wood parts may be obtained thraugh Insulux Glass Black distributars. They are available anly far 8″ and 12″ block. Far more detailed information about this system write American Structural Products Company, Toledo, Ohio.

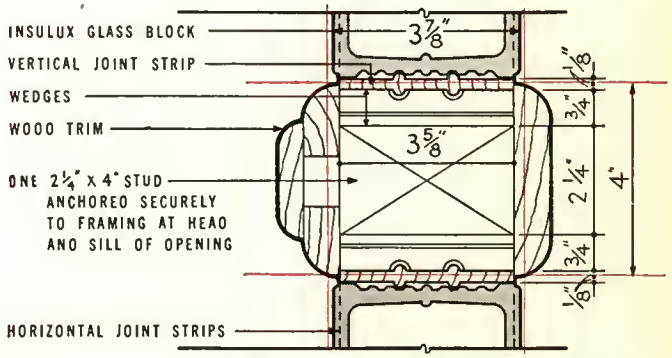
DIMENSION TABLE, "SET-IN-WOOD" CONSTRUCTION

12″ BLOCK			8″ BLOCK		
No. of BLOCK	OPENING WIDTH	OPENING HEIGHT	No. of BLOCK	OPENING WIDTH	OPENING HEIGHT
1	1′-1¾″	1′-1 3/16″	1	9¾″	9 3/16″
2	2′-1¾″	2′-1 3/16″	2	1′-5¾″	1′-5 3/16″
3	3′-1 13/16″	3′-1¼″	3	2′-1¾″	2′-1 3/16″
4	4′-1 13/16″	4′-1¼″	4	2′-9¾″	2′-9 3/16″
5	5′-1 13/16″	5′-1¼″	5	3′-5¾″	3′-5 3/16″
6	6′-1⅞″	6′-1 5/16″	6	4′-1¾″	4′-1 3/16″
7	7′-1⅞″	7′-1 5/16″	7	4′-9¾″	4′-9 3/16″
8	8′-1⅞″	8′-1 5/16″	8	5′-5¾″	5′-5 3/16″
9	9′-1 15/16″	9′-1⅜″	9	6′-1¾″	6′-1 3/16″
10	10′-2″	10′-1⅜″	10	6′-9¾″	6′-9 3/16″
			11	7′-5¾″	7′-5 3/16″
			12	8′-1¾″	8′-1 3/16″
			13	8′-9¾″	8′-9 3/16″
			14	9′-5¾″	9′-5 3/16″
			15	10′-1¾″	10′-1 3/16″

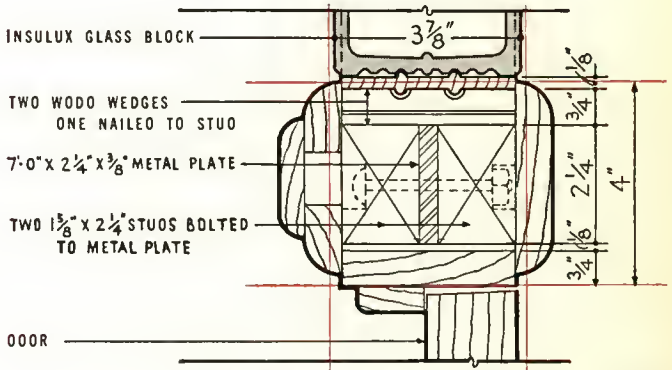
Dimensians given are frame apening dimensians and include clearance at each side and top af panel far wedging. Panel limits—75 sq. ft.—10 ft. in width.



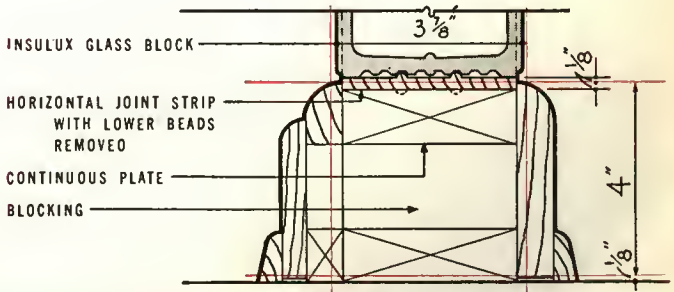
HEAD & JAMB DETAIL "A"



MULLION DETAIL "B"



DOOR JAMB DETAIL "C"



BASE DETAIL "D"

SCALE: 3″ = 1′—0″

THE following basic specifications are divided into paragraphs with designated letters for convenience. *Specific variations are required for: (1) Fire retardant panels. (2) Erection under jurisdiction of the Pacific Coast Building Officials Conference. Complete information on request.*

Note: The general conditions of the contract are hereby made, by reference, a part of this specification.

Scope: This work consists of furnishing all materials and labor necessary for the complete installation of all glass block as shown on the drawings or as specified hereinafter.

Materials

A. Glass Block shall be hollow, partially evacuated units of water-clear pressed glass as manufactured by American Structural Products Company. Mortar-bearing surfaces shall be precoated with an alkali and moisture resistant grit bearing material, white in color. Glass Blocks shall be Insulux No..... as shown on the drawings.

B. Cement shall be..... Portland cement, complying with the specifications of the American Society for Testing Materials.

C. Lime shall be high calcium, hydrated or well slaked quick lime, complying with A.S.T.M. specifications C6-31 or C5-26. Magnesium hydrated lime may be used if hydrated under steam pressure and if it does not contain more than 8% by weight of unhydrated oxides. 25 lbs. of Quick Lime or 40 lbs. of hydrated shall equal one cubic foot.

D. Sand shall be composed of hard, durable mineral particles free from injurious amounts of organic, alkaline or other foreign materials. It shall be uniformly graded from fine to coarse with 100% passing a No. 16 sieve.

E. Water shall be clean, non-alkaline and devoid of salts or other injurious elements.

F. Mortar-Mix shall be composed of 1 part Portland cement, 1 part lime and 4 parts of sand, measured by volume. It shall be mixed to a consistency as stiff and dry as possible and still retain good working characteristics.

Setting accelerators or anti-freeze compounds are not to be used.

G. Reinforcing Wall Ties shall consist of two No. 9 wires spaced 2″ apart to which are welded No. 14 gauge cross wires. Ties are to be 8 ft. long and not more than .20″ thick at the weld. They shall be galvanized or treated with some other approved corrosion resisting coating. Ties are to run continuously with ends lapped 6″ and are to be installed in horizontal mortar joints as follows:

No. 200 Series (5¾″ Square)—Every fourth course
No. 300 Series (7¾″ Square)—Every third course
No. 400 Series (11¾″ Square)—Every course.

H. Asphalt Emulsion shall be Insulux emulsion or approved equal and shall be a clay type suspended in water. It shall be used without diluting.

I. Oakum shall be a non-staining type.

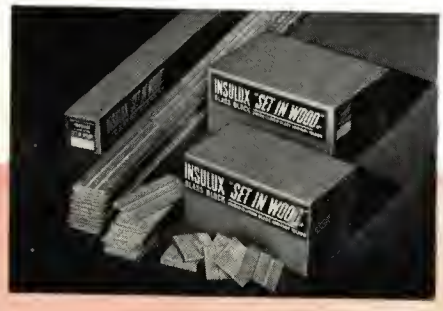
J. Caulking where indicated on the drawings, shall be Insulux Calking Compound or approved equal. It shall be non-hardening and non-staining mastic of gun grade consistency.

Insulux Standard Accessories

AVAILABLE THROUGH INSULUX DISTRIBUTORS

INSULUX ASPHALT EMULSION — For application to panel sills. A special asphalt dispersed in water. Available in 5-gallon, 1-gallon and 1-quart cans.

INSULUX CALKING COMPOUND—For waterproofing expansion joints of panels. A gun grade non-hardening material, available in ½-gal., 1-gal. and 5-gal. cans.



"SET - IN - WOOD" STRIPS AND WEDGES—Horizontal strips 6, 8 and 10 ft. long, 12 to carton. Verticals 7¾″ and 11¾″ long, 144 to carton. Wedges 72 pairs to carton.

K. Expansion Strips shall be Insulux expansion strips made of fibrous glass or other approved material, bonded together in strips 4⅛"x ⅜" x 25".

L. Panel Anchors (use where panels are not set in chases) shall be made of 20 gauge galvanized perforated steel strips, 24" long and 1¾" wide. They are to be used as shown on the drawings, located in horizontal mortar joints as frequently as wall ties, but not less than two to each jamb.

Erection

A. Panels are to be of size and shape shown on the drawings. Openings for panels shall be formed as detailed and are to be built so that panels will be properly supported against wind pressure. Before laying glass block, sills are to be coated with a heavy layer of asphalt emulsion (at least 1/32" thick) the coat being allowed to dry before laying the first mortar bed.

B. Install expansion strips at panel jambs and heads, below shelf angles, at mullions and at any other locations shown on the drawings. These strips are to run continuously and are to be so installed that the edges of the glass block panel (except at sills) do not come in direct contact with the building structure. Expansion strips may be held in place by gobs of asphalt emulsion.

C. Blocks shall be laid plumb, true and level with all mortar joints filled completely with mortar. Do not furrow or "feather" joints. Exposed thickness of mortar joints shall be ¼" for modular system (shown on drawings) but in no case less than 3/16" or more than ⅜". Do not allow mortar to lodge in expansion joints.

D. Wall ties are to be installed in joints as heretofore specified, imbedding them completely in mortar.

E. Tool the exposed surfaces of the mortar joint to a slightly concave, smooth, non-porous surface after mortar reaches its initial set.

F. Ram oakum between the sides of the block and the sides of the chases after the mortar has set. Ram the oakum back at least ⅜" from the finished surface. Fill the recesses thus formed at jambs and head of panels with mastic calking compound, both inside and out, to provide tightly sealed panels.

G. Clean all loose mortar from the panel as the mortar joints are tooled. Final cleaning shall not be done until the mortar has reached its final set.

Alternate for Anchored Panels (Copy paragraphs A, B, C, D, E and G, under "Erection" and include following paragraphs): Where glass block panels are not set in chases but are anchored by panel anchors (see note) standard expansion strips shall be cut to a width of 2" then installed as specified in paragraph B.

Perforated anchors shall be either bolted to or extended not less than 1 foot into masonry jambs. The balance of the anchor is to be imbedded in the horizontal mortar joints of the glass block panels—crimping the anchor at the expansion joint to permit movement. Do not use wire wall ties as anchors.

After the mortar has set, point the exposed surfaces of the expansion joint with mastic calking compound to a depth of not less than ½".

This method not recommended for large panels or those subjected to severe conditions.

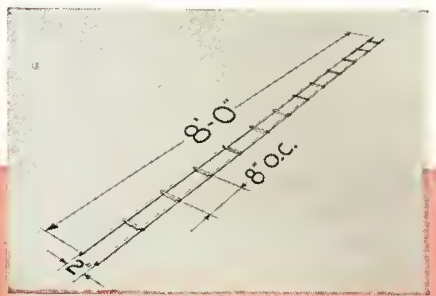
Check-list of materials for construction of typical glass block panels:

By Insulux distributors: Glass blocks, reinforcing wall ties, anchors, expansion strip, mastic calking compound, asphalt emulsion and "Set-in-Wood" strips and wedges.

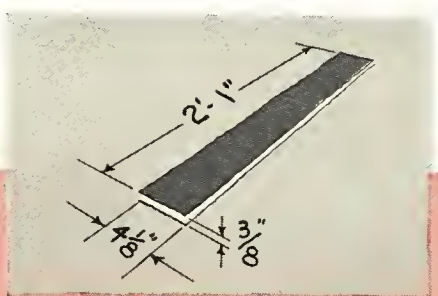
By others: Oakum, metal I beams, channels, T's, etc., wood supports, trim, metal or wood windows, and mortar materials.

Insulux Standard Accessories

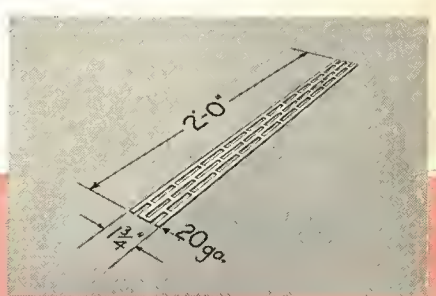
AVAILABLE THROUGH INSULUX DISTRIBUTORS



INSULUX REINFORCING WALL TIES —Used for reinforcing glass block panels. Made 8' 0" long of No. 9 wires spaced 2" apart by No. 14 cross wires.



INSULUX EXPANSION STRIPS—Required in all expansion joints. Strips are 4⅛" x ⅜" x 25". Made in the form of a resilient glass fiber pad.



INSULUX PANEL ANCHORS—For use only where chase construction is not used. Made of 20 gauge perforated steel, 1¾" x 24", galvanized after forming.

Light Transmission

Insulux designs No. 7, 16, 17 and 30, transmit approximately 80% of the light measured at normal incidence to their face. Design No. 40, approximately 70%. Light-diffusing and light-directing blocks are not measurable by standard methods.

Underwriter's Test

Insulux glass blocks—tested at the Underwriters' Laboratories in Chicago—withstood a 45-minute fire and hose test and were accorded a "Class F. opening" rating for light-fire exposures. Blocks tested were Numbers 207, 216, 217, 230, 240, 307, 316, 317, 330, 340, 350, 351 and 354.

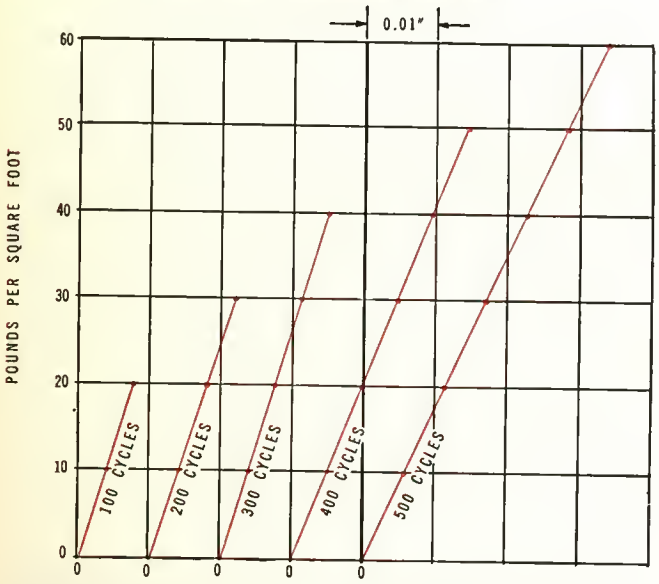
Sound Reduction

Glass block panels have an average sound reduction factor of 40.7 decibles (over nine frequencies). This is slightly better than 4" tile wall, plastered on two sides.

Weight Per Sq. Foot

Varying slightly with the different patterns and sizes, the weight of Insulux panels is approximately 17.5 lbs. per sq. ft.

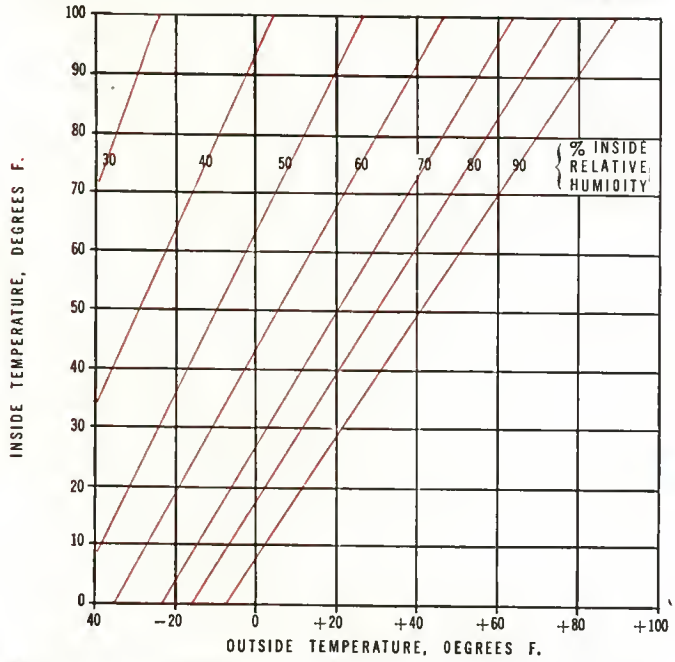
Wind Pressure Tests



A 7'-3" x 8'-8" Insulux glass block panel tested at Materials Testing Laboratory, Purdue University, proved entirely elastic under pressure of 40 lb. per sq. ft. (equal to wind velocity of 115 m.p.h.). Final failure occurred at pressure equal to a 174 m.p.h. wind. The chart above shows successive results at end of each 100 cycles of pressure—up to 500 cycles.

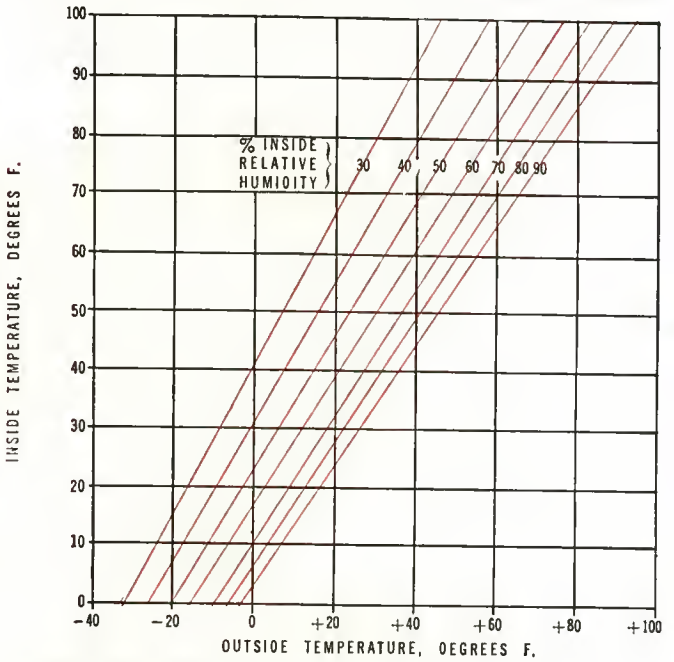
Surface Condensation

• INSIDE SURFACE CONDENSATION POINTS FOR GLASS BLOCK



BASED ON A U-FACTOR OF .49 FOR SMOOTH-FACED GLASS BLOCK

• INSIDE SURFACE CONDENSATION POINTS, SINGLE GLAZING



BASED ON A U-FACTOR OF 1.13 AS GIVEN BY A. S. H. & V. E.

The charts above show a lower outside temperature is required to produce condensation on a glass block panel than on a single glazed window. Important in all buildings but particularly so where high humidities prevail —as swimming pools, paper mills, textile mills, etc.

Solar Heat Gain

Heat gain through Glass Block: The table below shows the results of the latest tests(*) on heat gain through glass block panels. The figures shown are average for most glass block face designs (**). Prismatic types have somewhat lower values.

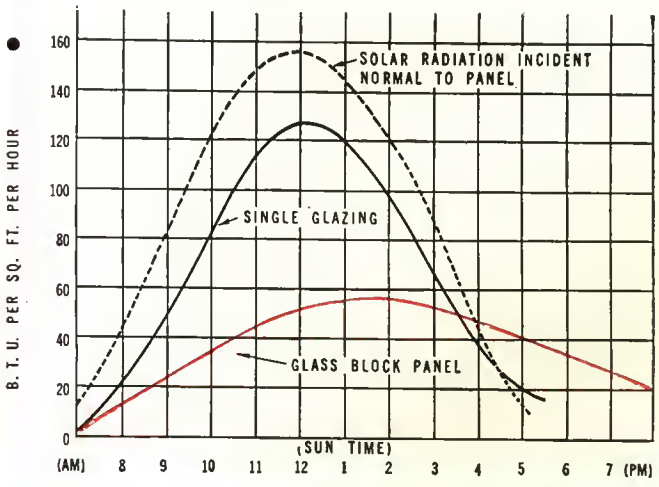
Sun Time	Outside Temp. (F.)	SOLAR RADIATION HEAT GAIN (Direct plus Sky) Btu per Sq. Ft. per Hour						TOTAL HEAT GAIN[2] (Solar Radiation Plus Normal Transmission) Btu per Sq. Ft. per Hour					
Side		East[3]	West[3]	South				East[3]	West[3]	South			
N. Latitude Degrees		40	40	30	35	40	45	40	40	30	35	40	45
7:00	74	65.0		1.0	2.8	3.0	5.0	61.0		-4.5	-2.0	-0.5	1.0
8:00	76	63.0	0.0	3.0	4.4	6.5	11.0	77.5		0.0	2.0	4.0	5.0
9:00	79	40.0	5.0	5.5	7.1	10.2	13.4	73.5	5.0	5.0	7.0	10.0	12.0
10:00	83	24.0	6.0	8.5	11.3	14.7	17.1	57.5	6.5	11.0	15.0	18.0	20.8
11:00	87	15.5	7.0	12.0	15.2	18.7	21.8	45.0	7.5	16.5	22.0	25.5	32.0
12:00	90	10.0	10.0	14.0	17.4	21.0	24.8	36.5	10.5	21.5	28.0	33.8	40.8
1:00	93	7.0	15.5	12.0	15.2	18.7	21.8	30.0	22.0	25.0	31.8	38.5	46.0
2:00	94	6.0	24.0	8.5	11.3	14.7	17.1	24.0	35.0	26.0	32.0	39.0	47.0
3:00	95	5.0	40.0	5.5	7.1	10.2	13.4	19.5	55.0	24.0	29.8	36.5	45.0
4:00	95	4.5	65.0	3.0	4.4	6.5	11.0	15.5	77.0	20.0	25.5	31.5	40.5
5:00	93	4.0	63.0	1.0	2.8	3.0	5.0	12.5	85.5	15.0	20.0	25.2	33.5
6:00	91	2.5	23.5	0.0	0.7	0.7	3.0	10.5	55.0	9.5	13.5	18.0	25.5
7:00	89	1.5	0.0			0.0	0.7	8.0	18.5	3.5	7.0	11.0	18.0

[1] For August 1.
[2] Inside temperature, 78 F.
[3] For east and west walls these values can be applied to all latitudes between 30 and 45 degrees N. without excessive errors.

(*) *Reported in the paper "Heat Gain Through Glass Blocks by Solar Radiation and Transmittance" by F. C. Houghton, David Shore, H. T. Olson and Burt Gunst (see page 264, April 1940 H.P. & A.C.)*

(**) *Dimensions of blocks tested 7¾" x 7¾" x 3⅞".*

Glass Block compared to single glazing: The chart below compares heat gain through a glass block panel with that through a single glazed window. Tests conducted August 29, 1939—South Exposure.



Thermal Insulation

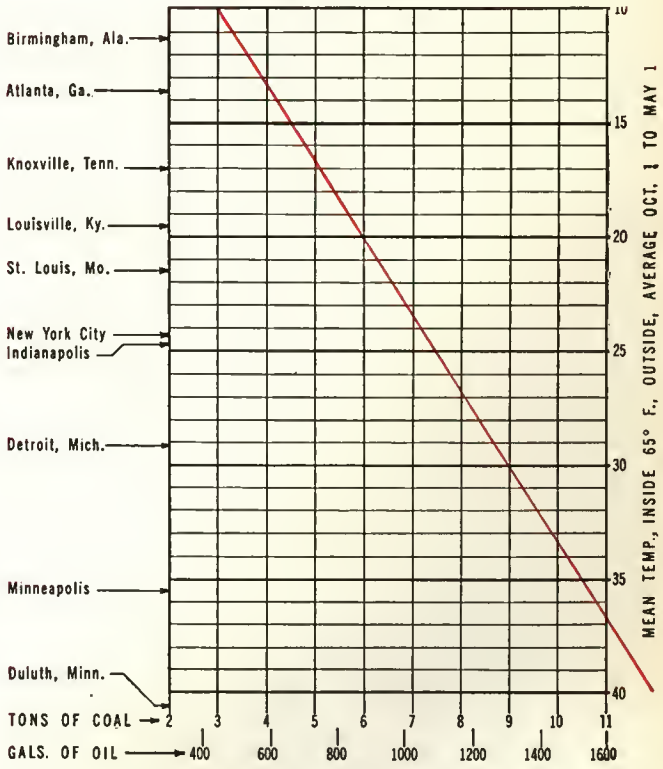
Thermal conductivity tests run at nationally recognized laboratories and confirmed by official tests at the Pittsburgh Testing Laboratories, give the values quoted below for the overall heat transfer coefficient (U.*) through glass block panels.

U-Values

Type of Block	Still Air	15 mph wind
Ribbed-face:	U—0.38	U—0.46
Smooth-face:	U—0.40	U—0.49

**B.T.U. per sq. ft. per hour per degree F. difference in temperature.*

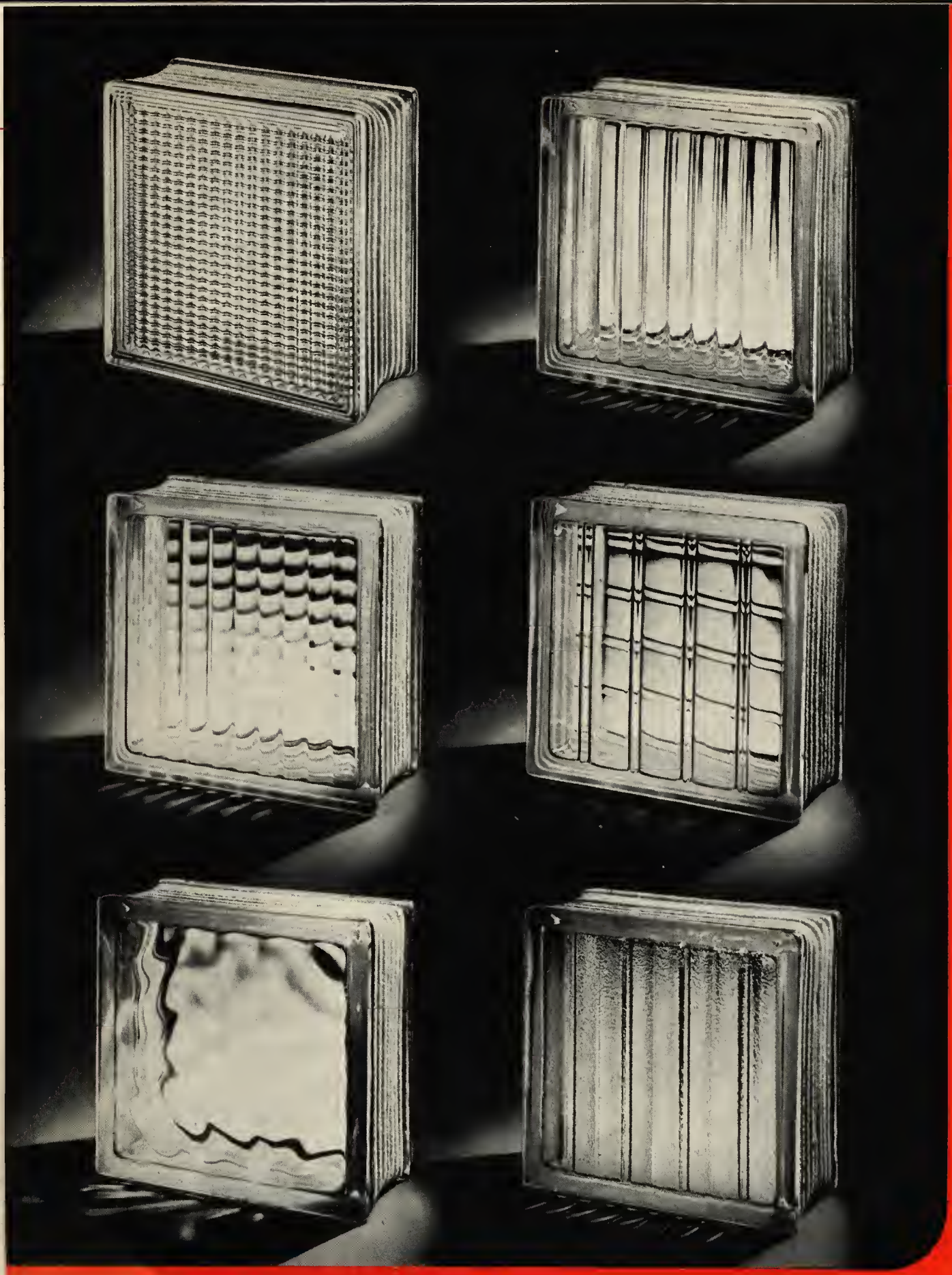
Fuel Savings



The above chart shows the fuel savings in gallons of oil and tons of coal which can be attained by using panels of Insulux Glass Block in place of single glazed windows. Figures are based on glass areas of 1000 sq. ft.

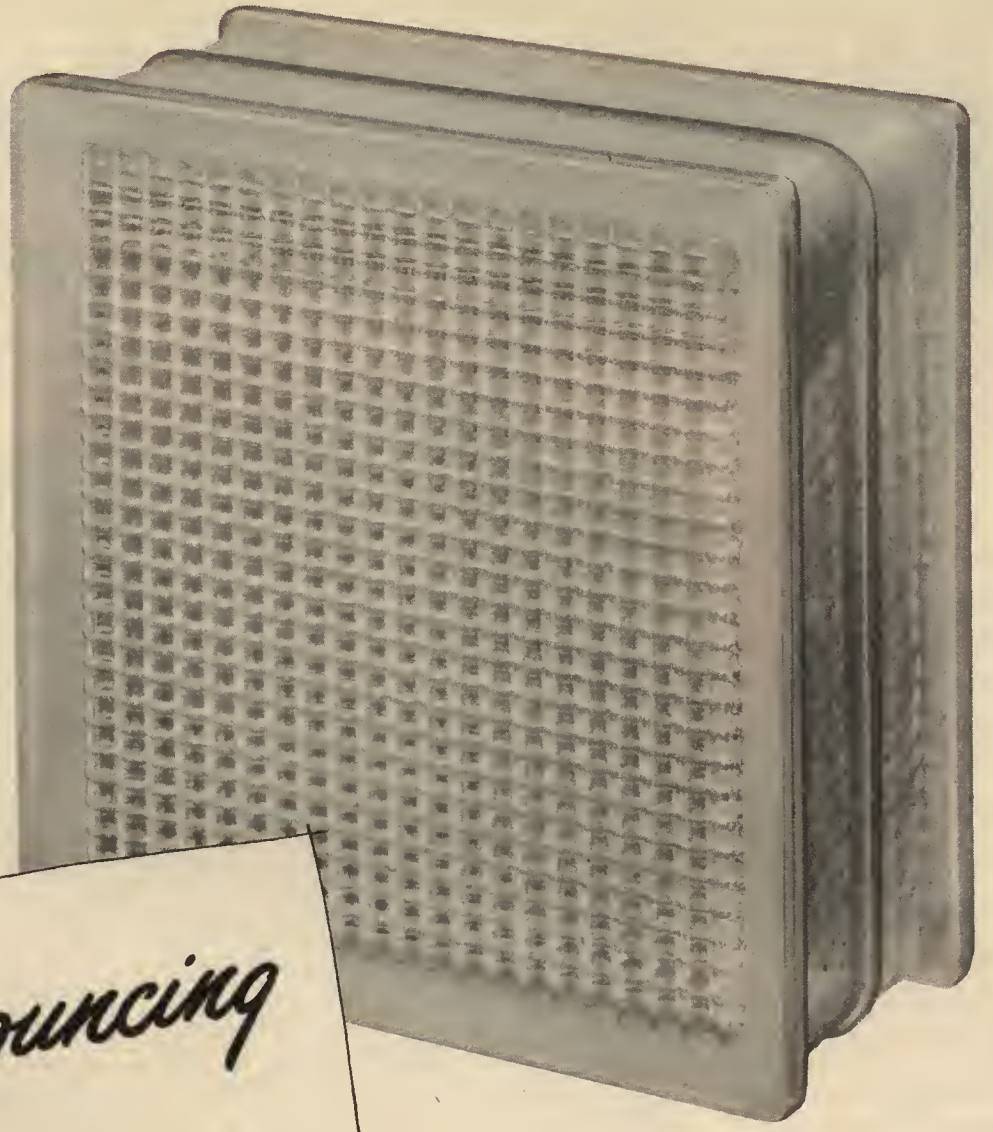
These heat loss calculations were based upon conduction through glass areas only, all other factors such as walls, roof and infiltration were ignored.

Calculations were based on the following factors: U value Sash, 1.13; U value Glass Block, .49; inside temperature 65 degrees. Outside temperature were averages taken for various localities from October 1 to May 1. Still air inside, 15 MPH wind outside 12,000 B. T. U. per lb. coal at 60% efficiency; 140,000 B. T. U. per gal oil at 70% efficiency.



AMERICAN STRUCTURAL PRODUCTS COMPANY, TOLEDO 1, OHIO

SUBSIDIARY OF OWENS-ILLINOIS GLASS COMPANY



Announcing

. . . the newly-designed glass block,

PC SOFT-LITE PRISM B

—an important improvement in light control on sunlit exposures

PITTSBURGH® PC CORNING

PC Glass Blocks—The Mark of a Modern Building

PITTSBURGH CORNING CORPORATION

632 DUQUESNE WAY PITTSBURGH 22, PA.

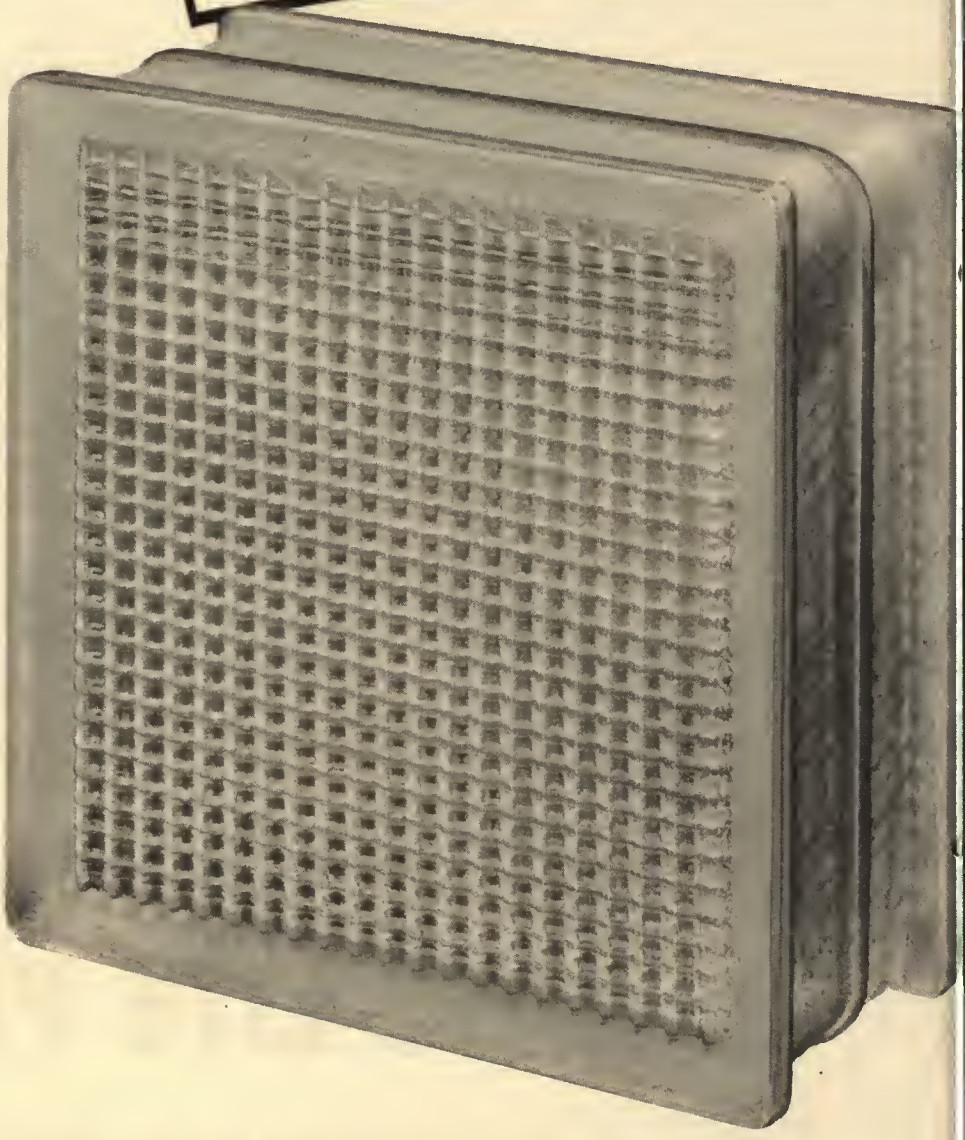
For better control o

THE REVOLUTIONARY NEW P

Another *first* For

The long established leadership of Pittsburgh Corning Corporation in technical research in the glass block industry is being maintained by the introduction of our latest improvement in design and construction, the new PC Soft-Lite Prism B Glass Block.

Pittsburgh Corning was first to introduce the glass-to-glass seal, which made glass blocks a completely practical building material; first to eliminate light color changes by using water-white glass; first to introduce the general vision block (Vue pattern) still unequalled in its field; first to use a fibrous glass diffusing and insulating screen (LX-75 patterns); and now—after years of development work and test installations in different parts of the country—first to offer you the unique advantages embodied in PC Soft-Lite Prism B Glass Blocks.



ITS DISTINCTIVE FACE PATTERN makes the PC Soft-Lite Prism B Glass Block a thing of beauty as well as utility. In panels of all sizes and shapes, these blocks lend a new attractive note to the outer appearance of all sorts of buildings, harmonize with all types of architecture. PC Soft-Lite Prism B Glass Blocks embody all the familiar advantages of other PC patterns—excellent insulating properties, freedom from repairs and replacement, quick and easy cleaning—plus the unique ability to distribute softly diffused daylight over large areas on sun exposures.

PC GLASS BLOCKS..

daylight on sun exposures—

SOFT-LITE PRISM B GLASS BLOCK

Pittsburgh Corning

Meets Daylighting Needs

Lighting engineers have long recognized the need for an improved means of daylighting classrooms, large offices, factories and department stores where the light, coming from openings exposed to sunlight, must be softly diffused and evenly distributed over large areas. They felt the need also to minimize brightness contrasts in task areas and to eliminate excess brightness contrasts on room-side surfaces of glass blocks.

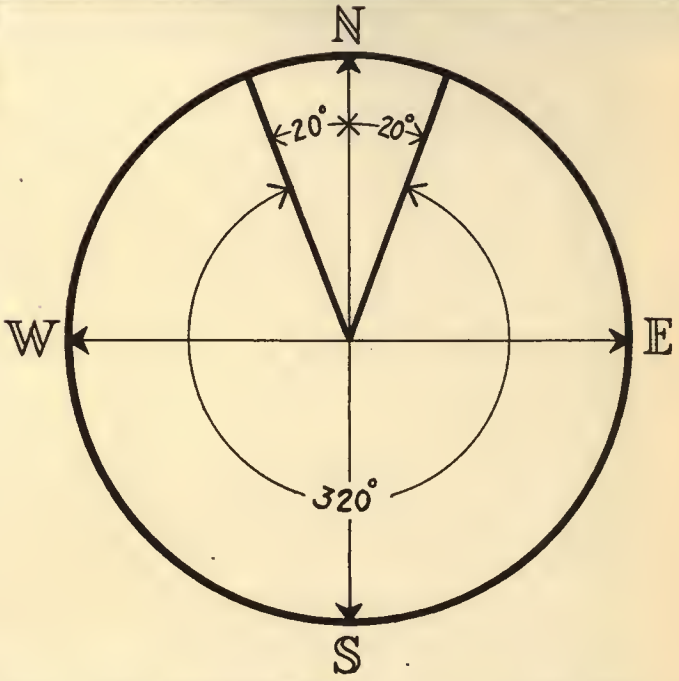
Under like conditions, the newly designed PC Soft-Lite Prism B Glass Blocks diffuse and refract incident daylight—including direct sunlight—over a greater area of reflecting ceiling, whence it is distributed more evenly over larger areas. The result is, more usable light in the right places.

New Prisms — New Soft-Lite Edge

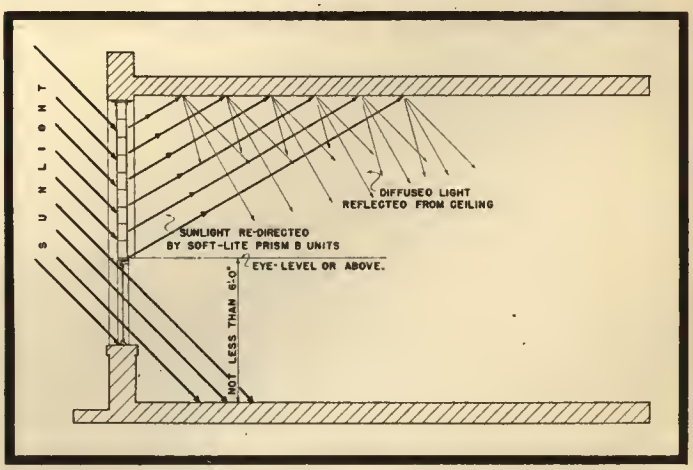
The lighting problems on East, South and West exposures include admittance of sufficient daylight without excess brightness, even on sunny days. This is accomplished—with PC Soft-Lite Prism B Glass Blocks—by a unique combination of interior prisms and the new Soft-Lite edge.

The prisms diffuse and direct the light to the reflecting ceiling whence it is distributed evenly over task areas. The Soft-Lite edge minimizes brightness contrasts between mortar joints, block edges and the remainder of the block face. In fact the new Soft-Lite edge transmits just enough light to provide a comfortable transition between the lighter block surface and the darker mortar joint.

If lighting rooms of all sizes in your buildings presents unusual problems, our lighting engineers will be glad to consult with you, to determine where and why you should use functional PC Glass Blocks to the best advantage. Also, we have recently published booklets—which give full information on the use of PC Glass Blocks in industrial, commercial and public buildings—which we shall be glad to mail to you without obligation. Just write to Pittsburgh Corning Corporation, Room 703-8, 632 Duquesne Way, Pittsburgh 22, Pa.



EAST, SOUTH, AND WEST EXPOSURES—comprising 320° of the compass—receive direct sunlight during certain hours of the day and seasons of the year. This chart illustrates this wide range of exposures where PC Soft-Lite Prism B Glass Blocks should he used to provide softly diffused, evenly distrihuted daylight without excess hrightness contrast. The 20° exposures on each side of true North are practically never exposed to the sun's rays—hence, do not present such an exacting lighting prohlem.



This diagram shows typical light paths into a room from a panel of PC Soft-Lite Prism B Glass Blocks. Incident daylight is diverted to a wide area of reflecting ceiling, whence it is distrihuted evenly over large areas.

...The Mark of a Modern Building

(A MODULAR PRODUCT)

In addition to their special light-controlling properties

PC SOFT-LITE PRISM B GLASS BLOCKS

embody all these well-known advantages of other PC patterns

Better Lighting. PC Glass Blocks provide an abundance of clear, diffused daylight without color change. Larger light openings and continuous panels admit more daylight and distribute it over larger areas.

Better Insulation. PC Glass Blocks have more than twice the insulating value of ordinary windows. Each block contains a hollow, sealed-in air space that is an effective heat retardant, so panels of PC Glass Blocks consist of many insulating units, thus help maintain temperatures at desired levels and reduce heating costs.

The insulating properties of PC Glass Blocks also eliminate waste space due to cold spots, chilling drafts and down draft near windows, which interfere with machine operation and make people uncomfortable.

Less Condensation. The use of PC Glass Blocks often proves advantageous where surface condensation on windows is a problem. For moisture does not condense on the warm side of PC Glass Blocks except under extreme conditions of temperature and humidity.

Less Infiltration of Dust and Grit. Harmful dust and grit cannot filter through panels of PC Glass Blocks. Dangerous or offensive gases, smoke and soot, also are excluded, preventing damage to delicate machinery and goods in process.

More Privacy. Since PC Glass Blocks are translucent—but not transparent (except the Vue pattern) —they admit plenty of diffused daylight, but still preserve privacy. They cut off unsightly and distracting views, tend to confine inside noises and to exclude distracting sounds which originate outside.

Better Air Conditioning. The insulating properties of PC Glass Blocks assure less heat loss in winter, less heat gain in summer. Solar heat transmission and radiation are reduced. All of which results in actual money savings and less wear and tear on heating and air-conditioning equipment.

Easier Cleaning. Large panels of PC Glass Blocks can be cleaned as single units. There are no small panes or muntins, so the smooth glass surface can be covered in one sweep. Translucent panels of PC Glass Blocks look clean long after ordinary windows would look streaked and spotty.

Lower Maintenance Cost. With PC Glass Blocks there is no window sash to check, rot or rust, to need replacement or repainting. There are no fragile panes of glass to need frequent replacement. The blocks are not easily marred or broken. If replacement of a single block should become necessary, it can be done easily by any mason.

Easier Installation. Masons find PC Glass Blocks easy to lay. Their edge construction forms a "key-lock" mortar joint, providing a full bed of mortar, yet permitting a visible joint of only about ¼ inch, resulting in a trim panel that is pleasing to the eye. The "key-lock" joint is also easier to handle in laying.

For further information or any technical data you need, write to Pittsburgh Corning Corporation, 632 Duquesne Way, Pittsburgh 22, Pa. Also makers of PC Foamglas Insulation.

Manufactured by

PITTSBURGH CORNING CORPORATION

Distributed by

PITTSBURGH PLATE GLASS COMPANY

by W. P. Fuller & Co. on the Pacific Coast

and by Hobbs Glass Ltd. in Canada

Litho in U.S.A. G81264—15M—8-48

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THE MARK OF A MODERN BUILDING

PC Glass Blocks

A PRODUCT

© Pittsburgh Corning Corporation 1948

PITTSBURGH PC CORNING ®

S. J. Kessler, Architect

PITTSBURGH CORNING CORPORATION, PITTSBURGH, PA.

PC Glass Blocks ... the one building

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● PC Glass Blocks have won favor among architects mainly for one reason: They do so many things so well.

Panels of PC Glass Blocks add an attractive modern touch to the outer aspect of any building. They provide ample diffused daylight for interiors and can direct the light to areas where it is most needed. They possess excellent insulating properties. They insure privacy, prevent dust infiltration. PC Glass Blocks minimize maintenance, replacement and repairs.

All these features are good reasons why you should specify PC Glass Blocks for all types of industrial buildings, for commercial and public buildings, for schools, hospitals, and homes. And they harmonize with any architectural plan.

Listed below are eleven important advantages your clients get with PC Glass Blocks. They are amplified and illustrated in the following pages.

When you encounter unusual lighting problems, our technical staff will be glad to consult with you. Also, we have published booklets which contain complete, authoritative information on the use of PC Glass Blocks in mills, plants and factories, in commercial, public and institutional buildings, in dwellings of all types and sizes. We shall be glad to send you free copies upon request.

PC GLASS BLOCKS

1. Flood working areas with natural daylight
2. Aid temperature and humidity regulation.
3. Cut maintenance costs.
4. Reduce condensation on light-transmitting areas.
5. Clean easily and thoroughly.
6. Create a neat, modern appearance.
7. Permit greater privacy.
8. Provide effective sound insulation.
9. Increase usable floor area.
10. Possess insulating qualities which reduce heating costs.
11. Prevent infiltration of harmful dust and grit.

material that assures all these advantages

Better Lighting. PC Glass Blocks provide an abundance of diffused daylight. Proper selection of pattern prevents glare near light openings and transmits needed light to remote areas that would otherwise be waste space or require artificial lighting.

Better Insulation. PC Glass Blocks have more than twice the insulating value of ordinary windows. Each block contains a hollow, sealed-in air space that is an effective heat retardant. Panels of PC Glass Blocks consist of many small insulating units, which give them a very low coefficient of heat transfer. Thus they help maintain temperatures at desired levels, even during extremes of summer and winter weather.

Less Surface Condensation. The use of PC Glass Blocks often proves advantageous where surface condensation on windows is a problem. For moisture does not condense on the warm side of PC Glass Block panels except under severe temperature and humidity conditions. Less moisture taken from the air by condensation on glass areas means better control of humidity.

Less Infiltration of Dust and Grit. Harmful dust and grit cannot filter through panels of PC Glass Blocks. They also exclude dangerous or offensive gases, smoke and soot. Thus they prevent damage to all sorts of buildings and their contents, from fine draperies in the home to precision machinery and goods in process in mills and factories.

More Privacy. Translucent—not transparent—PC Glass Blocks admit plenty of diffused daylight, but still preserve privacy. Prying eyes cannot see through the patterned blocks. They cut off unslightly and distracting views. When outdoor vision is desired PC Vue Blocks can be included in the panel.

Disturbing noises are also dampened by PC Glass Blocks. Their hollow construction tends to confine inside noises and to exclude distracting sounds which originate outside.

More Usable Floor Space. Since PC Glass Blocks distribute ample light over wider areas, full use may be made of all floor space in all sorts of buildings. This is especially important in offices and factories where additional desks or machines may be installed in the same space.

The insulating properties of PC Glass Blocks also eliminate waste space near light openings. In cold weather, ordinary windows allow outdoor temperatures to affect room temperature. These cold spots—and also chilling drafts which interfere with the comfort of people and the operation of precision machinery—are eliminated when panels of PC Glass Blocks are used in large light openings.

Better Air Conditioning. The three chief aims of air conditioning—temperature control, humidity control and air-cleaning—are all aided by the use of PC Glass Blocks. Their insulating properties assure less heat loss in winter, less heat gain in summer. Humidity levels are less likely to be upset by condensation. Solar heat transmission and radiation are reduced. Dust and grit cannot filter in, for each panel is a tightly sealed unit. All of which results in actual money savings and less wear and tear on heating and air-conditioning equipment.

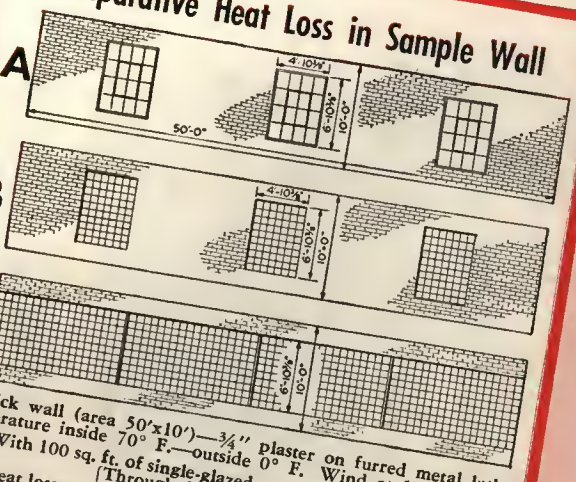
Easier Cleaning. Large panels of PC Glass Blocks can be cleaned as single units. Since there are no small panes or muntins to interfere, the smooth, glass and cement surface can be covered in one sweep. Many maintenance men have found that one man, with a hose and a long-handled brush, can do a satisfactory cleaning job quickly and easily. And the translucent panels of PC Glass Blocks continue to look clean long after ordinary windows would look spotty or streaked with dirt.

Lower Maintenance Costs. When panels of PC Glass Blocks are used in outer wall light openings and in partitions, maintenance costs are minimized. There is no unsightly and dangerous window sash to rot and corrode, to need replacement or repainting. There are no fragile panes of glass to need frequent replacement. PC Glass Blocks make a permanent type of panel. Once installed, the blocks are not easily marred or broken. If replacement of a single block should become nccessary, it can be done easily by any mason.

Easier Installation. Masons find PC Glass Blocks easy to lay. Their edge construction forms a "key-lock" mortar joint, providing a full bed of mortar, yet permitting a visible joint of only about ¼ inch, resulting in a trim panel that is pleasing to the eye. This "key-lock" joint is also easier to handle in laying.

PC Glass Blocks are made of two pieces of formed glass, fused together, enclosing a dead air space. They have the same insulating value as an 8-inch brick wall, practically the same as an 8-inch hollow tile wall, more than twice that of ordinary windows.

Comparative Heat Loss in Sample Wall



8" brick wall (area 50'x10')—¾" plaster on furred metal lath. Temperature inside 70° F.—outside 0° F. Wind at 15 m.p.h.

A With 100 sq. ft. of single-glazed steel sash in three openings—
Heat losses—Through brick ..... 8960 B.T.U. per hr.
Through sash ..... 7910 B.T.U. per hr.
Through total wall area. 16870 B.T.U. per hr.

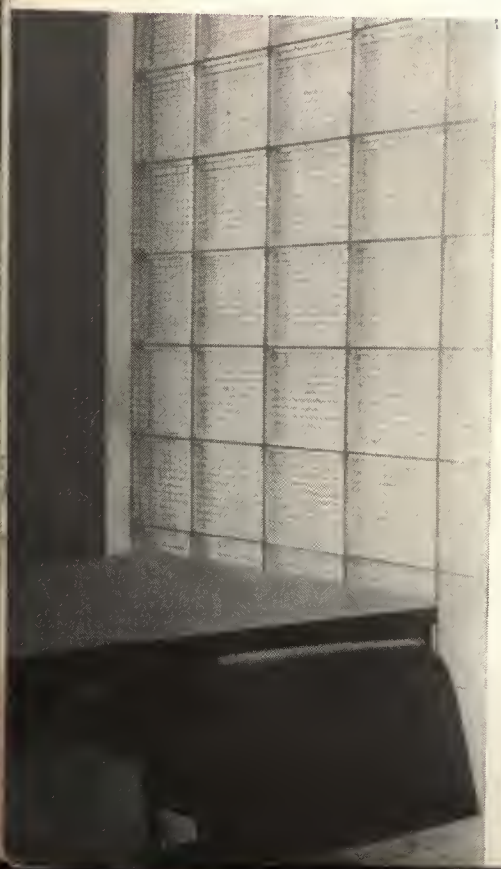
B With 100 sq. ft. of 8" PC Glass Blocks in three panels—
Heat losses—Through brick ..... 8960 B.T.U. per hr.
Through glass blocks.... 3430 B.T.U. per hr.
Through total wall area. 12390 B.T.U. per hr.
Heat loss through light-transmitting area less than half, with a reduction of 26% of total heat loss through the entire wall.

C With 340 sq. ft. of 8" PC Glass Blocks—
Heat losses—Through brick ..... 3580 B.T.U. per hr.
Through glass blocks ... 11660 B.T.U. per hr.
Through total wall area. 15240 B.T.U. per hr.
Heat loss 90% of panel A, but with twice as much light.

PLENTY OF NATURAL DAYLIGHT TRANSMITTED THROUGH AN *Insulated Wall*

Because of their excellent insulating properties, PC Glass Blocks can be used in large light-transmitting areas with minimum disturbance of room temperature and humidity. They effectively retard heat transfer and solar heat transmission. Yet the larger openings provide more generous quantities of daylight, softly diffused by the patterns of the block faces. This more efficient use of natural light is an important economy, since it helps reduce the need for artificial lighting.

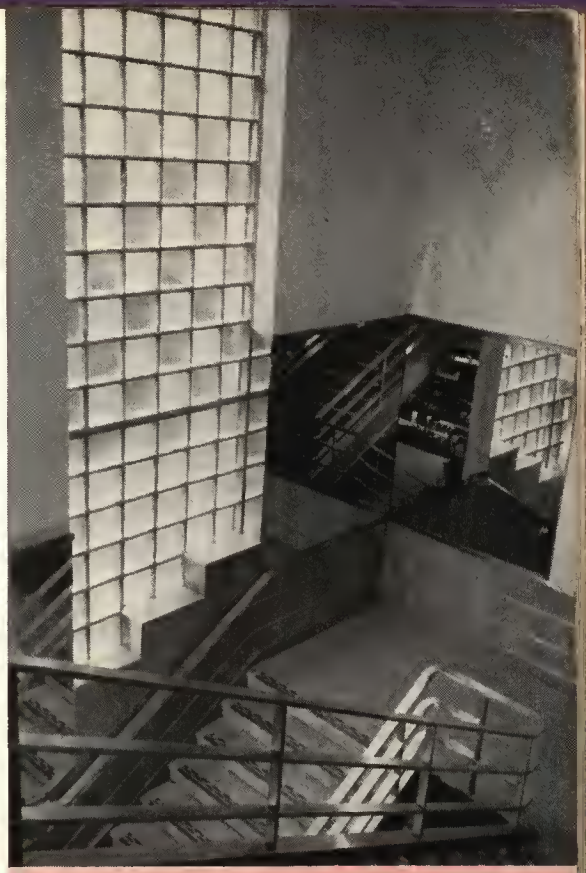
PC GLASS BLOCKS direct plenty of daylight over wider areas yet temperature and humidity levels are more easily controlled.



EXACTING DETAILED WORK is done more carefully when PC Glass Blocks exclude distracting sights and sounds.

PC Glass Blocks

FOR ATTRACTIVE STORES AND OFFICE BUILDINGS



PLENTY OF LIGHT from the panel of PC Glass Blocks makes this stair landing safer —and conceals an unsightly view.

IN THIS DRAFTING ROOM, all PC Glass Blocks below eye level are specially designed to diffuse light, prevent glare. In the rest of the panel, Prism Light-Directing Blocks deliver reflected light far into the room.

THIS MODERN BANKING ROOM is plentifully supplied with cheerful daylight by large panels of PC Glass Blocks, set high in the walls.

Sutton, Whitney and Aandahl, Architects

AMPLE DAYLIGHT from this large panel of PC Glass Blocks brings out the colorful beauty of the goods displayed, assures quiet comfort for customers.

Ely Jacques Kahn, Architect

PC Glass Blocks

FOR DISTINCTIVE APARTMENTS, HOTELS, RESTAURANTS, BARS

TALL PANELS of PC Glass Blocks strike a modern note in this attractive apartment house. They also admit plenty of light into the foyer, keep out dust, and are easily cleaned.

J. Bradley Rust, Architect

IN THIS ATTRACTIVE LOBBY, large panels of PC Glass Blocks provide plenty of cheerful daylight. Their beauty, easy cleaning and low maintenance cost make PC Glass Blocks the ideal building material for hotels.

Book and Paris, Architects

PC GLASS BLOCKS provide ample daylight to make your restaurant gayer, more cheerful—to make food look tastier. Also they enable your guests to dine in quiet and privacy.

George Dahl, Architect

COLORED LIGHTS shed a convivial glow through PC Glass Blocks in this fashionable bar. And modern-looking places are the favorite gathering spots of modern, spending people.

Frank Smart, Architect

PC Glass Blocks

FOR MODERN PUBLIC BUILDINGS

THIS UP-TO-DATE sewage treatment plant is beautiful as well as practical. The curved and flat panels of PC Glass Blocks harmonize perfectly with the trim modern façade of the building. Designed and constructed under the supervision of the Department of Public Works, City of New York.

TRUE ARCHITECTURAL BEAUTY is achieved in this modern building by the combination of PC Glass Blocks and wrought metal over the entrance doors.

Eugene John Stern and Wittenberg and Delony, Architects

OPERATING ROOMS need lots of diffused daylight. PC Glass Block panels supply it. They also guarantee quieter hospital rooms and better control of temperature and humidity.

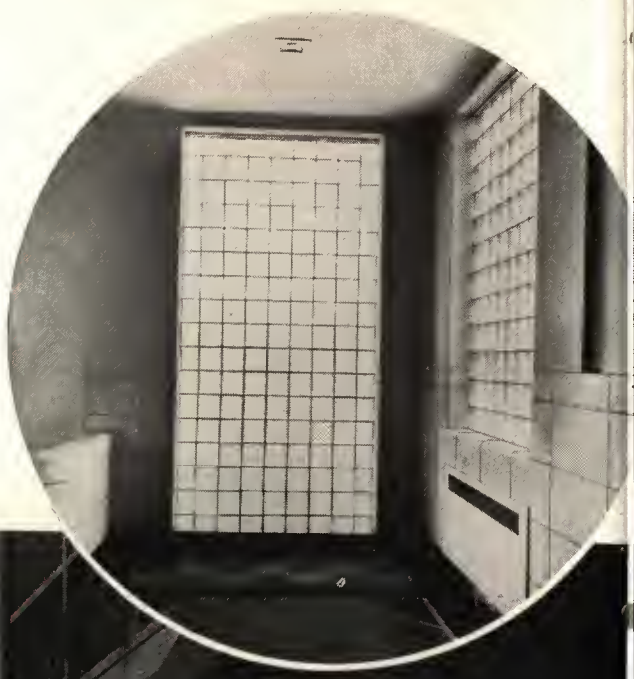
IN POWER HOUSES, huge lighting areas are needed for large rooms. PC Glass Blocks transmit ample daylight into the expansive areas, yet prevent the excessive heat loss that ordinary windows would allow.

PC Glass Blocks

FOR WELL-LIGHTED SCHOOLS

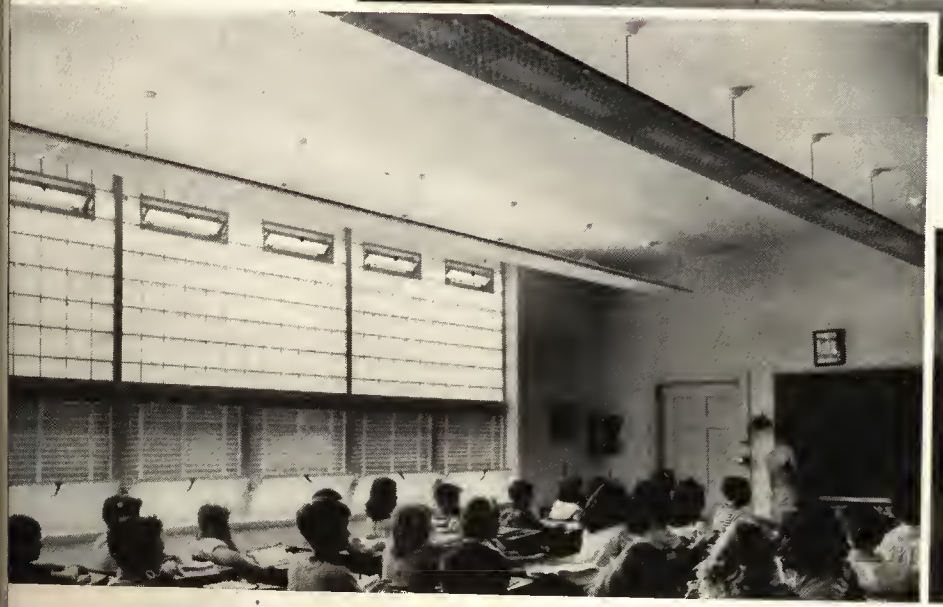
PC GLASS BLOCKS do double duty here. They present an attractive appearance and also flood the stairway and hall with daylight. Large panels of PC Glass Blocks are also extremely practical for school use in swimming pools, shower rooms, auditoriums and laboratories.

Louis H. Gerding, Architect



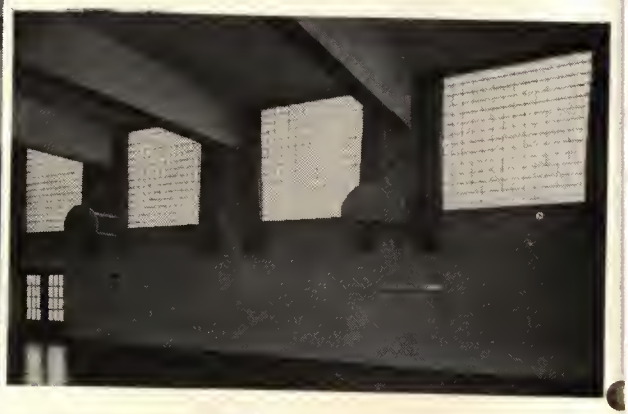
THE LIGHTING PROBLEMS in modern schools are solved successfully by large panels of PC Glass Blocks. In this imposing school, used in combination with standard sash, they also reduce fuel and maintenance costs.

Overend and Boucher, Architects



IN THIS CLASSROOM, prisms on the inside faces of PC Prism Light Directing Glass Blocks direct daylight upward to the ceiling where it is reflected to desks far from window openings. PC Glass Blocks are used here, effectively and attractively, in combination with standard sash.

Hadley & Atkinson, Architects



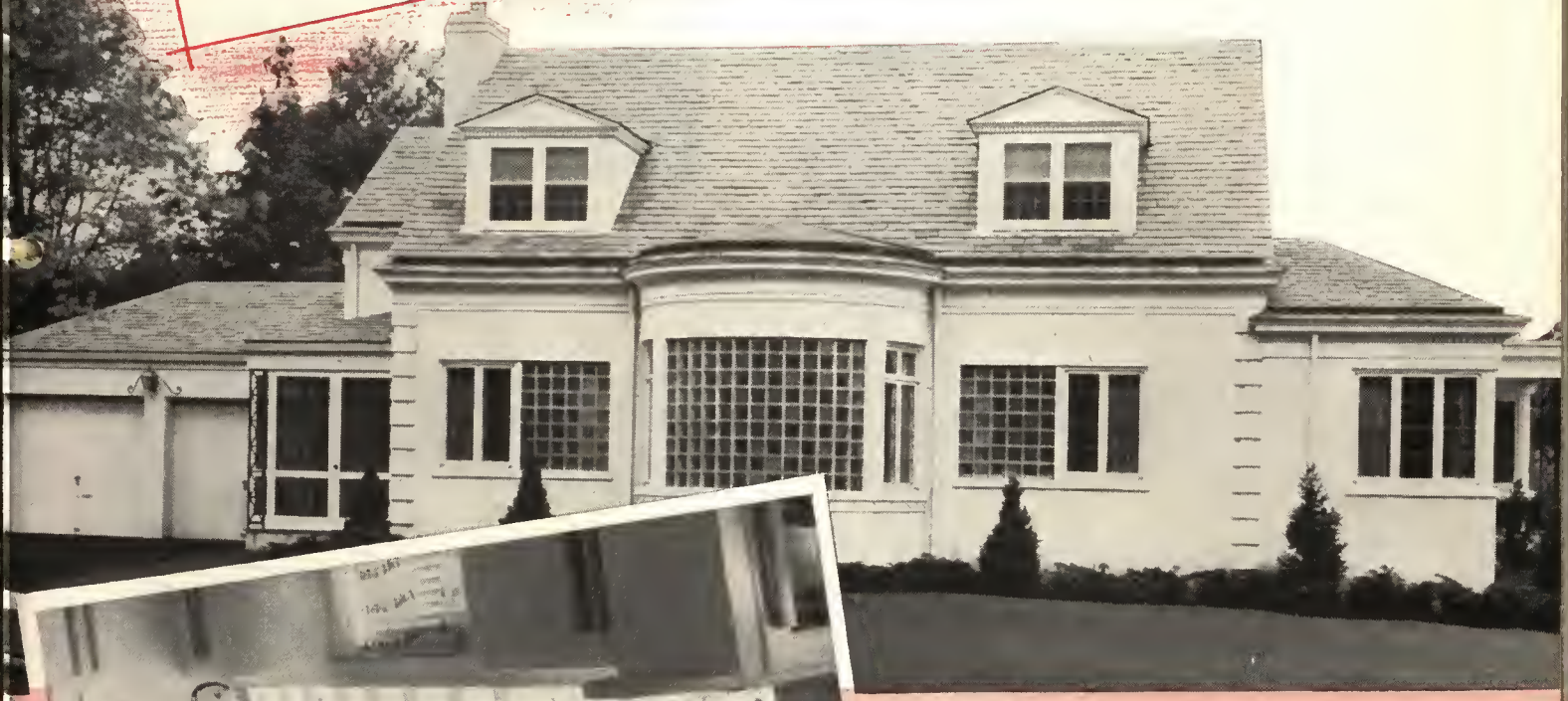
SCHOOL GYMNASIUMS can be adequately and safely lighted by PC Glass Blocks. The large panels also reduce heat losses, preserve privacy and minimize the danger of breakage.

Charles F. Smith, Architect

PC Glass Blocks

FOR CHARMING HOMES OF ALL SIZES

IN NEW HOMES and in modernizing projects, panels of PC Glass Blocks add a note of distinction to the handsome outer aspect. They also contribute to the bright, cheery interior, arranged for convenience and comfort. In outer walls, and in partitions and screens, PC Glass Blocks dress up every room in the house, bring out the full colorful beauty of furnishings and decoration.



THE GRACEFUL BAY and matching panels of PC Glass Blocks are attractive features of this charming home. They provide a generous supply of light by day and glow with friendly welcome when lights are lit.

William J. Fitzsimmons, Architect

CHEERFUL DIFFUSED DAYLIGHT, supplied by PC Glass Blocks, makes this modern kitchen a pleasant place to work. The light can be concentrated on working surfaces, and also distributed throughout the entire room.

THE PARTITION AND BAR of PC Glass Blocks in this distinctive game room are practical as well as ornamental. Concealed colored lights shed a convivial glow. The blocks are easily kept clean, are strong and durable, do not break easily. In every home, from top to bottom, there are countless places where PC Glass Blocks can contribute more beauty, convenience and comfort.

PC Glass Blocks

IMPROVE OPERATING EFFICIENCY . .

PC Glass Blocks have won wide use in industry, both for new construction and for sash replacement. Maintenance and operating men have found many places where their use has proved advantageous. Here are a few typical plants where the use of PC Glass Blocks resulted in more efficient operation and lower costs.

FOOD—Pureness of the product, government inspection and public good will all demand that every part of the plant be spick-and-span. Not only are PC Glass Block panels easy to clean, but their appearance gives the plant a bright, clean look. Glass block panels do not permit infiltration of dust, spores, or other contaminating elements.

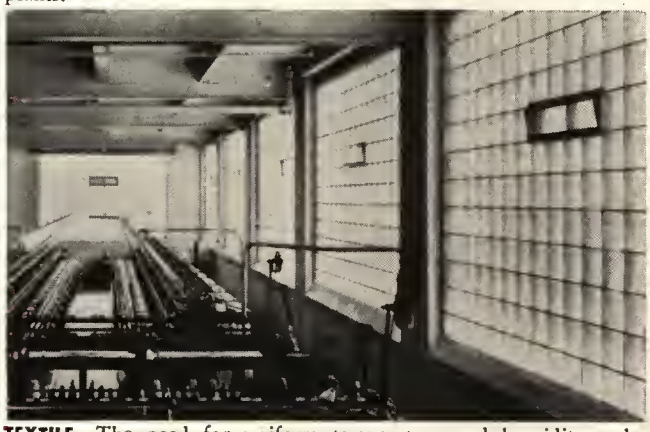
POWER PLANTS—By using glass blocks in power plants, plenty of daylight is provided—with less heat loss, and with complete privacy. And the sound insulation provided by glass blocks keeps power house noises from disturbing occupants of adjacent buildings.

PAPER—Extremely high temperatures are necessary for paper drying, and consequent high humidities make paper mills drip with moisture. This moisture is acid and makes maintenance of ordinary sash both troublesome and costly. Light-transmitting areas should be insulated and sealed for maximum efficiency. So it can be readily seen why the use of glass blocks is such a "natural" here.

MACHINE SHOPS—Where precision is important, temperature variations can't be allowed. PC Glass Blocks permit use of precision machinery nearer outside walls than would be possible with the greater heat loss of ordinary windows.

OFFICES, CAFETERIAS and many other locations can profit from the cleanliness and privacy provided by PC Glass Block panels.

CHEMICAL—It pays here to avoid window structures that are highly susceptible to acid atmosphere. Wood and steel sash require frequent and costly maintenance—glass blocks are little affected by acid atmosphere and actually lower maintenance costs under such conditions. Because temperature control is important to uniformity of production—and because dirt infiltration must be at a minimum to assure purity of chemicals, glass blocks are widely used for chemical plants.



TEXTILE—The need for uniform temperature and humidity makes glass blocks ideal here. Hosiery mills, for example, operate finely-adjusted machinery, so they can't take chances with temperature changes. Throwing rooms require high humidity that readily destroys ordinary sash. And in dye houses, where high acid-content atmospheres prevail, glass blocks help cut maintenance costs.

INDUSTRIAL PLANTS—PC Glass Block construction is ideal for a wide variety of plants. There's complete privacy and good lighting for precision work. PC Glass Blocks can be installed by regular masons.

Designed by the Plant Engineering Section of the Arsenal and the U. S. Engineers

. . CUT OPERATING COSTS *in factories*

Plenty of diffused daylight, distributed over wider areas by PC Glass Blocks, means more machines and work benches in the same floor space, better production—and more of it—from individual workers. That is how lighting panels of PC Glass Blocks improve conditions and reduce operating costs.

THIS PICTURE SHOWS how precision machines in a textile mill can be placed close to light openings of PC Glass Blocks. The insulating qualities of the blocks prevent temperature fluctuations that would interfere with machine operations.

IN THIS PAPER MILL, panels of PC Glass Blocks provide plenty of light and help maintain desired temperature levels. The blocks, being glass, withstand extreme humidity. There is no sash to check, rust or rot, no repainting or replacement.

. . . the ideal material for sash replacement

When worn window sash needs replacement, the problem can be solved permanently by installing PC Glass Blocks. Then there will be no further fear of rotting, rusting, frequent repairs and repainting. PC Glass Blocks also distribute daylight to all parts of large workrooms and cut down heat losses through large light openings.

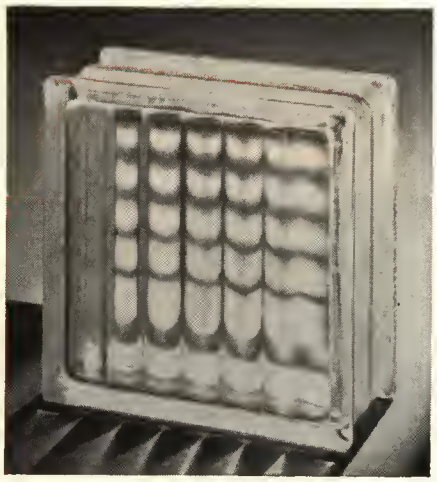
THIS BROOKLYN PLANT, formerly a silk mill, was converted to rayon production. For the rayon process, high humidity was required and temperatures had to be controlled within close limits—conditions which could not uniformly be maintained with single-glazed windows. PC Glass Blocks were chosen for sash replacement because they provide effective insulation for light-transmitting areas, thus help to maintain required conditions.

(Subject to change without notice)

PATTERNS	SIZES AND SHAPES AVAILABLE					
	5¾" Square	7¾" Square	11¾" Square	5¾" Corner	7¾" Corner	7¾" Radial
Argus	●	●	●	●	●	●
Argus Parallel Flutes	●	●	●			
Bristal		●			●	●
Decara	●	●	●	●	●	●
Druid		●			●	●
Essex		●			●	●
Prism Light-Directing		●				
Reeded-Decara	●	●	●	●	●	●
Saxan	●	●	●	●	●	●
Vue		●				●
Bristal LX-7S		●			●	●
Druid LX-7S		●			●	●

PC Glass Blocks AVAILABLE IN

For light transmission data for all blocks, see page 15



ARGUS

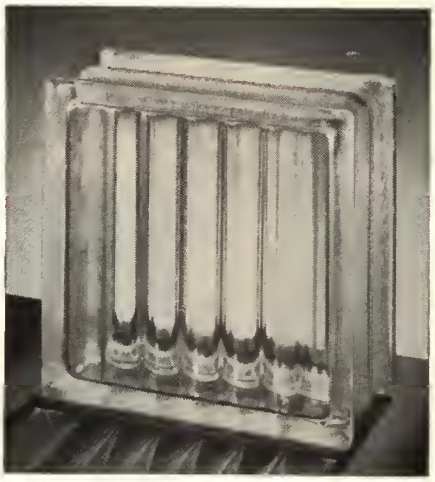
1. A conventional pattern designed for general use, both decorative and utilitarian.

2. High light transmission, good light diffusion.

3. Can be laid with flutes vertical or horizontal on room side with equally pleasing and efficient results. Caution: When used in combination with corner or radial blocks, if pattern match is desired, the standard blocks must be laid with flutes horizontal on room side.

4. Smooth outside faces permit maximum cleanability.

5. Pattern description: Smooth outside faces, interior flutes identical, assembled at right angles.



ARGUS PARALLEL FLUTES

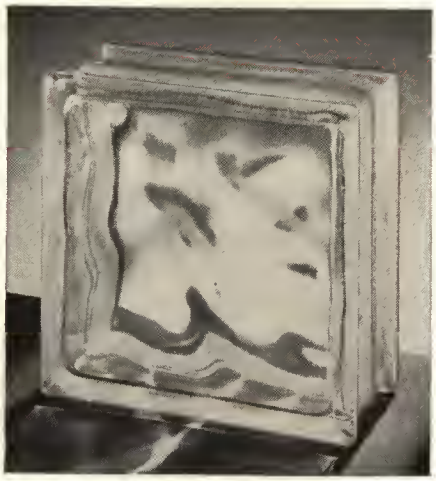
1. A conventional pattern designed for general use, both decorative and utilitarian.

2. High light transmission, good light diffusion.

3. Can be laid with flutes vertical or horizontal with equally pleasing and efficient results. Caution: When used in combination with corner or radial blocks, pattern match can be obtained on only one side of panel.

4. Smooth outside faces permit maximum cleanability.

5. Pattern description: Smooth outside faces, interior flutes identical, and parallel.



DECORA

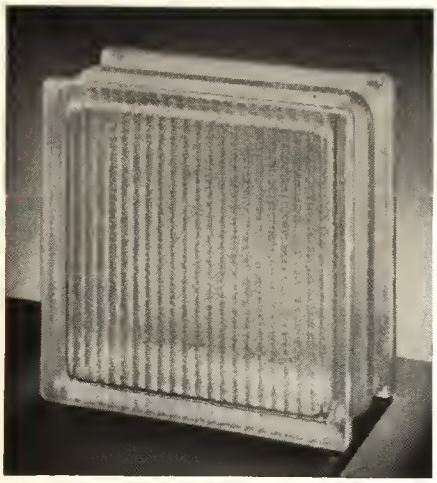
1. A decorative pattern ideally suited to harmonize with both modern and conventional design.

2. High light transmission with irregular diffusion and high translucency.

3. Asymmetric design permits laying without regard to pattern.

4. Smooth outside faces insure maximum cleanability.

5. Pattern description: Smooth outside faces, asymmetric design on both interior faces.



BRISTOL

1. Designed to provide softer, more diffused light.

2. Should be laid with exterior flutes vertical.

3. Cleanability maintained by the smooth exterior flutes and lightly etched border.

4. Pattern description: Narrow vertical flutes and lightly etched border on both outside faces, and flat etched inside faces.

NOTE: ***This block is supplied in the 7¾" sizes only.***

DRUID

1. Designed to provide high light transmission and closely match the Prism Light-Directing unit. For use on elevations without sun exposure when Prism Light-Directing units are used on adjacent sun exposure elevations.

2. Must be laid with exterior flutes vertical.

3. Cleanability is maintained by the smooth exterior flutes and lightly etched border.

4. Pattern description: Narrow vertical flutes and lightly etched border on both outside faces, horizontal flutes on both inside faces. Closely matches appearance of Prism Light-Directing unit.

NOTE: ***This block is supplied in the 7¾" sizes only.***

ESSEX

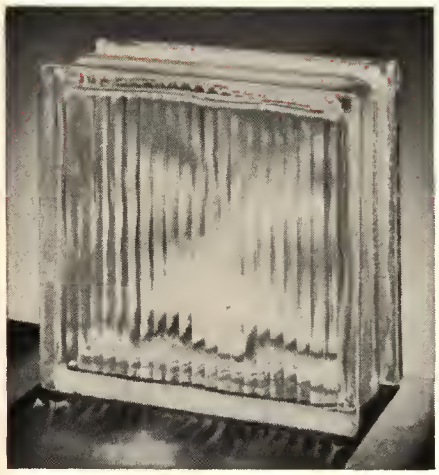
1. Specially designed for low light transmission. For use below eye-level in panels containing Prism Light-Directing Blocks and on elevations subjected to severe exposure to direct sunlight where Prism Light-Directing Blocks are not adaptable.

2. Must be laid with exterior flutes horizontal.

3. Pattern description: Horizontal spreading flutes and lightly etched borders on both exterior faces, vertical prisms on both interior faces.

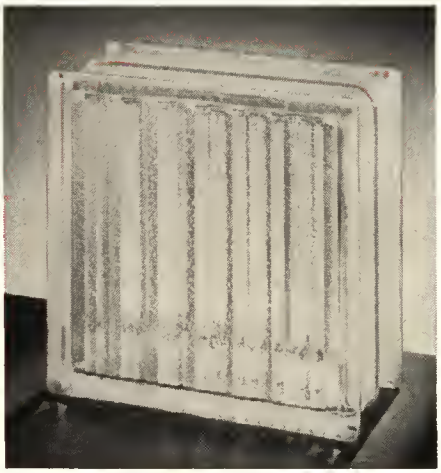
NOTE: ***This block is supplied in the 7¾" sizes only.***

A WIDE SELECTION OF SIZES AND PATTERNS



REEDED-DECORA

1. A modified Decora design to increase irregular pattern effects.
2. High light transmission with good diffusion and superior obscurity.
3. Should be laid with exterior reeds vertical.
4. Cleanability is maintained by the smoothly rounded exterior reeds.
5. Pattern description: Narrow parallel reeds on both exterior faces, asymmetric design on both interior faces.



SAXON

1. A pleasing uniform pattern designed for even light diffusion and brightness reduction, but with good light transmission.
2. Interior etched surfaces with exterior reeds produce maximum obscurity.
3. Should be laid with exterior reeds vertical.
4. Cleanability is maintained by the smoothly rounded exterior reeds.
5. Pattern description: Narrow parallel reeds on both exterior faces, parallel to wide flutes on both interior faces. Both interior faces are etched.

VUE

1. A pattern employing clear glass surfaces to permit sufficient general vision of large objects or movements beyond the panel to prevent the "shut-in" feeling. However, visibility of sharp details is not possible under most conditions.
2. High light transmission.
3. Cleanability is assured by smooth exterior surfaces.
4. Pattern description: Clear, smooth interior and exterior surfaces.

NOTE: *This block supplied in the 7¾" sizes only.*

PRISM LIGHT-DIRECTING

1. Specially designed to control the direction of sunlight transmitted by the block, and under proper conditions, to provide improved natural illumination.
2. By means of unlike prisms on the two inside faces, the greater part of the transmitted light is directed upward—away from the direct vision or glare zone—to the ceiling, where it may be reflected downward to provide indirect "daylighting."
3. Can be set in one position only—block is marked to indicate correct setting. Must not be used below eye level. For lower portion of panels below eye level use Essex Blocks.
4. Smooth vertical exterior flutes and lightly etched border insure easy cleaning.
5. Pattern description: Narrow vertical flutes and etched border on both outside faces, horizontal prisms on both inside faces.

NOTE: *This block supplied in 7¾" size only.*

BRISTOL LX-75 *(with a fibrous glass screen)*

1. Specially designed for use on sun exposures to provide softer, more diffused light, with greatest reduction in brightness, and to reduce solar heat transmission.
2. A fibrous glass screen insert in combination with face pattern of block produces maximum light diffusion and obscurity, while sacrificing some light transmission.
3. Should be laid with exterior flutes vertical.
4. Cleanability is maintained by the smooth exterior flutes and lightly etched border.
5. Pattern description: Narrow vertical flutes and lightly etched border on both outside faces, flat etched inside faces, and a fibrous glass screen securely sealed within the block.

NOTE: *This block is supplied in the 7¾" sizes only.*

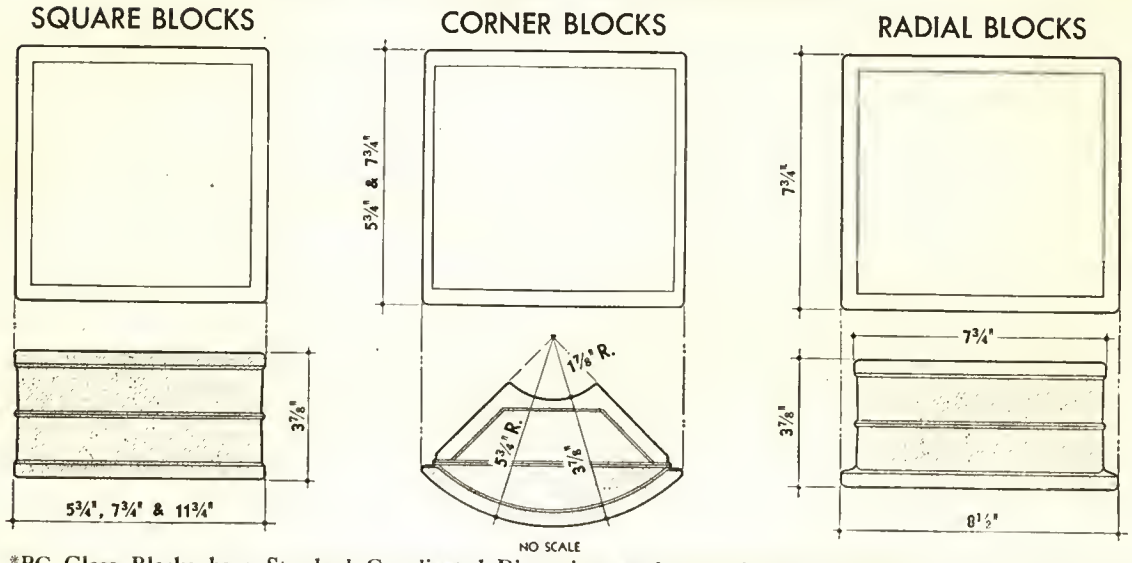
DRUID LX-75 *(with a fibrous glass screen)*

1. Specially designed to provide a light-diffusing, closely-matching unit for use below eye level in panels containing Prism Light-Directing Blocks, and at the same time to provide noticeable reduction in brightness and solar heat transmission.
2. A fibrous glass screen insert in combination with face pattern of block produces good light diffusion and obscurity, while sacrificing some light transmission.
3. Must be laid with exterior flutes vertical.
4. Cleanability is maintained by the smooth exterior flutes and lightly etched border.
5. Pattern description: Narrow vertical flutes and lightly etched border on both outside faces, horizontal flutes on both inside faces, and fibrous glass screen securely sealed within the block. Closely matches appearance of Prism Light-Directing Block.

NOTE: *This block is supplied in the 7¾" sizes only.*

PC Glass Blocks — A MODULAR PRODUCT*

SIZES AND SHAPES AVAILABLE



*PC Glass Blocks have Standard Coordinated Dimensions, and meet the requirements of American Standards Association Project A62, and conform to the American Standard Basis for Coordination A62.1-1945

PITTSBURGH NV-3389 WATERPROOFING COMPOUND—To be added to the mortar to conform with PC specifications. Use one (1) quart per bag of cement.

Available in one-quart, one-gallon, and five-gallon containers.

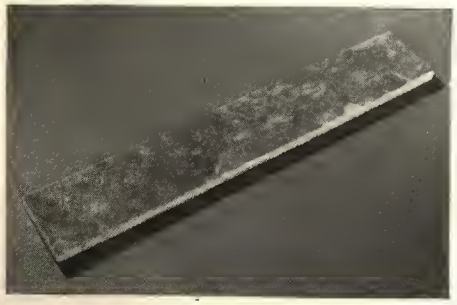
® PITTSBURGH PC CORNING

ACCESSORIES

These PC accessory materials can be obtained from all suppliers of PC Glass Blocks

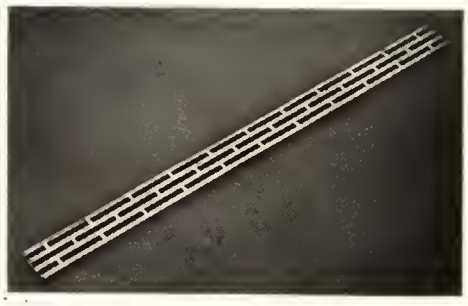
PC ASPHALT EMULSION—To be used on all sills to form a waterproof joint. Also used to adhere expansion strips to side and head jambs before installing glass blocks. See specifications for proper application. For sills and adhering of expansion strips, estimate one (1) gallon for approximately 150 lin. ft.

Available in one-quart, one-gallon, and five-gallon containers.



PC EXPANSION STRIPS—To be used in expansion spaces at side and head jambs installed in accordance with PC specifications.

Available in the following sizes:
⅜"x4⅛"x25" } (For use in chase construction)
⅜"x4⅛"x25" }
For wall anchor construction, standard 4⅛" wide strips can easily be cut to 3" width required.



PC WALL ANCHORS—To be used for supporting panels up to 100 sq. ft. in area where permitted by building code requirements. Spaced and installed in accordance with PC specifications. Wall Anchors are No. 20 gauge perforated steel galvanized after fabrication.

Available in 2'-0" lengths 1¾" wide.

PC WALL TIES—To be used in horizontal joints of glass block panels, spaced and installed in accordance with PC specifications. Wall Ties are formed of two No. 9 galvanized wires spaced 2" apart with No. 14 galvanized cross wires welded every 8".

Available in 8' lengths.

PITTSBURGH PC CORNING

TECHNICAL DATA

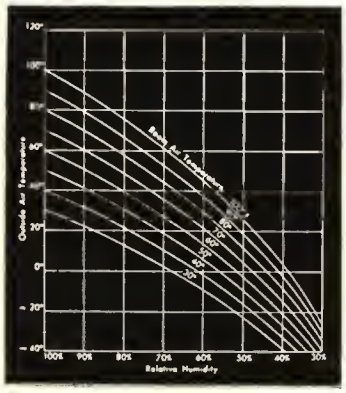
THERMAL INSULATION

Tests run during the past several years have established values for the over-all heat transfer coefficient "U" as follows: under still air conditions: ribbed face block 0.38, smooth face 0.40; with 15 mile per hour wind; ribbed face block 0.46, smooth face 0.49. In computing heat losses through panels for design purposes, it is recommended that a "U" value of 0.49 be used for all block sizes and face patterns.

SURFACE CONDENSATION

Due to the high insulating value of PC Glass Blocks, condensation will not start forming on the room side of glass block panels until the outside air has reached a temperature much lower than that necessary to produce condensation on single-glazed windows. The accompanying chart shows at what temperatures condensation will form.

OUTDOOR TEMPERATURE REQUIRED TO PRODUCE CONDENSATION ON THE ROOM SIDE SURFACE OF PC GLASS BLOCK PANELS



(For example, the chart shows that with inside air at 70° F. and relative humidity at 40%, condensation will not begin to form on the interior surfaces of a glass block panel until an outdoor temperature of —14° is reached. Under similar conditions with single-glazed steel sash, moisture will begin to form when the outdoor temperature reaches +33° F.)

LIGHT TRANSMISSION

Light transmission, through the faces of individual glass blocks, has been measured by two somewhat different methods, in the absence of any generally accepted standard. Average values for each PC pattern are:

Pattern	% Transmission of Incident Light
Argus	80
Argus Parallel Flutes	80
Bristol	70
Decora	80
Reeded-Decora	80
Druid	80
Essex	50
Prism Light-Directing	65
Saxon	80
Vue	85
Bristol LX-75	55
Druid LX-75	60

Additional data on the performance of the Essex, Prism Light-Directing and LX-75 units are given on Pages 16 and 17.

SOUND INSULATION

Glass block panels have sound insulation properties equal to or better than other forms of masonry construction having equal weight per unit surface area, and are decidedly superior to single-glazed sash.

Tests give sound reduction factors for standard glass block panels of 37.6 to 42.0 decibels, a value closely approximating that for a 4-inch hollow clay tile wall plastered both sides.

CRUSHING STRENGTH

Repeated tests made on square wallettes laid up with PC Glass Blocks show a minimum panel compressive strength of 400 to 600 pounds per square inch of gross loaded area.

This crushing strength is well above that of many accepted masonry constructions, and is entirely adequate to resist safely the forces created by conditions within the glass block panels themselves.

However, glass block construction should never be used for loadbearing walls or panels. Adequate provision must be made for the support of construction above glass block panels, and expansion joints must be provided at head and jambs of all panels in exterior walls.

BOND STRENGTH

PC Glass Blocks have a special grit-bearing, moisture-and-alkaline-resisting, plastic coating on all mortar edges. This insures a complete and permanent bond between the glass and the cement mortar and provides a panel construction having a high degree of wind resistance and watertightness.

WIND RESISTANCE

From wind pressure tests on PC Glass Block Panels ranging in area from 50 sq. ft. (5'x10') to 256 sq. ft. (16'x16'), it has been found that any panel properly supported at its edges and within the area limits recommended will withstand a wind load of 20 pounds per sq. ft. with a safety factor of at least 2.7.

SOLAR HEAT GAIN

The use of glass blocks for light-transmitting areas results in a marked reduction in the total solar heat gain as compared with ordinary windows. This factor is of considerable advantage in buildings that are properly air conditioned, but does not eliminate the need for adequate ventilation or shading in non-air-conditioned rooms.

Based upon extensive tests of standard patterns, suggested figures for design computations are a maximum hourly rate of 41 B.T.U. and maximum daily rate of 250 B.T.U. total heat gain per square foot of glass block panel on South exposure, 40 degrees North Latitude for August 1.

More complete data on solar radiation appear in the current Guide of the American Society of Heating and Ventilating Engineers.

WEATHER RESISTANCE

Under all sorts of weather conditions, PC Glass Block construction has proved its durability. Tests of panels subjected to repeated cycles of heating, water spray and freezing show no sign of cracking or other structural deterioration, although temperatures well above and below those encountered in any exposure have been regularly used.

WATER-TIGHTNESS

Experience, both in the laboratory, where some 4,000 sq. ft. of panels 8'x10' in size have been tested, and also in the field where records of a number of jobs are available, conclusively indicates that properly constructed panels of PC Glass Blocks will be free from leakage. After long, driving rain storms, the most that has been observed is a slight darkening of the mortar joints.

ESTIMATING DATA

(For 100 sq. ft. of panel laid with ¼-in. visible mortar joints)

Size of Block	6"	8"	12"
Number of Blocks	400	225	100
Weight of Panel	2000 lbs.	1800 lbs.	1900 lbs.
Volume of Mortar	4.3 c.f.	3.2 c.f.	2.2 c.f.

(For 1 cu. ft. of mortar, based on 1-1-4 mix by volume)

Cement	¼ bag
Lime	¼ bag
Sand	1 cu. ft.
Waterproofing Compound, Pittsburgh NV-3389	½ pint

PC GLASS BLOCKS...

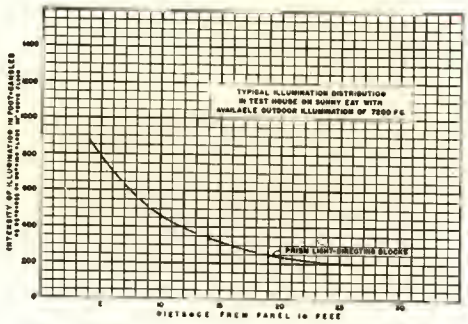
FACTS ABOUT THE PRISM LIGHT-DIRECTING GLASS BLOCKS

It is often desirable to provide a means of carrying daylight as far as possible into a room and thus provide daylighting for workers who are located far from outside walls.

The PC Prism Light-Directing Glass Block was designed for this purpose. This Block controls the direction of light transmitted by the block. Because the transmitted light is bent upward, a more uniform distribution of interior illumination is possible when used with a reflecting ceiling. Objectionable brightness and glare are reduced when viewed from the horizontal or below. The result is a more even distribution of daylight, with a reduction in the intensity of direct daylight falling on working areas near outside walls. This control of transmitted light is accomplished by means of horizontal prisms on the two inside faces. Incident daylight is so refracted that the greater part of the transmitted light is directed toward the ceiling, with a minimum directed downward. The prism construction is all on the inside, and thus the light-directing surfaces are protected from damage or dirt. Light-Directing Blocks should be laid only above eye level (5'-6" to 6' above the floor), so that the light will be directed away from the eyes of room occupants. Correct control of light is possible only when blocks are set in proper position. Blocks are marked to indicate correct setting.

Light Transmission and Distribution

The PC Prism Light-Directing unit has an unusually high light-transmission factor for this type of glass—about 80% that of the Argus and other standard patterns. The diagrams at the right illustrate the performance of the prisms, and show a typical illumination curve. Note the high foot-candle readings well back in the room, and the low ratio between the maximum and minimum—always a desirable feature in lighting.

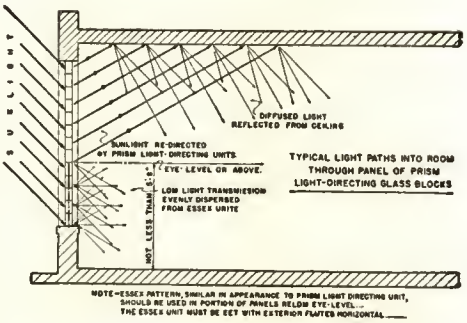


Solar Heat Transmission

Tests show that the total heat gain is approximately 85% that of the standard Argus Glass Block and about half that of single-glazed sash. The benefit to room occupants is even more pronounced, however, since they suffer no bodily discomfort as a result of the direct rays of the sun.

Use in Combination with the Essex Block

Where panels containing Prism Blocks would normally extend below eye-level, it is recommended that the complementary ESSEX Block be used in the lower portion of the panel. With this combination, advantage is taken of the most valuable qualities of each of these blocks to provide best lighting conditions. The Essex Block is similar in appearance to the Prism Unit. It must be installed with exterior flutes in a horizontal position.



FACTS ABOUT THE ESSEX GLASS BLOCK

The use of large glass areas for daylighting, while effective for cloudy days, frequently presents a problem of light distribution—especially in direct sunlight. Reduction of daylight intensity by the use of awnings or shades has frequently resulted in the impairment of the efficiency of the natural illumination. The diffusing qualities of standard glass block patterns have partially solved this problem, but their use in extensive areas presents the same problem as single glazing—though to a lesser degree.

The solution is the use of ESSEX pattern Glass Blocks. They transmit a relatively low amount of incident light, evenly dispersed, and provide best lighting conditions even when large glass areas are required for adequate illumination of large floor areas. Correct control of light is possible only when blocks are set with exterior flutes in a horizontal position.

Light Transmission and Distribution

Light transmission of the ESSEX Glass Block is of an evenly dispersed character and is approximately 60% of the Argus and other conventional patterns.

Solar Heat Transmission

Tests show that the total solar heat gain through glass block panels is made up of two factors—radiant heat directly transmitted into the room, and heat first absorbed by the panel itself and then partly re-radiated and partly conducted into the room. The interior vertical prisms and exterior spreading flutes of the ESSEX Block account for the very low figure for total heat gain—about 60% that of the Argus and some 35% that of single glazed sash. This reduction of solar heat will appreciably reduce cooling loads in air-conditioned rooms, but will not eliminate the need for adequate ventilation in non-air-conditioned rooms on sun exposures.

Where to Use Essex Glass Blocks

Generally—wherever it is desirable to take advantage of the insulation of light-transmitting areas through the use of glass blocks, and at the same time obtain a relatively low amount of incident light, evenly dispersed to provide for best lighting conditions. The following may serve as a guide to the use of these blocks:

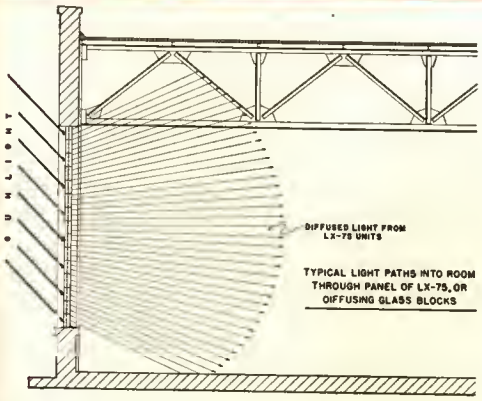
1. In large areas on unshaded East, South, and West exposures where low light transmission and reduced solar heat gain are desired, and conditions are not suitable for use of Prism Light-Directing Blocks.
2. Below eye-level, in combination with Prism Light-Directing Blocks on sun exposures.

PC LX-75 GLASS BLOCKS

(with a fibrous glass screen)

A SHEET OF FIBROUS GLASS is inserted and permanently sealed between the two halves of the block during its manufacture. This screen consists of a thin, pressed sheet, composed of glass fibers which effectively diffuse the light. It causes a reduction of brightness and solar heat transmission as compared with standard PC Glass Blocks or any other glazing.

SOFT, DIFFUSED DAYLIGHT in all parts of this mill enables workers to perform their tasks comfortably. Annoying brightness is eliminated and solar heat transmission is reduced.



THIS DIAGRAM SHOWS typical light paths from a panel of PC LX-75 Glass Blocks. The diffusion of emergent light provides a uniform and desirable interior illumination, also a reduction in brightness that is essential on many exposures.

. . . for better light diffusion
. . . less heat transmission

PC LX-75 Glass Blocks embody the well-known features of standard pattern PC Glass Blocks, plus important additional features

Each block contains a fibrous glass screen—inserted and permanently sealed between the two halves of the block—which breaks up and disperses too-bright daylight, resulting in a unit which transmits softly diffused daylight without uncomfortable brightness—even on the sunniest day. The screen also serves to divide the inside of the hollow block into two insulating dead air spaces, resulting in better thermal insulation value than in standard blocks. Solar heat gain, likewise, is reduced because of the screen.

Plenty of light . . . plus insulation

On eastern, southern and western exposures, the rays of the sun, striking large light openings, can generate sufficient interior heat to interfere with plant operation and workers' comfort. With ordinary glazing, the use of awnings or shades is resorted to, but is not satisfactory because too much light is usually cut off, and these devices require frequent and costly attention. Under these conditions, panels of PC LX-75 Glass Blocks transmit plenty of daylight and at the same time keep out more solar heat than ordinary glazing. The insulating properties of the glass block, plus the additional insulating value resulting from the use of the fibrous glass screen, effect an appreciable reduction in the transmission of both radiant and conducted solar heat, thereby making more comfortable conditions inside. This will reduce cooling loads in air-conditioned rooms, but will not eliminate the need for ventilation in non-air-conditioned rooms on sun exposures.

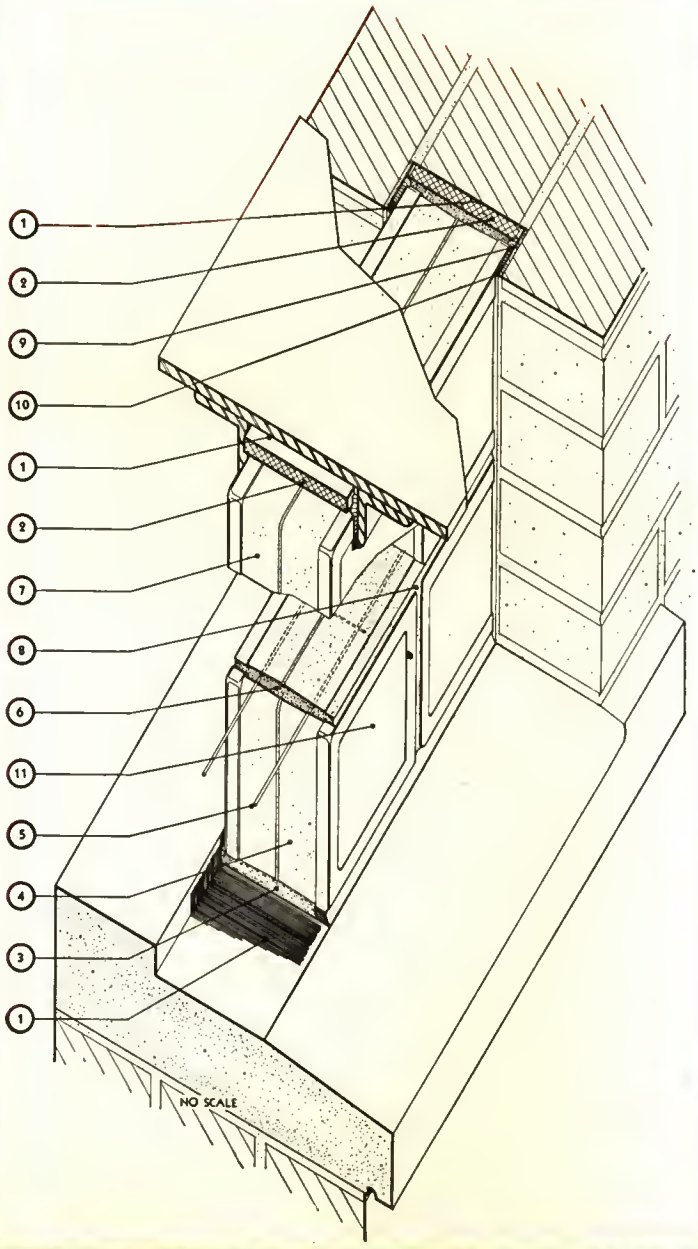
Pleasing in appearance . . . practical too

PC LX-75 Glass Blocks add a distinctive note to the exterior aspect of any building. Inside, too, the panels have a definite decorative effect. The light they provide, soft and easy on the eyes, makes offices and shops where they are used pleasant places to turn out good work.

Better lighting means less money spent for artificial lighting. Less heat transmission means less load on air-conditioning equipment in summer, lower heating costs in winter. Quickly and easily cleaned, rarely needing repairs or replacements, PC LX-75 Glass Blocks improve operating conditions and reduce operating costs.

HOW TO INSTALL PC GLASS BLOCKS

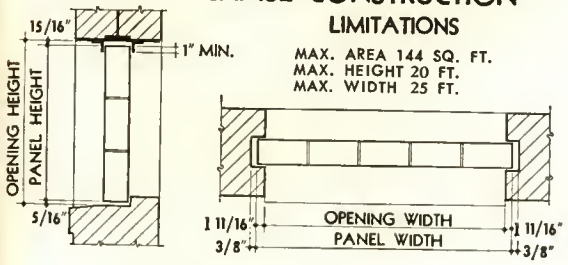
1. Mop entire perimeter of opening with heavy coat of asphalt emulsion.
2. Adhere PC Expansion Strip to jambs and head. Make certain expansion strip extends to sill.
3. Place full mortar bed at sill—do not furrow.
4. Set lower course of block. All vertical and horizontal mortar joints must be full and not furrowed. Steel tools must not be used to tap blocks into final position.
5. Install PC Wall Ties in horizontal joints where required as follows:
   (a) Place lower half of mortar bed. Do not furrow.
   (b) Place wall tie centered in joint.
   (c) Cover wall tie with upper half of mortar bed and trowel smooth. Do not furrow.
   (d) Wall ties must run from end to end of panels and where used continuously must lap 6 in. Wall ties must not bridge expansion joints.
6. Place full mortar bed for joints not requiring wall ties—do not furrow.
7. Follow instructions 3, 4 and 6 for setting succeeding courses of blocks.
8. Strike joints smoothly while mortar is still plastic and before final set. At this time rake out all joints requiring calking to a depth equal to the thickness of joint. Remove surplus mortar from faces of glass blocks and wipe dry.
9. After final mortar set, pack oakum (as specified) tightly into jamb and head construction.
10. Calk interior and exterior perimeter of panel with calking compound as specified.
11. Final cleaning of glass block faces shall not be done until after final mortar set.



LAYOUT TABLES FOR PC GLASS BLOCK PANELS BASED ON MODULAR COORDINATION

(Using 3/8 In. Mortar Joints in Face Brick)

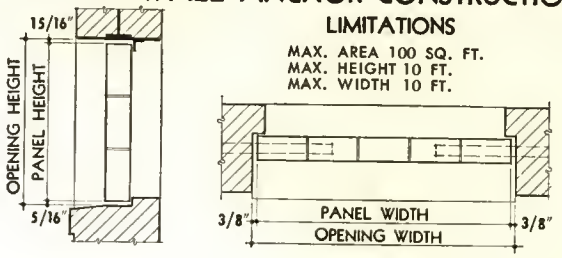
TYPE "A"—CHASE CONSTRUCTION



LIMITATIONS

MAX. AREA 144 SQ. FT.
MAX. HEIGHT 20 FT.
MAX. WIDTH 25 FT.

TYPE "B"—WALL ANCHOR CONSTRUCTION



LIMITATIONS

MAX. AREA 100 SQ. FT.
MAX. HEIGHT 10 FT.
MAX. WIDTH 10 FT.

5¾" SQUARE BLOCKS ¼" MORTAR JOINTS

NO. OF UNITS	PANEL WIOTH OR HEIGHT	TYPE "A" MASONRY OPENING WIDTH	TYPE "A" MASONRY OPENING HEIGHT	TYPE "B" MASONRY OPENING WIOTH	TYPE "B" MASONRY OPENING HEIGNT
1	5¾"	2⅜"	7"	6½"	7"
2	11¾"	8⅜"	1'-1"	1'-0½"	1'-1"
3	1'-5¾"	1'-2⅜"	1'-7"	1'-6½"	1'-7"
4	1'-11¾"	1'-8⅜"	2'-1"	2'-0½"	2'-1"
5	2'-5¾"	2'-2⅜"	2'-7"	2'-6½"	2'-7"
6	2'-11¾"	2'-8⅜"	3'-1"	3'-0½"	3'-1"
7	3'-5¾"	3'-2⅜"	3'-7"	3'-6½"	3'-7"
8	3'-11¾"	3'-8⅜"	4'-1"	4'-0½"	4'-1"
9	4'-5¾"	4'-2⅜"	4'-7"	4'-6½"	4'-7"
10	4'-11¾"	4'-8⅜"	5'-1"	5'-0½"	5'-1"
11	5'-5¾"	5'-2⅜"	5'-7"	5'-6½"	5'-7"
12	5'-11¾"	5'-8⅜"	6'-1"	6'-0½"	6'-1"
13	6'-5¾"	6'-2⅜"	6'-7"	6'-6½"	6'-7"
14	6'-11¾"	6'-8⅜"	7'-1"	7'-0½"	7'-1"
15	7'-5¾"	7'-2⅜"	7'-7"	7'-6½"	7'-7"
16	7'-11¾"	7'-8⅜"	8'-1"	8'-0½"	8'-1"
17	8'-5¾"	8'-2⅜"	8'-7"	8'-6½"	8'-7"
18	8'-11¾"	8'-8⅜"	9'-1"	9'-0½"	9'-1"
19	9'-5¾"	9'-2⅜"	9'-7"	9'-6½"	9'-7"
20	9'-11¾"	9'-8⅜"	10'-1"	10'-0½"	10'-1"
21	10'-5¾"	10'-2⅜"	10'-7"		
22	10'-11¾"	10'-8⅜"	11'-1"		
23	11'-5¾"	11'-2⅜"	11'-7"		
24	11'-11¾"	11'-8⅜"	12'-1"		
25	12'-5¾"	12'-2⅜"	12'-7"		
26	12'-11¾"	12'-8⅜"	13'-1"		
27	13'-5¾"	13'-2⅜"	13'-7"		
28	13'-11¾"	13'-8⅜"	14'-1"		
29	14'-5¾"	14'-2⅜"	14'-7"		
30	14'-11¾"	14'-8⅜"	15'-1"		
31	15'-5¾"	15'-2⅜"	15'-7"		
32	15'-11¾"	15'-8⅜"	16'-1"		
33	16'-5¾"	16'-2⅜"	16'-7"		
34	16'-11¾"	16'-8⅜"	17'-1"		
35	17'-5¾"	17'-2⅜"	17'-7"		
36	17'-11¾"	17'-8⅜"	18'-1"		
37	18'-5¾"	18'-2⅜"	18'-7"		
38	18'-11¾"	18'-8⅜"	19'-1"		
39	19'-5¾"	19'-2⅜"	19'-7"		
40	19'-11¾"	19'-8⅜"	20'-1"		
41	20'-5¾"	20'-2⅜"			
42	20'-11¾"	20'-8⅜"			
43	21'-5¾"	21'-2⅜"			
44	21'-11¾"	21'-8⅜"			
45	22'-5¾"	22'-2⅜"			
46	22'-11¾"	22'-8⅜"			
47	23'-5¾"	23'-2⅜"			
48	23'-11¾"	23'-8⅜"			
49	24'-5¾"	24'-2⅜"			
50	24'-11¾"	24'-8⅜"			

7¾" SQUARE BLOCKS ¼" MORTAR JOINTS

NO. OF UNITS	PANEL WIDTH OR HEIGHT	TYPE "A" MASONRY OPENING WIOTH	TYPE "A" MASONRY OPENING HEIGNT	TYPE "B" MASONRY OPENING WIDTN	TYPE "B" MASONRY OPENING HEIGHT
1	7¾"	4⅜"	9"	8½"	9"
2	1'-3¾"	1'-0⅜"	1'-5"	1'-4½"	1'-5"
3	1'-11¾"	1'-8⅜"	2'-1"	2'-0½"	2'-1"
4	2'-7¾"	2'-4⅜"	2'-9"	2'-8½"	2'-9"
5	3'-3¾"	3'-0⅜"	3'-5"	3'-4½"	3'-5"
6	3'-11¾"	3'-8⅜"	4'-1"	4'-0½"	4'-1"
7	4'-7¾"	4'-4⅜"	4'-9"	4'-8½"	4'-9"
8	5'-3¾"	5'-0⅜"	5'-5"	5'-4½"	5'-5"
9	5'-11¾"	5'-8⅜"	6'-1"	6'-0½"	6'-1"
10	6'-7¾"	6'-4⅜"	6'-9"	6'-8½"	6'-9"
11	7'-3¾"	7'-0⅜"	7'-5"	7'-4½"	7'-5"
12	7'-11¾"	7'-8⅜"	8'-1"	8'-0½"	8'-1"
13	8'-7¾"	8'-4⅜"	8'-9"	8'-8½"	8'-9"
14	9'-3¾"	9'-0⅜"	9'-5"	9'-4½"	9'-5"
15	9'-11¾"	9'-8⅜"	10'-1"	10'-0½"	10'-1"
16	10'-7¾"	10'-4⅜"	10'-9"		
17	11'-3¾"	11'-0⅜"	11'-5"		
18	11'-11¾"	11'-8⅜"	12'-1"		
19	12'-7¾"	12'-4⅜"	12'-9"		
20	13'-3¾"	13'-0⅜"	13'-5"		
21	13'-11¾"	13'-8⅜"	14'-1"		
22	14'-7¾"	14'-4⅜"	14'-9"		
23	15'-3¾"	15'-0⅜"	15'-5"		
24	15'-11¾"	15'-8⅜"	16'-1"		
25	16'-7¾"	16'-4⅜"	16'-9"		
26	17'-3¾"	17'-0⅜"	17'-5"		
27	17'-11¾"	17'-8⅜"	18'-1"		
28	18'-7¾"	18'-4⅜"	18'-9"		
29	19'-3¾"	19'-0⅜"	19'-5"		
30	19'-11¾"	19'-8⅜"	20'-1"		
31	20'-7¾"	20'-4⅜"			
32	21'-3¾"	21'-0⅜"			
33	21'-11¾"	21'-8⅜"			
34	22'-7¾"	22'-4⅜"			
35	23'-3¾"	23'-0⅜"			
36	23'-11¾"	23'-8⅜"			
37	24'-7¾"	24'-4⅜"			
38	25'-3¾"	25'-0⅜"			

11¾" SQUARE BLOCKS ¼" MORTAR JOINTS

NO. OF UNITS	PANEL WIOTH OR HEIGHT	TYPE "A" MASONRY OPENING WIOTH	TYPE "A" MASONRY OPENING HEIGNT	TYPE "B" MASONRY OPENING WIOTH	TYPE "B" MASONRY OPENING HEIGNT
1	11¾"	8⅜"	1'-1"	1'-0½"	1'-1"
2	1'-11¾"	1'-8⅜"	2'-1"	2'-0½"	2'-1"
3	2'-11¾"	2'-8⅜"	3'-1"	3'-0½"	3'-1"
4	3'-11¾"	3'-8⅜"	4'-1"	4'-0½"	4'-1"
5	4'-11¾"	4'-8⅜"	5'-1"	5'-0½"	5'-1"
6	5'-11¾"	5'-8⅜"	6'-1"	6'-0½"	6'-1"
7	6'-11¾"	6'-8⅜"	7'-1"	7'-0½"	7'-1"
8	7'-11¾"	7'-8⅜"	8'-1"	8'-0½"	8'-1"
9	8'-11¾"	8'-8⅜"	9'-1"	9'-0½"	9'-1"
10	9'-11¾"	9'-8⅜"	10'-1"	10'-0½"	10'-1"
11	10'-11¾"	10'-8⅜"	11'-1"		
12	11'-11¾"	11'-8⅜"	12'-1"		
13	12'-11¾"	12'-8⅜"	13'-1"		
14	13'-11¾"	13'-8⅜"	14'-1"		
15	14'-11¾"	14'-8⅜"	15'-1"		
16	15'-11¾"	15'-8⅜"	16'-1"		
17	16'-11¾"	16'-8⅜"	17'-1"		
18	17'-11¾"	17'-8⅜"	18'-1"		
19	18'-11¾"	18'-8⅜"	19'-1"		
20	19'-11¾"	19'-8⅜"	20'-1"		
21	20'-11¾"	20'-8⅜"			
22	21'-11¾"	21'-8⅜"			
23	22'-11¾"	22'-8⅜"			
24	23'-11¾"	23'-8⅜"			
25	24'-11¾"	24'-8⅜"			

MODULAR COORDINATION

The American Standard Basis for the Coordination of Dimensions of Building Materials and Equipment A62.1-1945 established a standard grid based on a Module of 4". Most producers of masonry products, glass blocks, windows and other building materials have adopted Modular Coordinated Sizes. Modular Installation Details on the following pages show combinations of these materials incorporating basic principles for installing glass blocks. For additional details refer to the "A62 Guide for Modular Coordination" published by Modular Service Association, 110 Arlington Street, Boston 16, Massachusetts.

PC GLASS

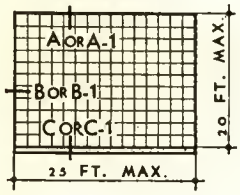
Exterior Panel Size Limitations with minimum expansion and anchorage requirements

GENERAL: Construction supporting panels over 144 square feet in area must be of a type which will provide for a minimum of movement and settlement.

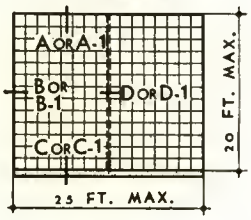
Structural members shown are to indicate principles of construction. Sizes must be calculated for loads applied. Information shown on these sheets is not intended to conflict with any local building code requirements.

LARGE SIMPLE PANELS

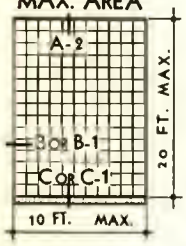
144 SQ. FT. MAX. AREA



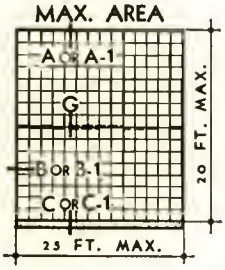
250 SQ. FT. MAX. AREA



144 SQ. FT. MAX. AREA

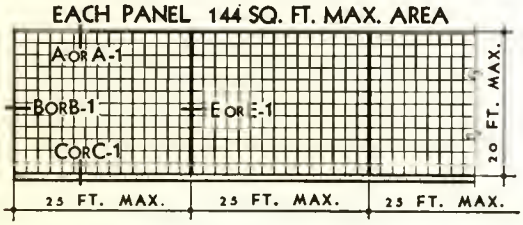


250 SQ. FT. MAX. AREA

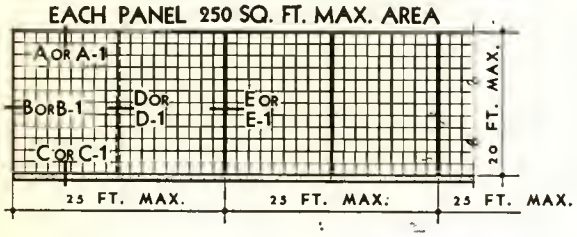


LARGE CONTINUOUS PANELS

EACH PANEL 144 SQ. FT. MAX. AREA

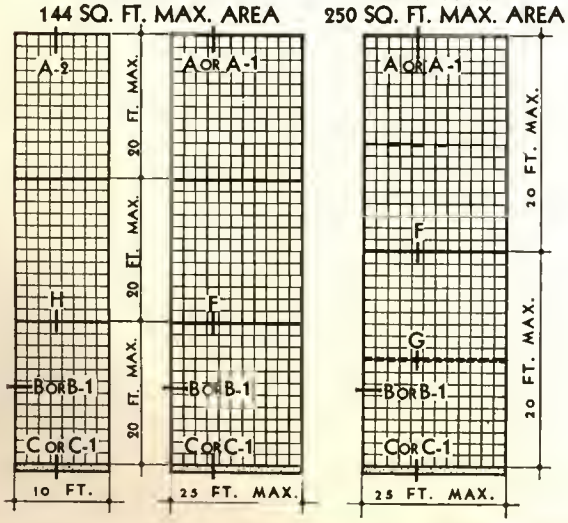


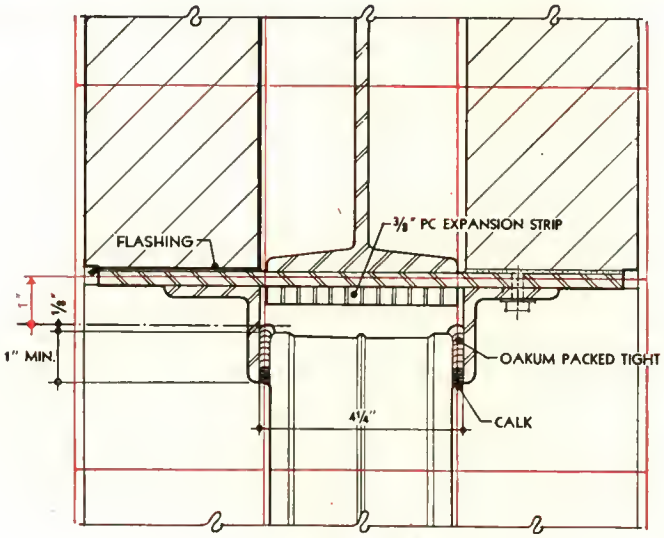
EACH PANEL 250 SQ. FT. MAX. AREA



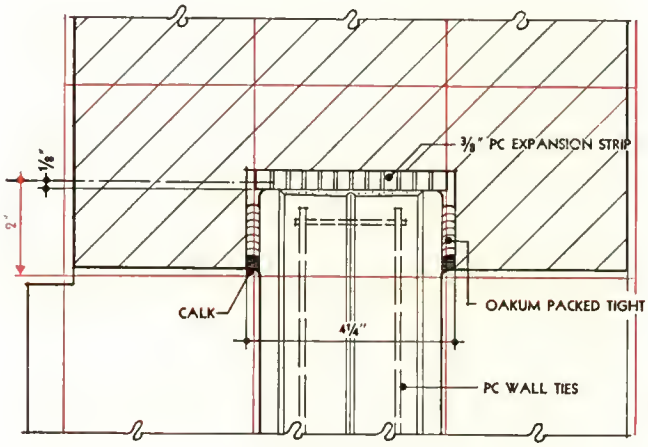
EACH PANEL 144 SQ. FT. MAX. AREA

EACH PANEL 250 SQ. FT. MAX. AREA

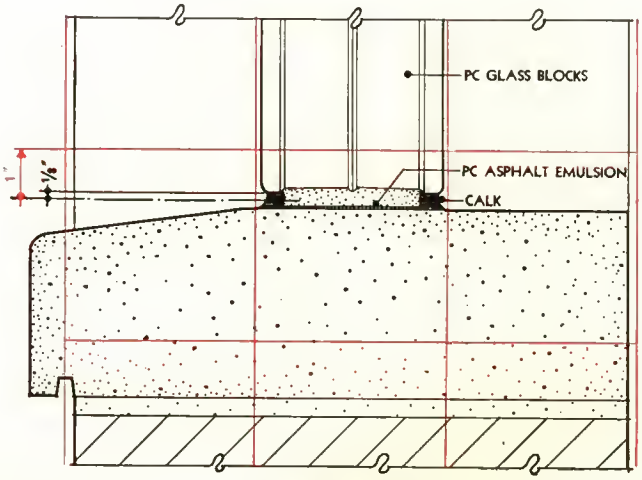




SECTION "A"

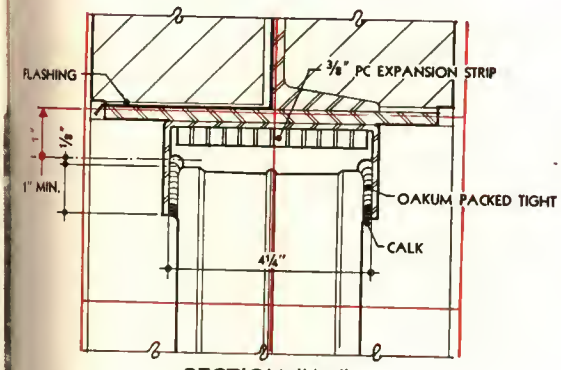


SECTION "B"

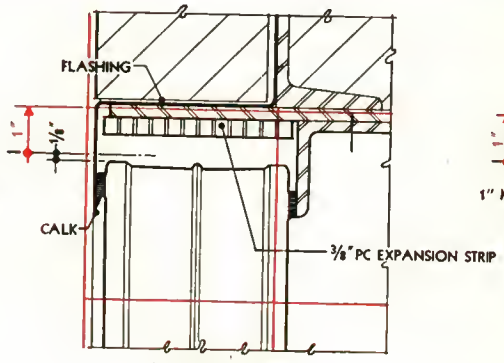


SECTION "C"

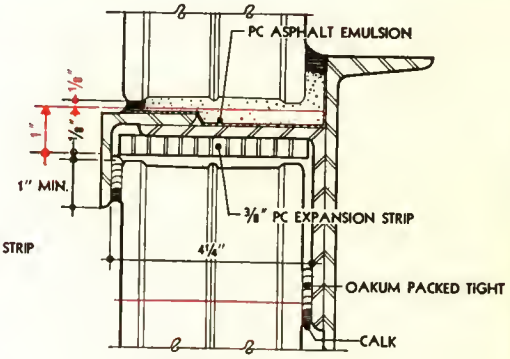
BLOCKS—MODULAR INSTALLATION DETAILS



SECTION "A-1"



SECTION "A-2"



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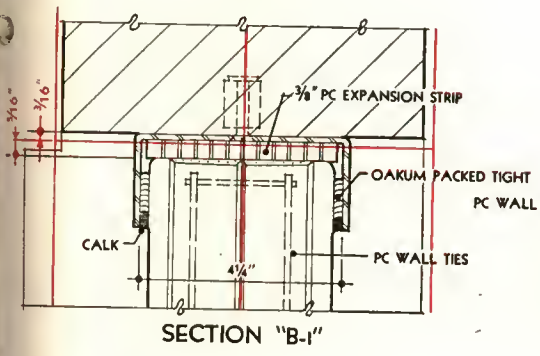
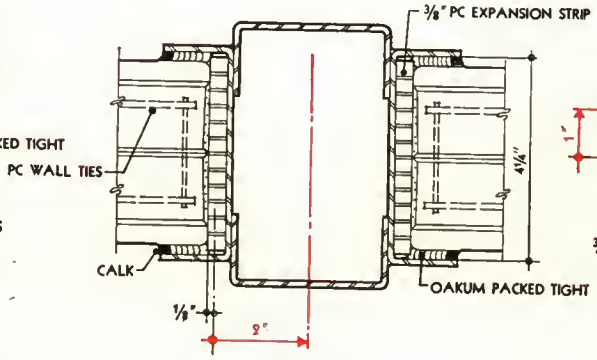
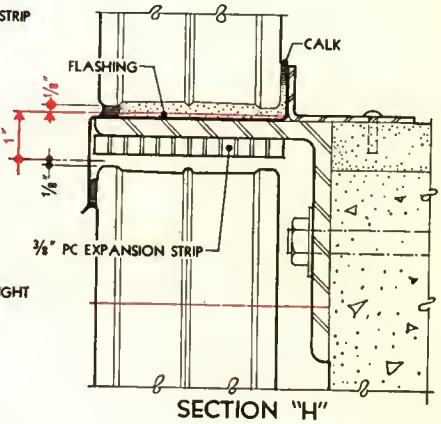


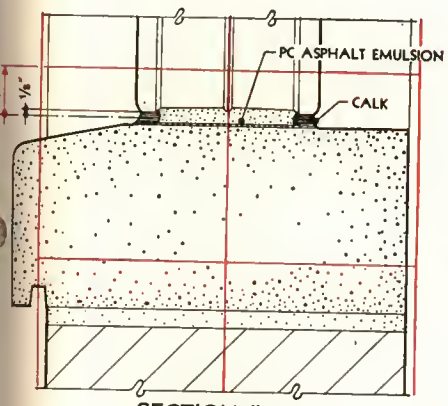
SECTION "B-1"



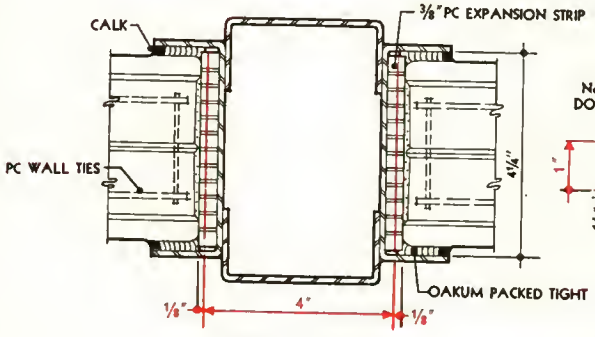
SECTION "E"



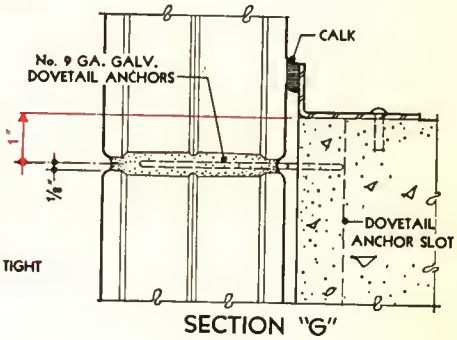
SECTION "H"



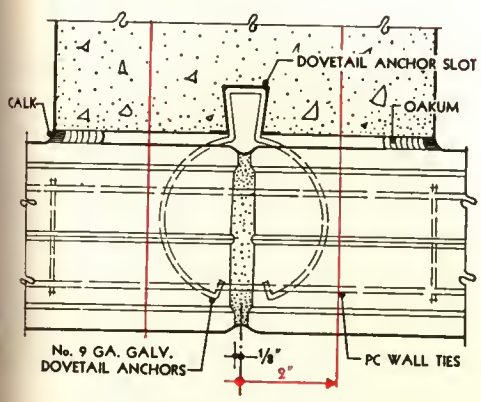
SECTION "C-1"



SECTION "E-1"



SECTION "G"



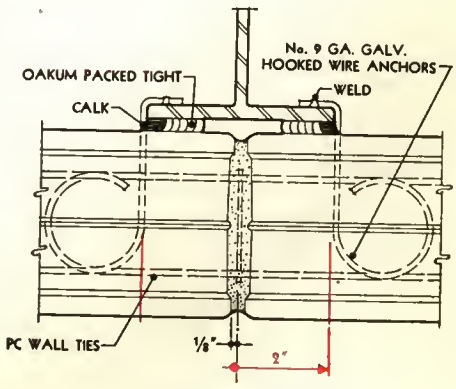
SECTION "D"

GENERAL NOTES

All red lines shown are Grid Lines.

When Section "B-1" is used, vertical mortar joints of panel must be compressed slightly to obtain sufficient space at jambs for expansion strips.

GRID POSITION: Installation details for glass block panels establish the grid position of individual units vertically and horizontally. The vertical joints may be either on grid lines or centered between grid lines, depending upon the details used at the panel jambs. The centerlines of horizontal joints may either be on grid lines or some small dimension, normally 1", below or above grid lines. Glass block panels are normally positioned with the nominal faces on grid lines, so as to fit with chases or recesses in masonry openings. Other grid positions for the exposed faces may be used where required, examples of which are shown. Those details which do not indicate panel position with reference to grid lines, can be used for several conditions.



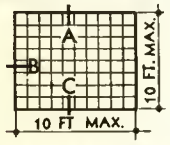
SECTION "D-1"

Wall anchors providing lateral support for glass block panels are restricted only by building code requirements and the discretion of the architect. Where wall anchors are forbidden, chase construction shall be used.

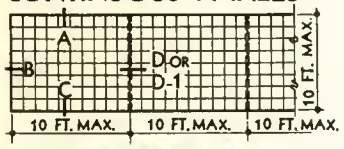
MODULAR INSTALLATION DETAILS—
FOR SMALL EXTERIOR PANELS

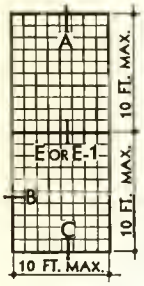
SMALL EXTERIOR PANELS
100 SQ. FT. MAX. AREA

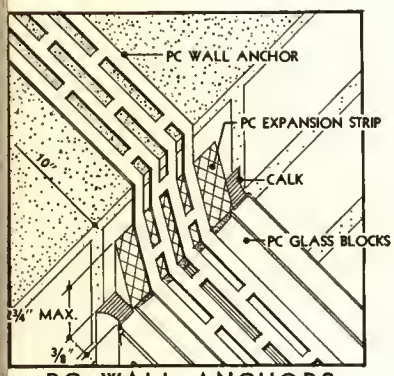
SIMPLE PANELS



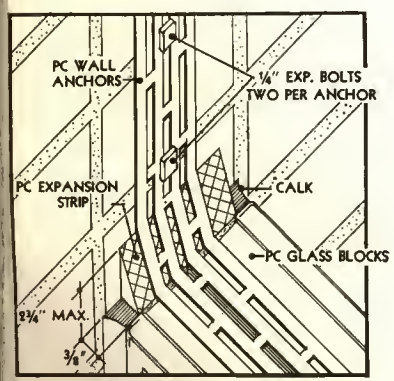
CONTINUOUS PANELS



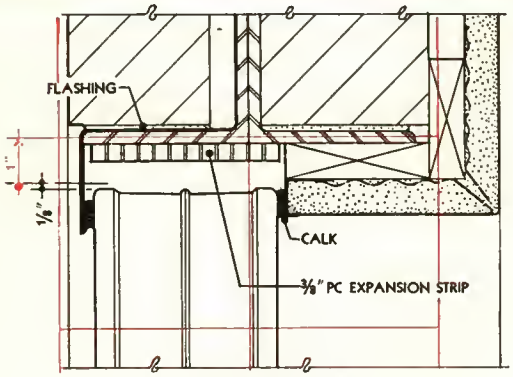




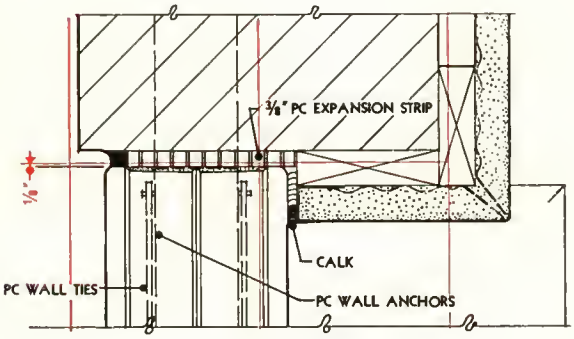
PC WALL ANCHORS
IN NEW CONSTRUCTION



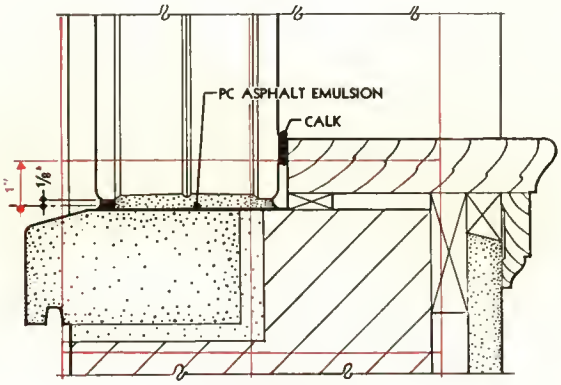
PC WALL ANCHORS IN
EXISTING CONSTRUCTION



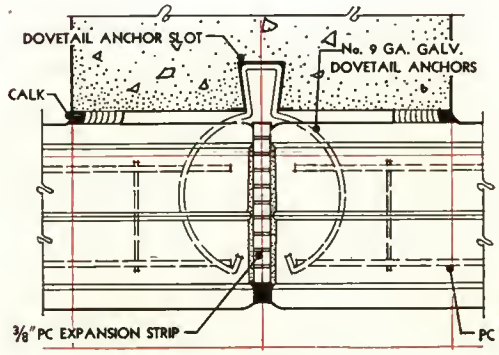
SECTION "A"



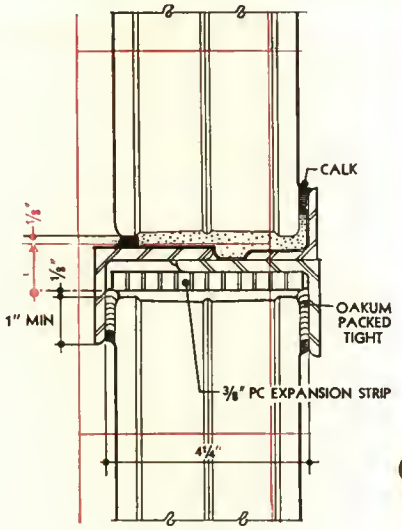
SECTION "B"



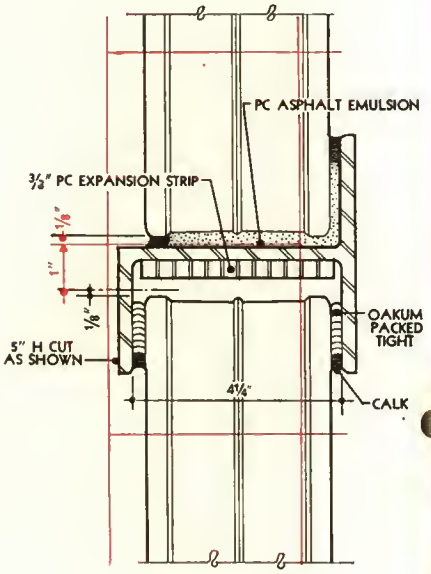
SECTION "C"



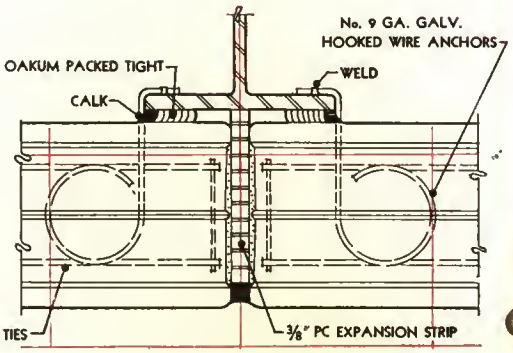
SECTION "D"



SECTION "E"



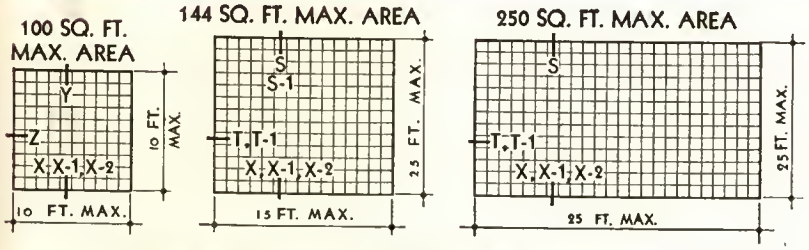
SECTION "E-1"



SECTION "D-1"

Where Sections "D" and "D-1" are used, vertical mortar joints of panels must be compressed slightly to obtain space for expansion strips.

MODULAR INSTALLATION DETAILS—
FOR INTERIOR PANELS

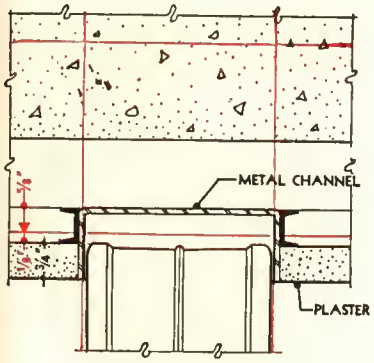


INTERIOR PANEL SIZE LIMITATIONS WITH MINIMUM EXPANSION & ANCHORAGE REQUIREMENTS

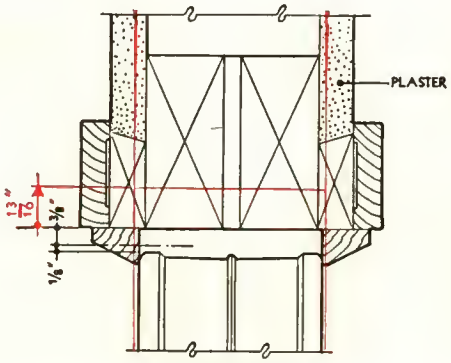
Construction supporting panels over 144 square feet in area must be of a type which will provide for a minimum of movement and settlement.

Information shown on this sheet is not intended to conflict with any local building code requirements.

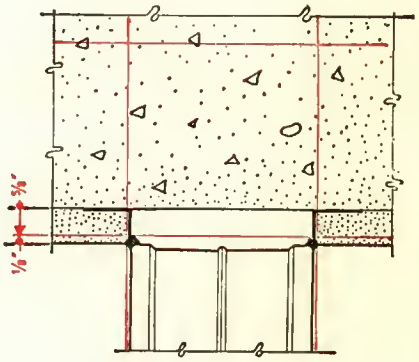
Before glass blocks are installed in wood partitions, all wood adjacent to mortar shall be properly primed.



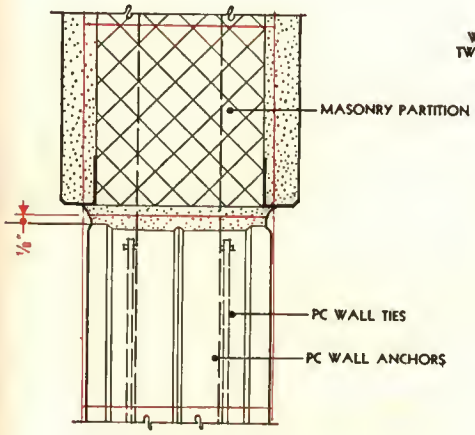
SECTION "S"



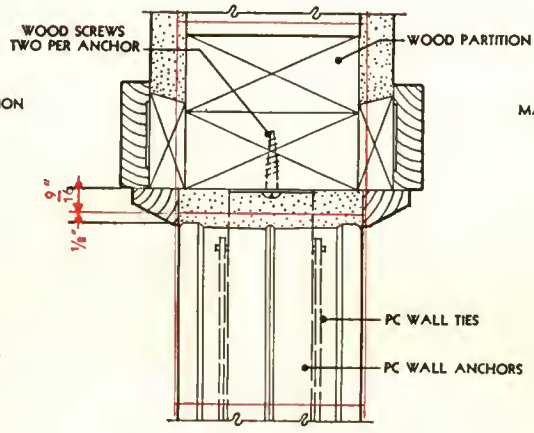
SECTION "S-1"



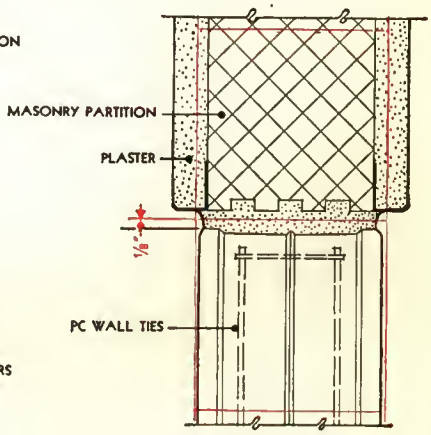
SECTION "Y"



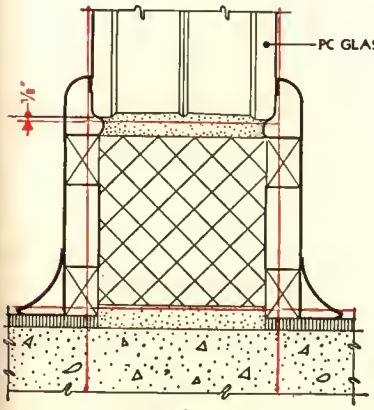
SECTION "T"



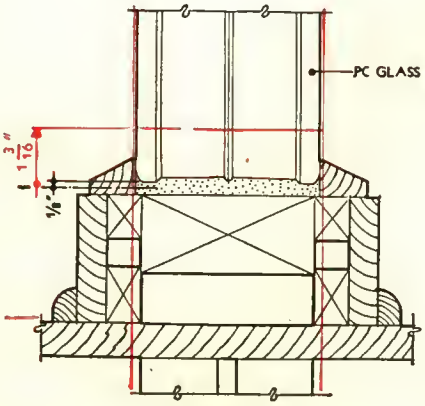
SECTION "T-1"



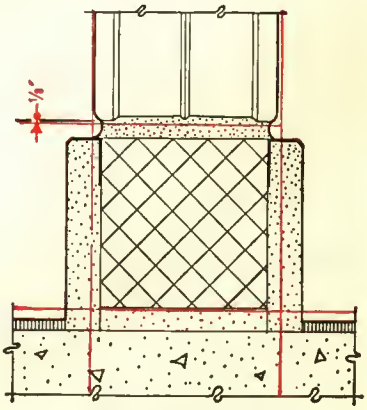
SECTION "Z"



SECTION "X"



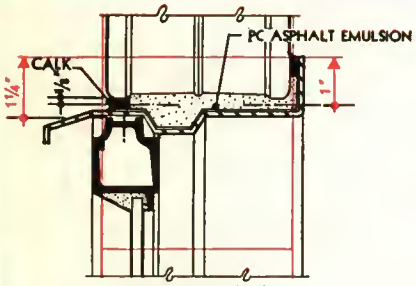
SECTION "X-1"



SECTION "X-2"

MODULAR INSTALLATION DETAILS—
FOR SASH AND GLASS BLOCK COMBINATIONS

Many metal sash manufacturers offer Modular standard sash and frames for combining with Glass Block.



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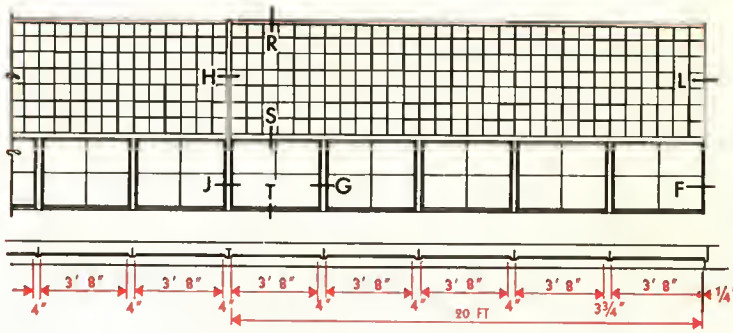
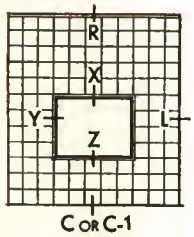
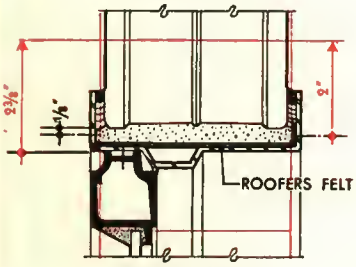
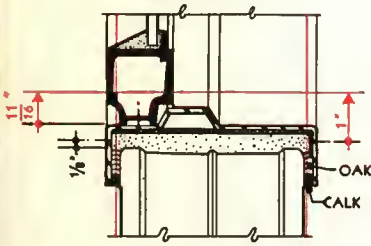






SECTION "Y"



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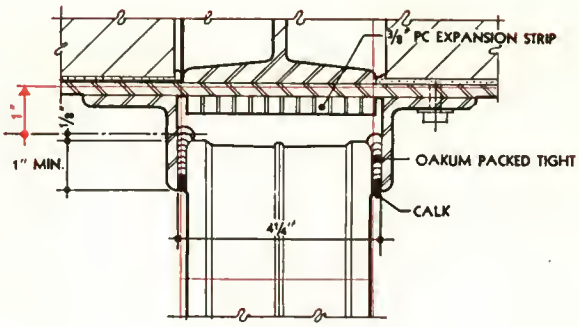
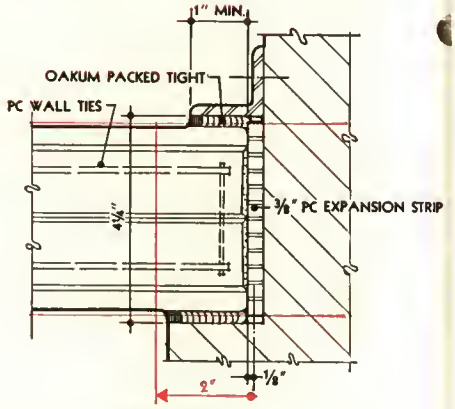
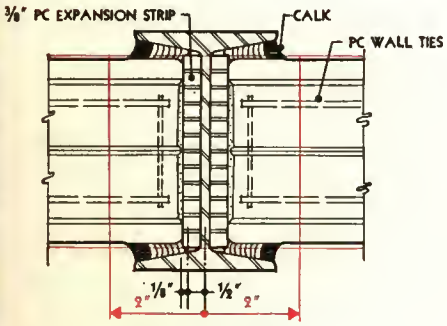


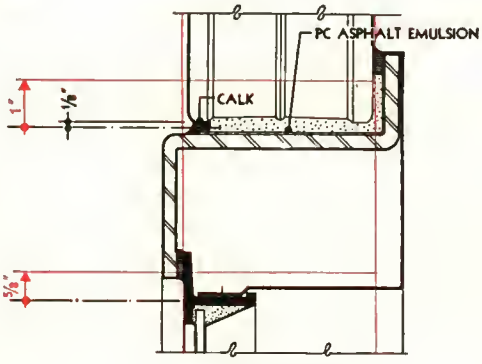
SECTION "R"



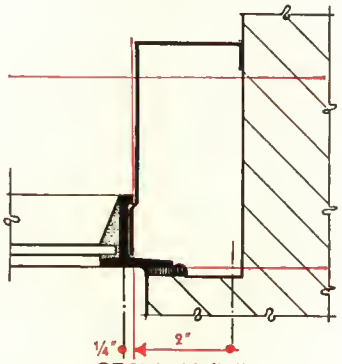
SECTION "L"



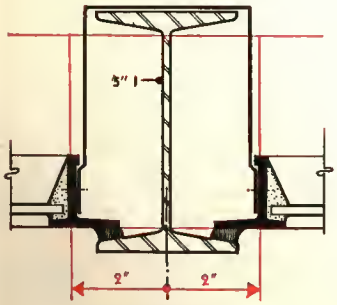
SECTION "H"



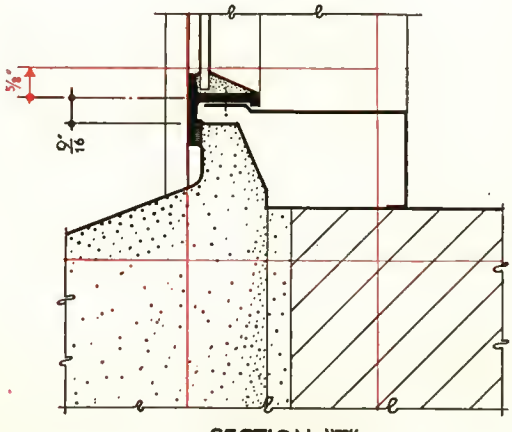
SECTION "S"



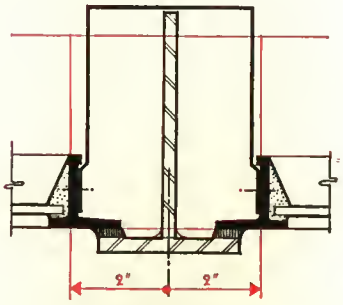
SECTION "F"



SECTION "J"

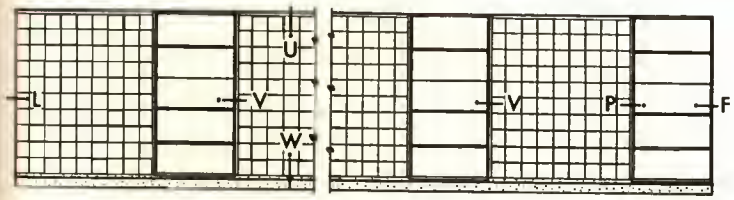


SECTION "T"

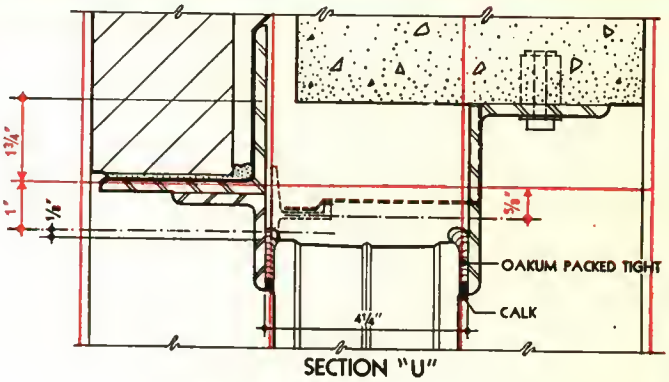


SECTION "G"

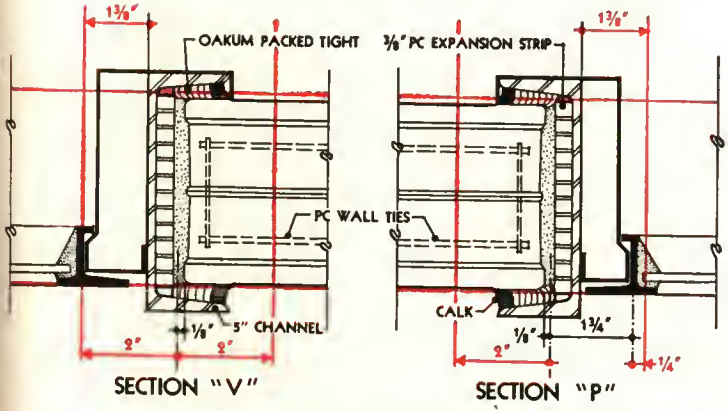
MODULAR INSTALLATION DETAILS—
FOR SASH AND GLASS BLOCK COMBINATIONS



NOTE: FOR SECTIONS "L" AND "F" SEE PAGE 24

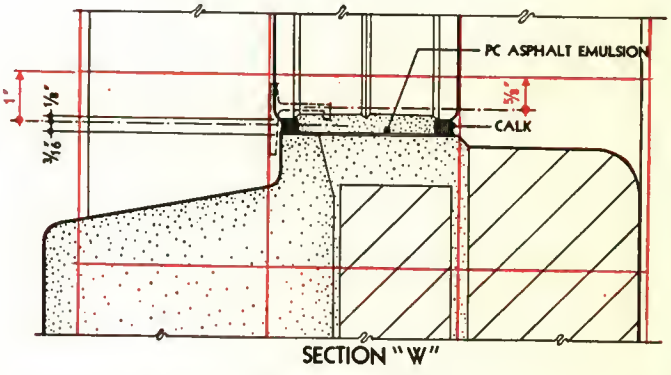


SECTION "U"



SECTION "V"

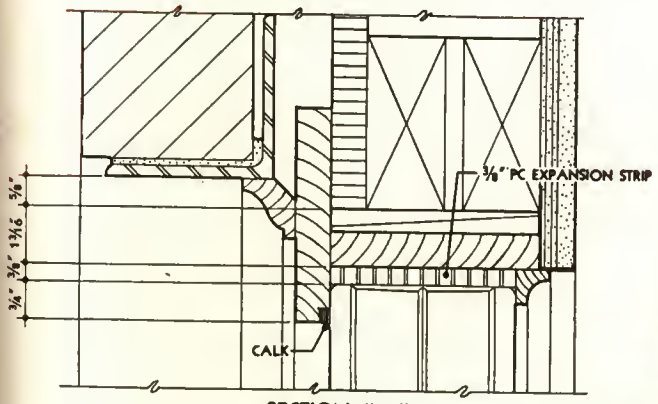
SECTION "P"



SECTION "W"

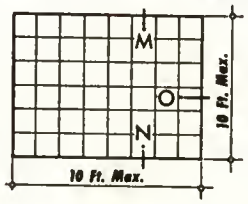
INSTALLATION DETAILS FOR RESIDENTIAL PANELS

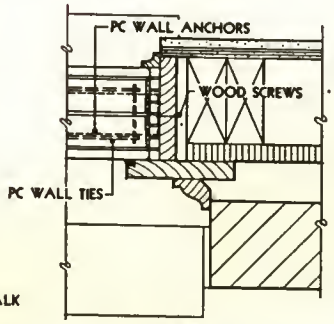
MASONRY VENEER WALLS



SECTION "M"

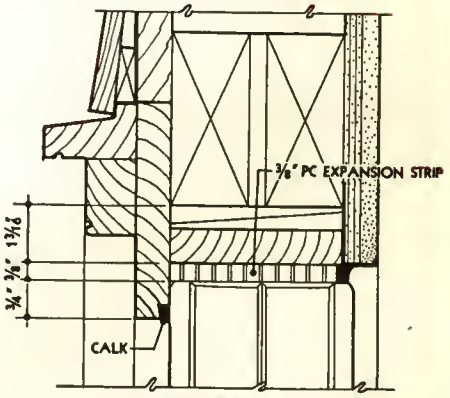
100 SQ. FT. MAX. AREA





SECTION "O"

WOOD FRAME WALLS



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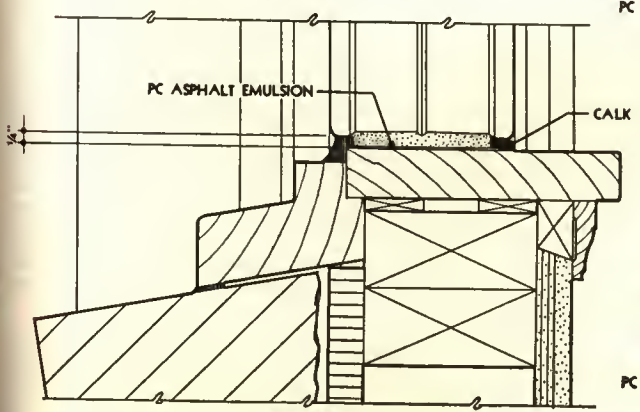
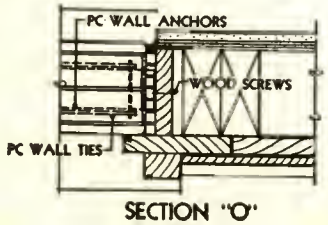


SECTION "N"



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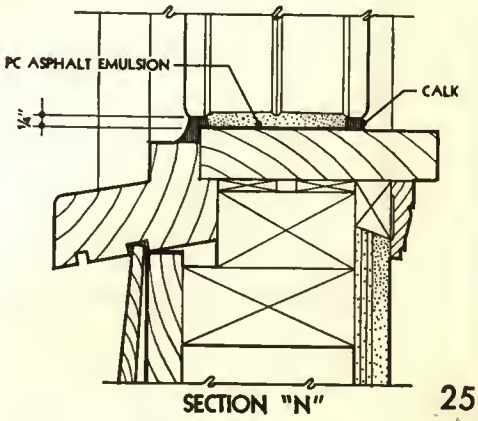
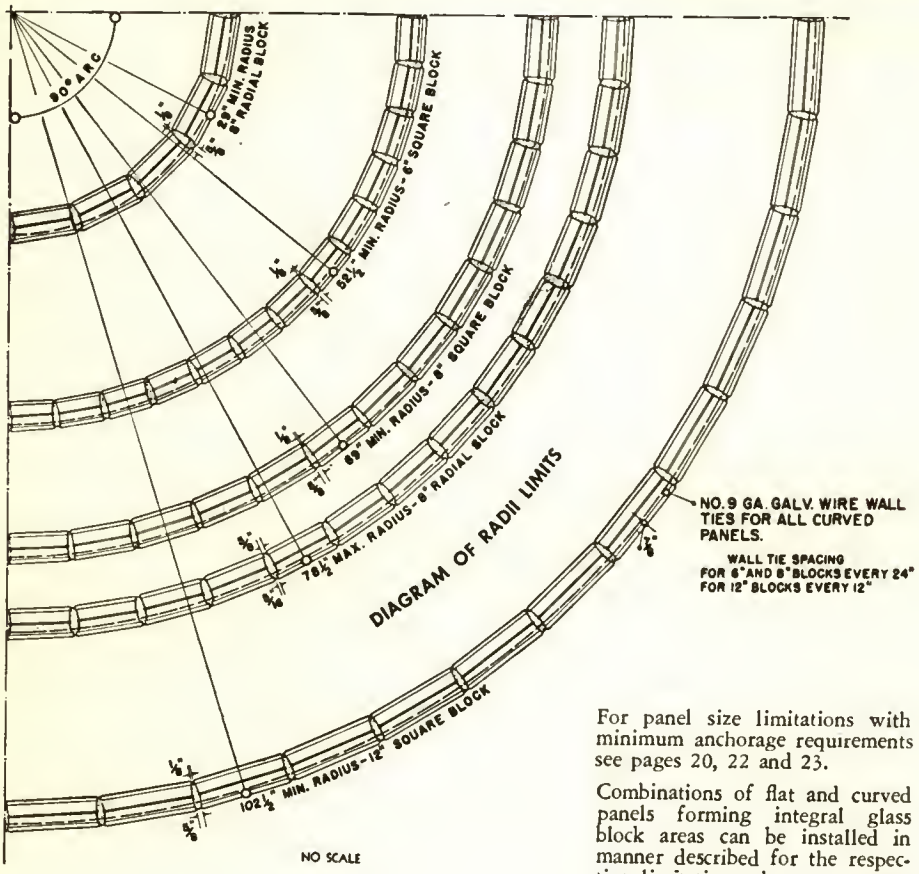
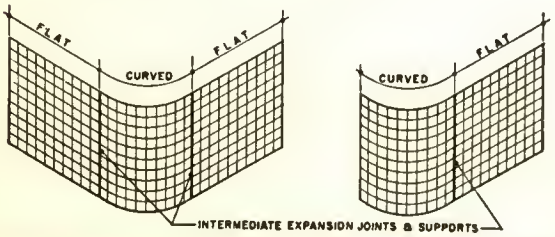


SECTION "N"

CURVED PANEL INSTALLATION REQUIREMENTS WITH TABLE OF RADII LIMITS





For panel size limitations with minimum anchorage requirements see pages 20, 22 and 23.

Combinations of flat and curved panels forming integral glass block areas can be installed in manner described for the respective limitations shown on pages noted above. However, it is suggested that the curved areas be separated from the flat areas by means of intermediate expansion joints and supports as indicated on the small diagrams at the left.

For intermediate expansion joints and supports, see Details.

TABLE OF RADII LIMITS FOR CURVED PANELS

Outside Radius Inches	Number of Block in 90° Circular Arc	Joint Thickness in inches		Remarks
		Inside	Outside	
6" SQUARE BLOCK				
52-1/2	13	1/8	5/8	Minimum
56-1/4	14	1/8	9/16	
56-3/4	14	3/16	5/8	
60	15	1/8	9/16	
61	15	3/16	5/8	
63-3/4	16	1/8	1/2	
65	16	1/4	5/8	
67-1/2	17	1/8	1/2	
69	17	1/4	5/8	
71-1/4	18	1/8	7/16	
73	18	5/16	5/8	
No Maximum Limitations.				
8" SQUARE BLOCK				
69	13	1/8	5/8	Minimum
74	14	1/8	9/16	
74-3/4	14	3/16	5/8	
79	15	1/8	1/2	
80	15	1/4	5/8	
84	16	1/8	1/2	
85-1/4	16	1/4	5/8	
No Maximum Limitotions.				
8" RADIAL BLOCK				
29	5	1/8	5/8	Minimum
34	6	1/8	3/8	
34-3/4	6	3/8	5/8	
39	7	1/8	1/4	
40-3/4	7	1/2	5/8	
44	8	1/8	1/8	
46-1/2	8	5/8	5/8	
49-1/2	9	3/16	1/8	
51-3/4	9	5/8	9/16	
55	10	1/4	1/8	
57-1/4	10	5/8	1/2	
60-1/2	11	5/16	1/8	
62-1/2	11	5/8	7/16	
66	12	3/8	1/8	
67-3/4	12	5/8	3/8	
71-1/2	13	3/8	1/8	
73-1/4	13	5/8	5/16	
76-3/4	14	7/16	1/8	Use Square
78-1/2	14	5/8	5/16	Block for larger radii
12" SQUARE BLOCK				
102-1/2	13	1/8	5/8	Minimum
No Maximum Limitotions.				

NOTE: Radii given to closest quarter inch; joint thicknesses to closest sixteenth inch.

Guide No. 40 UM2.6.5. December 11, 1945 File R2556.

Pittsburgh Corning Corp., Mfr.,
632 Duquesne Way, Pittsburgh 22, Pa.

Glass Blocks.

For window openings not exceeding 120 sq ft in area, nor 12 ft in width or height, subject to light fire exposure (Class F openings).

Argus, Argus Parallel, Bristol, Druid, Decora, Essex, and Saxon PC hollow glass blocks, nominally 7-¾ by 7-¾ by 3-⅞ in., and Argus, Argus Parallel, Decora, and Saxon 5-¾ by 5-¾-in. face dimensions, 3-⅞ in. thick; laid with ¼-in. horizontal and vertical mortar joints; mortar consisting of one part portland cement, one part hydrated lime, and four parts No. 1 screened torpedo sand by volume; each horizontal joint except between the two top rows reinforced for full length with No. 9 and 14 Bwg galvanized wire mesh; the glass block panels extending 1-¼ in. into grooves 2-¼ in. deep in jambs and lintel of the masonry openings, with glass or mineral wool in the remaining spaces in the grooves, to provide for expansion of the glass panels; exterior jamb and lintel edges caulked with waterproofing mastic.

Marking: Letters "PC", pattern designation, size and manufacturer's name on container.

Listed—Reexamination Service.

See description of Reexamination Service on guide card.

Authorities having jurisdiction should be consulted before installation.

This card replaces R2556 dated Jan. 2, 1941.

PRINTED IN U.S.A. This card is issued by Underwriters' Laboratories, Inc.

PC GLASS BLOCKS Listed by Underwriters' Laboratories, Inc.

NOTE: *For information regarding details of chase construction required, consult the Pittsburgh Corning Corporation, 632 Duquesne Way, Pittsburgh, Pa., or your nearest branch of the Pittsburgh Plate Glass Company.*

PC GLASS BLOCKS APPROVED BY BUILDING CODE AUTHORITIES

Building Code Authorities throughout the country have accepted and approved the use of PC Glass Blocks as a building material of adequate strength for non-load-bearing construction when installed according to the manufacturer's directions.

Note: Since publication of the above card, the 7¾ by 7¾ by 3⅞ in. Prism Light-Directing, Reeded-Decora, Vue, Bristol LX-75 and Druid LX-75 glass blocks, and the 5¾ by 5¾ by 3⅞ in. Reeded-Decora glass block have also been listed by Underwriters' Laboratories, Inc.

PC Glass Blocks

CLOSED SPECIFICATIONS

GENERAL CONDITIONS: The "General Conditions" of the contract are a part of these specifications.

SCOPE OF THE WORK: This contractor shall furnish all labor and materials to install all glass blocks where shown on the drawings or specified hereinunder. This shall include the furnishing and installation of all expansion joint strips, oakum packing, felts, wall ties, wall anchors, calking, asphalt emulsion, and other labor and materials necessary for a complete installation. This contract does not include the preparation of the structure to receive the glass block panels, such as chases, stiffeners, etc., except as hereinafter specified.

MATERIALS: Glass Blocks . . . shall be hollow, partially evacuated, clear, colorless glass units as manufactured by the Pittsburgh Corning Corporation. Units shall be "all glass," formed of two halves fused together at a high temperature. Edges shall be so formed as to provide a "key-lock" mortar joint. All blocks shall be coated on the edges with a grit-bearing, water-and-alkaline-resistant plastic material.

Patterns—Sizes—Shapes . . . shall be as shown on the drawings or as specified hereinunder:

(Indicate PC patterns, sizes and shapes, and locations)

Expansion Joint Materials . . . where shown or required, shall be PC Expansion Strips as furnished by Pittsburgh Corning Corporation.

Asphalt Emulsion . . . where shown or required, shall be PC Asphalt Emulsion as furnished by Pittsburgh Corning Corporation.

Wall Ties . . . shall be PC Wall Ties of steel double wire mesh formed of two parallel wires (No. 9 gage) 2 in. on centers with electrically welded cross wires (No. 14 gage) at regular intervals, and shall be galvanized. Wall ties shall be installed in horizontal mortar joints of all glass block panels as follows:

For 5¾" size blocks—Every four courses.
For 7¾" size blocks—Every three courses.
For 11¾" size blocks—Every course.

Wall ties shall run continuously with ends lapped not less than 6 in. and shall run from end to end of panel. Wall ties shall not bridge expansion joints.

Wall Anchors . . . where shown on drawings shall be PC Wall Anchors as furnished by the Pittsburgh Corning Corporation and shall be No. 20 gauge perforated steel strips 24 in. long by 1¾ in. wide galvanized after perforating. All wall anchors must be crimped within expansion joints, and shall generally be placed 24 in. apart, occurring in the same joint as wall ties, and must be completely embedded in the mortar joint of the glass block panels.

Mortar . . . shall be one (1) part Portland Cement, one (1) part lime, and four (4) to six (6) parts sand, all measured by dry volumes, and *integral type waterproofer*, mixed to a consistency as stiff as will permit good working and shall be drier than for ordinary clay brickwork. For interior panels the waterproofer may be omitted. Admixtures in the form of setting accelerators and anti-freeze compounds shall not be used.

NOTE: At the discretion of the architect or engineer, a mortar prepared from masonry cement of low volume change, incorporating metallic stearate type waterproofer, and mixed in accordance with manufacturer's recommendation may be specified as an alternate.

Cement . . . shall be Type I conforming to the Standard Specifications for Portland Cement (A.S.T.M. Designation: C150-44).

Lime . . . shall be a high-calcium type* hydrated lime or masons' hydrate conforming to the Standard Specifications for Normal Finishing Hydrated Lime (A.S.T.M. Designation: C6-46T); or a well-slaked quicklime putty conforming to the Standard Specifications for quicklime for Structural Purposes (A.S.T.M. Designation: C5-26). Hydrated lime shall be soaked at least two (2) hours, and quicklime shall be slaked not less than forty-eight (48) hours and screened prior to use in mortar. Where lime in the form of putty is used, the amount specified shall be interpreted as the actual volume of putty.

*NOTE: Hydrated lime of the magnesia or dolomitic type may be used provided that not less than 92% of all active ingredients are completely hydrated.

Sand . . . shall conform with Standard Specifications for Aggregate for Masonry Mortar, Intermediate Grading (A.S.T.M. C144-44), but shall contain particles of such size that not more than twelve (12) per cent by weight shall pass a No. 100 mesh sieve, and one hundred (100) per cent shall pass through a No. 8 mesh sieve as defined therein.

Waterproofer . . . shall be Pittsburgh Plate Glass Co. type NV-3389 (metallic stearate type). It shall be added to the mortar at the time of mixing and in the proportion recommended by the manufacturer, except where a waterproof Portland Cement or prepared masonry mortar is used. In the latter cases, no waterproofer shall be added at the time of mixing.

Oakum . . . where indicated on drawings or required for lateral cushioning of glass block panels at jambs and head chases, shall be of non-staining type treated to prevent dry rot, and shall be subject to the approval of the architect or engineer.

Calking . . . mastic calking compounds as approved by the architect shall be applied evenly and to the full depth of recess provided at both interior and exterior perimeters of all glass block panels.

FLASHINGS: Unless otherwise specified, contractor shall furnish and install in locations shown or where required, flashings as are necessary to provide a complete installation.

INSTALLATION: Sills shall be heavily coated with asphalt emulsion which shall be allowed to dry for at least two hours before mortar is placed. Expansion joint strips shall be adhered to the jambs and head with asphalt emulsion, and shall run continuously in the expansion space, and must rest directly on the sill.

All mortar joints must be completely filled with mortar and *shall not be furrowed*. Mortar must not bridge across expansion joints. Blocks shall be laid up plumb, true to line, and with one-quarter (¼) in.* visible width mortar joints. While mortar is still plastic and before final set, the joints shall be compressed to a depth necessary to expose the corners of the blocks as sharp, clean lines, and joints shall immediately be tooled slightly concave and smooth. The number of courses of glass blocks laid in successive lifts shall be limited to prevent compaction of joints.

* Unless otherwise specified.

CLEANING: While mortar is still plastic and before final set, this contractor shall clean off all mortar and foreign material from the glass block surfaces. Final cleaning shall be done by others, after mortar has reached its final set.

PC Glass Blocks

MANUFACTURED BY:
PITTSBURGH CORNING CORPORATION
632 DUQUESNE WAY • PITTSBURGH 22, PA.
AVAILABLE THROUGH THE FOLLOWING BRANCHES OF
PITTSBURGH PLATE GLASS COMPANY

AKRON 4, OHIO
ALBANY 1, N. Y.
ALLENTOWN, PA.
AMARILLO, TEXAS
ANN ARBOR, MICH.
ATLANTA 1, GA.
ATLANTIC CITY, N. J.
AUGUSTA, GA.
AURORA, ILL.
AUSTIN, TEXAS
BALTIMORE 1, MD.
BEAUMONT, TEXAS
BINGHAMTON, N. Y.
BIRMINGHAM 1, ALA.
BOSTON 15, MASS.
BRONX 51, N. Y.
BUFFALO 2, N. Y.
BURLINGTON, VT.
BUTTE, MONT.
CHARLESTON, S. C.
CHARLOTTE 1, N. C.
CHICAGO 11, ILL.
CINCINNATI 2, OHIO
CLEVELAND 14, OHIO
COLUMBIA 3, S. C.
COLUMBUS 1, OHIO
CORPUS CHRISTI, TEXAS
DALLAS 2, TEXAS
DANVILLE, ILL.
DAVENPORT, IOWA
DECATUR 21, ILL.
DENVER 1, COLO.
DES MOINES 6, IOWA
DETROIT 2, MICH.
DUBUQUE, IOWA
DULUTH 2, MINN.
DURHAM, N. C.
ELGIN, ILL.
EL PASO, TEXAS
ERIE, PA.
FINDLAY, OHIO
FORT DODGE, IOWA
FORT WORTH 1, TEXAS
FOSTORIA, OHIO
GALESBURG, ILL.
GALVESTON, TEXAS
GRAND RAPIDS 3, MICH.
GREENSBORO, N. C.
GREENVILLE, S. C.
HAMILTON, OHIO
HAMMOND, IND.
HARRISBURG, PA.
HARTFORD 1, CONN.
HIGH POINT, N. C.
HOMESTEAD, PA.
HOUSTON 1, TEXAS
INDIANAPOLIS 6, IND.
IOWA CITY, IOWA
JACKSON, MICH.
JACKSONVILLE 3, FLA.
JEANNETTE, PA.
JOPLIN, MO.
KALAMAZOO, MICH.
KANSAS CITY 6, MO.
KITTANNING, PA.
KNOXVILLE 12, TENN.
LACROSSE, WIS.
LAFAYETTE, IND.
LANCASTER, PA.
LEXINGTON, KY.
LIMA, OHIO
LINCOLN 1, NEBR.
LITTLE ROCK, ARK.
LOUISVILLE 1, KY.
LYNCHBURG, VA.
MACON, GA.
MADISON 3, WIS.
MANCHESTER, N. H.
MANSFIELD, OHIO
MARIETTA, OHIO
MASON CITY, IOWA
McKEESPORT, PA.
MEMPHIS 1, TENN.
MIAMI 31, FLA.
MILWAUKEE 1, WIS.
MINEOLA, N. Y.
MINNEAPOLIS 15, MINN.
MOBILE 1, ALA.
MONTGOMERY 3, ALA.
MT. VERNON, N. Y.
MUSKEGON 4, MICH.
NASHVILLE 2, TENN.
NEWARK 8, N. J.
NEW CASTLE, PA.
NEW HAVEN 13, CONN.
NEW ORLEANS 1, LA.
NEW YORK (Brooklyn 1), N. Y.
OKLAHOMA CITY 2, OKLA.
OMAHA 1, NEBR.
OSHKOSH, WIS.
PADUCAH, KY.
PARKERSBURG, W. VA.
PEORIA 2, ILL.
PHILADELPHIA 32, PA.
PITTSBURGH 22, PA.
PORTSMOUTH, OHIO
PROVIDENCE 1, R. I.
RACINE, WIS.
READING, PA.
RICHMOND 8, VA.
ROANOKE 5, VA.
ROCHESTER 8, N. Y.
ROCKFORD, ILL.
SAGINAW, MICH.
ST. JOSEPH 7, MO.
ST. LOUIS 10, MO.
ST. PAUL 1, MINN.
SALINA, KAN.
SAN ANTONIO 6, TEXAS
SAVANNAH, GA.
SCRANTON 9, PA.
SHREVEPORT 90, LA.
SIOUX FALLS, S. DAK.
SOUTH BEND 24, IND.
SPRINGFIELD, ILL.
SPRINGFIELD 5, MASS.
SPRINGFIELD, MO.
SPRINGFIELD, OHIO
SYRACUSE 1, N. Y.
TALLAHASSEE, FLA.
TAMPA 1, FLA.
TERRE HAUTE, IND.
TIFFIN, OHIO
TOLEDO 6, OHIO
TOPEKA, KAN.
TRENTON 8, N. J.
TULSA 1, OKLA.
UTICA 3, N. Y.
WASHINGTON 2, D. C.
WASHINGTON, PA.
WICHITA 1, KAN.
WILKES-BARRE, PA.
WILMINGTON 17, DEL.
WORCESTER, MASS.
YOUNGSTOWN 3, OHIO
ZANESVILLE, OHIO

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COMPTON, CALIF.
EUREKA, CALIF.
FRESNO, CALIF.
GLENDALE, CALIF.
HOLLYWOOD, CALIF.
HUNTINGTON PARK, CALIF.
LONG BEACH, CALIF.
LOS ANGELES, CALIF.
MODESTO, CALIF.
OAKLAND, CALIF.
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POMONA, CALIF.
RIVERSIDE, CALIF.
SACRAMENTO, CALIF.
SAN BERNARDINO, CALIF.
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SAN FRANCISCO, CALIF.
SAN JOSE, CALIF.
SAN MATEO, CALIF.
SAN PEDRO, CALIF.
SANTA ANA, CALIF.
SANTA BARBARA, CALIF.
SANTA MONICA, CALIF.
STOCKTON, CALIF.
BOISE, IDAHO
NAMPA, IDAHO
BILLINGS, MONT.
BUTTE, MONT.
MISSOULA, MONT.
EUGENE, ORE.
PORTLAND, ORE.
OGDEN, UTAH
SALT LAKE CITY, UTAH
BELLINGHAM, WASH.
SEATTLE, WASH.
SPOKANE, WASH.
TACOMA, WASH.
VANCOUVER, WASH.
WALLA WALLA, WASH.
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YAKIMA, WASH.

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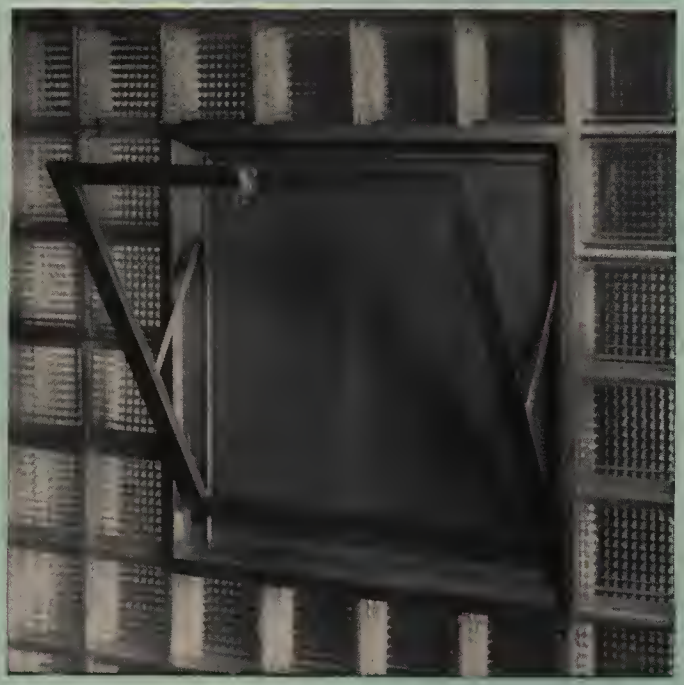
THE BRAND NEW

MARMET VENTILATOR

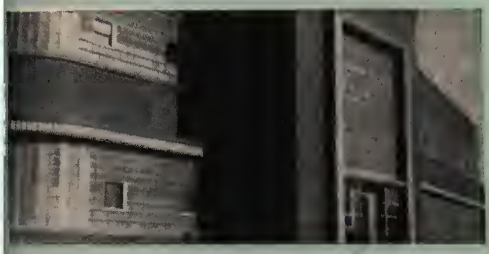
7c/5

FOR GLASS BLOCK CONSTRUCTION



FOR BEAUTY UTILITY DURABILITY

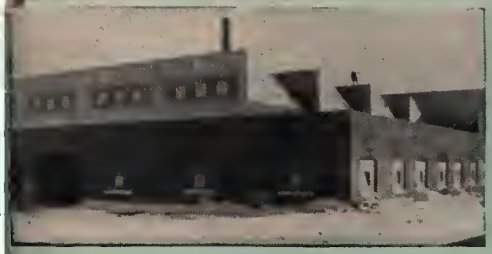
EXTRUDED ALUMINUM - - MILD STEEL



IN OFFICES

IN LAUNDRIES

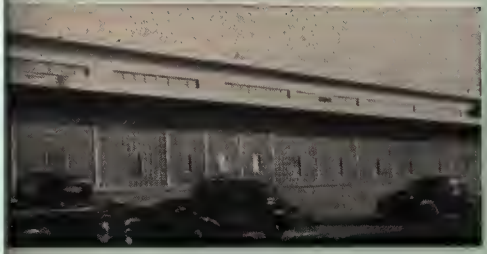
IN HOSPITALS



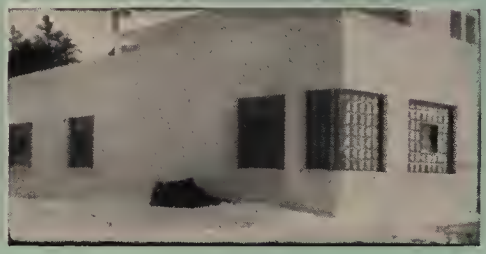
IN FACTORIES

IN FARM BUILDINGS

IN HOMES



IN WAREHOUSES



IN TAVERNS

IN STORES

MARMET CORPORATION

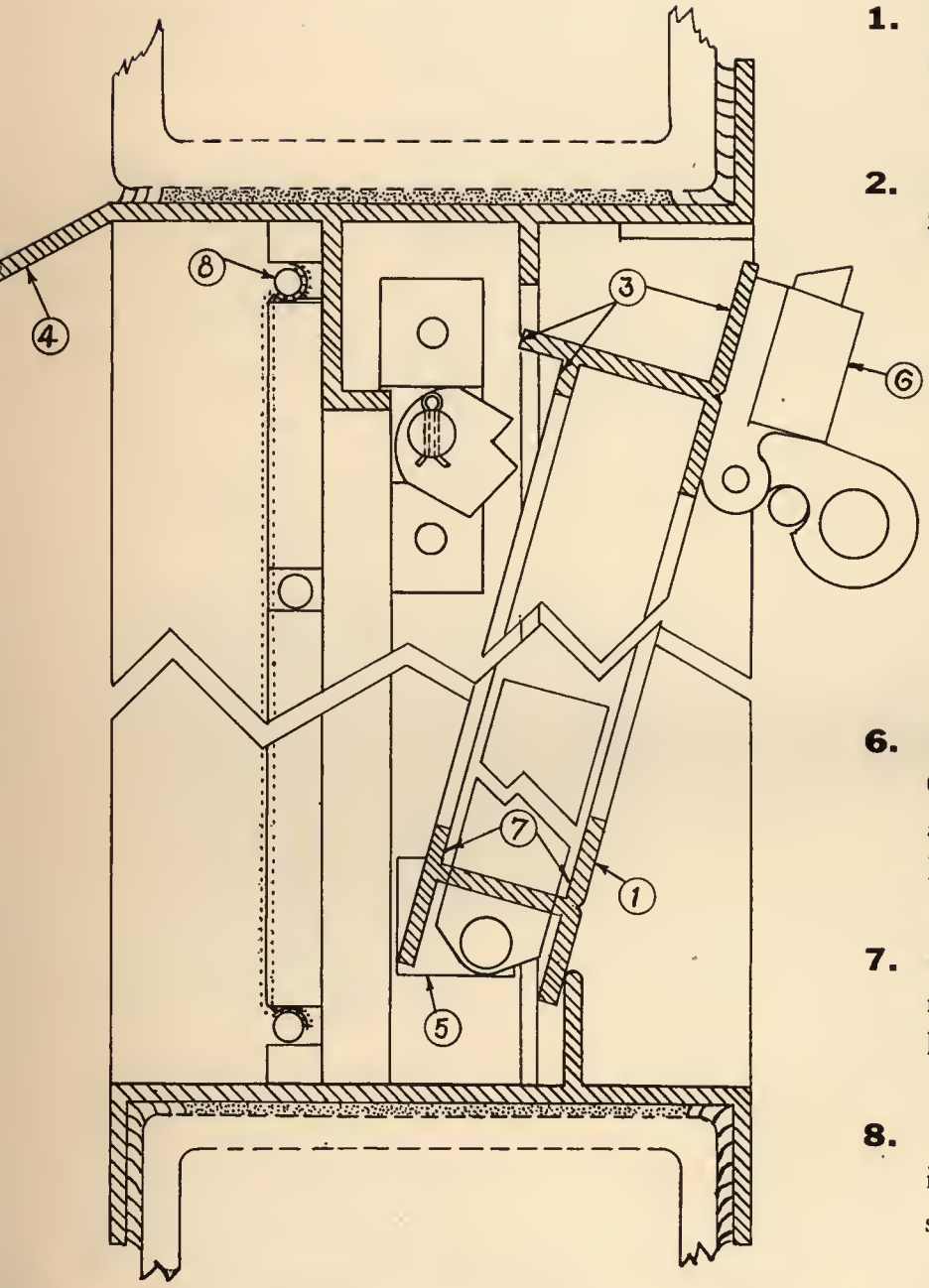
POST OFFICE BOX 866 WAUSAU, WISCONSIN

FORMERLY MARATHON METAL MANUFACTURING, INC.

8 IMPORTANT FEATURES!

MARMET

VENTILATION AND VSI



VERTICAL SECTION
TYPES -- 8A & 8M

1. **HEAVY EXTRUDED ALUMINUM SASH** May be removed for glazing or cleaning.

2. **ALL JOINTS OF FRAME AND SASH WELDED** for durability and strength.

3. **TRIPLE WEATHER SEAL** provides maximum protection.

4. **DRIP FLANGE** prevents water from streaking the window.

5. **FRICTION BLOCK** holds the sash in any position up to 75°.

6. **STURDY CAST TRANSOM CATCH** permits smooth and easy opening and closing regardless of height of ventilator from floor.

7. **MAY BE GLAZED** with any thickness of glass from single strength to one half-inch double glazed insulating unit.

8. **SCREENS** are easily put on from the inside or outside. They are furnished with steel or aluminum frames.

MANUFACTURED BY MARMET COR

VENTILATORS

SION FOR GLASS BLOCK CONSTRUCTION

The MARMET VENTILATOR is a practical, newly designed, wall ventilator window which provides ventilation and vision for glass block construction. Enhances the beauty of a glass block panel.

Frames are available in extruded aluminum and heavy gauge mild steel. Channels are 4-1/4" inside dimensions to allow 3/16" on each side for caulking. Extruded Aluminum sash are used on all ventilators. No lintel is required for the installation of MARMET VENTILATORS because they are sturdily constructed and carry the stress put on it by a glass block panel. When installing size 4024 or larger, it is advisable to brace the opening with a wood prop in the center while the panel is under construction..

MARMET VENTILATORS may also be used to advantage in groups, side by side, or one above the other, where a larger area of vision or outside ventilation is desired.

Because there are many requirements as to types and thicknesses of glass, all our ventilator prices refer to unglazed units. Ventilators may be ordered glazed to suit your needs and glazing will be billed at prevailing local prices.

Screens for all sizes are available with steel frame or with aluminum frame.

MARMET VENTILATORS are available in stock sizes as listed below and special sizes will be built in quantity lots to your specifications.

Sizes 1212, 2412, 2424 and 3624 may be used with six and twelve inch glass block. Sizes 2418, 3012 & 3018 may be used with six inch block. All other sizes, including 2424 may be used with eight inch glass block.

Specifications

General conditions of the contract are part of these specifications.

SCOPE OF WORK -- Contractor to furnish all ventilators as shown in plans and specifications and install same in a workmanlike manner.

MATERIALS -- Ventilators shall be constructed of (Aluminum, Mild Steel) as manufactured by the MARMET CORPORATION, Wausau, Wisconsin, of sizes as shown. Set in the same mortar as used to lay blocks. Glazing will be done with _____ glass.

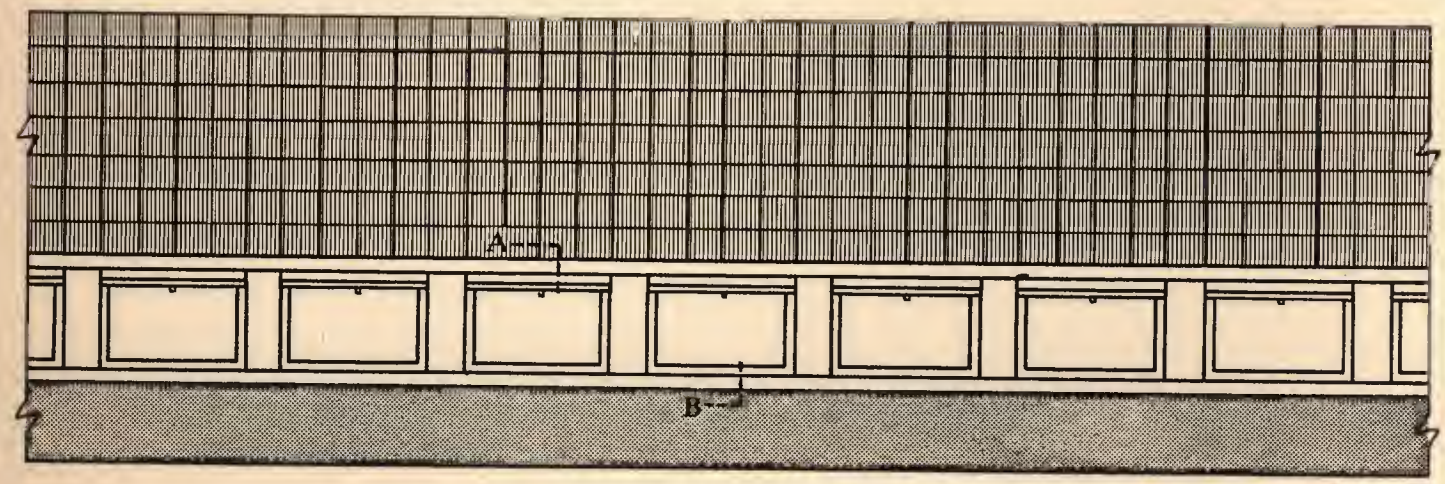
SCREENS: Furnish and install removable _____ screens.

CAULKINGS: Mastic caulking shall be applied evenly and to the full depth of joint in and outside perimeter of ventilator.

CLEANING -- Ventilators and Screens to be left clean on completion.

Painting -- Steel units shall be painted over factory prime coat before installation.

MARMET VENTILATORS



RIBBON WINDOW INSTALLATIONS as shown above may be used below glass block panels when continuous vision or maximum ventilation is needed. Ribbon windows are particularly adaptable in schools, commercial, industrial, and other installations. Additional information on the ribbon window installations sent upon request.

SIZE AND NUMBER	WIDTH	HEIGHT	REPLACES	GLAZING SIZE WIDTH x HEIGHT TYPE 8A & 8M	APPROXIMATE SHIPPING WEIGHT ALUMINUM VENTILATORS	MILD STEEL VENTILATORS	SCREENS
1212	12 inches	12 inches	4- 6 inch glass blocks	8-1/16x 8-3/4	10 lbs.	13 lbs.	2 lbs.
1212	12 inches	12 inches	1-12 inch glass blocks	8-1/16x 8-3/4	10 lbs.	13 lbs.	2 lbs.
2408	24 inches	8 inches	3- 8 inch glass blocks	20-1/16x 4-3/4	10 lbs.	13 lbs.	2 lbs.
2412	24 inches	12 inches	8- 6 inch glass blocks	20-1/16x 8-3/4	12 lbs.	16 lbs.	3 lbs.
2412	24 inches	12 inches	2-12 inch glass blocks	20-1/16x 8-3/4	12 lbs.	16 lbs.	3 lbs.
3208	32 inches	8 inches	4- 8 inch glass blocks	28-1-16x 4-3/4	12 lbs.	16 lbs.	3 lbs.
2418	24 inches	18 inches	12- 6 inch glass blocks	20-1/16x14-3/4	14 lbs.	18 lbs.	3 lbs.
1616	16 inches	16 inches	4- 8 inch glass blocks	12-1/16x12-3/4	11 lbs.	14 lbs.	2 lbs.
1624	16 inches	24 inches	6- 8 inch glass blocks	12-1/16x20-3/4	14 lbs.	18 lbs.	3 lbs.
2416	24 inches	16 inches	6- 8 inch glass blocks	20-1/16x12-3/4	13 lbs.	17 lbs.	3 lbs.
2424	24 inches	24 inches	16- 6 inch glass blocks	20-1/16x20-3/4	16 lbs.	21 lbs.	4 lbs.
2424	24 inches	24 inches	9- 8 inch glass blocks	20-1/16x20-3/4	16 lbs.	21 lbs.	4 lbs.
2424	24 inches	24 inches	4-12 inch glass blocks	20-1/16x20-3/4	16 lbs.	21 lbs.	4 lbs.
2432	24 inches	32 inches	12- 8 inch glass blocks	20-1/16x28-3/4	19 lbs.	25 lbs.	5 lbs.
3012	30 inches	12 inches	10- 6 inch glass blocks	26-1/16x 8-3/4	15 lbs.	20 lbs.	4 lbs.
3018	30 inches	18 inches	15- 6 inch glass blocks	26-1/16x14-3/4	17 lbs.	23 lbs.	4 lbs.
3216	32 inches	16 inches	8- 8 inch glass blocks	28-1/16x12-3/4	15 lbs.	20 lbs.	4 lbs.
3224	32 inches	24 inches	12- 8 inch glass blocks	28-1/16x20-3/4	18 lbs.	24 lbs.	5 lbs.
3624	36 inches	24 inches	24- 6 inch glass blocks	32-1/16x20-3/4	20 lbs.	26 lbs.	5 lbs.
3624	36 inches	24 inches	6-12 inch glass blocks	32-1/16x20-3/4	20 lbs.	26 lbs.	5 lbs.
3232	32 inches	32 inches	16- 8 inch glass blocks	28-1/16x28-3/4	21 lbs.	21 lbs.	5 lbs.
4016	40 inches	16 inches	10- 8 inch glass blocks	36-1/16x12-3/4	20 lbs.	26 lbs.	5 lbs.
4024	40 inches	24 inches	15- 8 inch glass blocks	36-1/16x20-3/4	21 lbs.	27 lbs.	5 lbs.
4032	40 inches	32 inches	20- 8 inch glass blocks	36-1/16x28-3/4	24 lbs.	31 lbs.	6 lbs.
4040	40 inches	40 inches	25- 8 inch glass blocks	36-1/16x36-3/4	27 lbs.	35 lbs.	6 lbs.

Manufactured by

MARMET CORPORATION

POST OFFICE BOX 866 **WAUSAU, WISCONSIN**

FORM 32

FORMERLY MARATHON METAL MANUFACTURING, INC.

WINCO

TRADE MARK REGISTERED U. S. PATENT OFFICE
U. S. PATENT 2273758-1836852 & PATS. PENDING.

Aluminum

VENTILATORS and WINDOWS

for use with Glass Block

Commercial and Residential

WINCO

WINCO VENTILATOR CO., INC.

4725 Goodfellow Boulevard, St. Louis 20, Mo.

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WINCO residential series ventilators

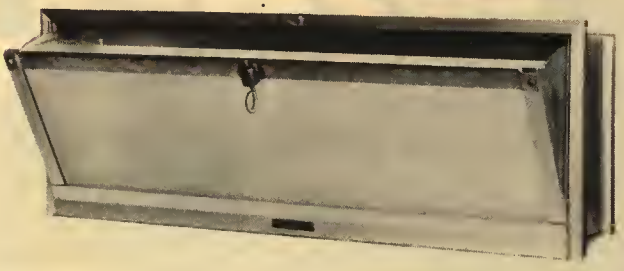
WINCO RESIDENTIAL VENTILATORS ARE RECOMMENDED for many applications and uses by Architects and Contractors throughout the country. While these units are used extensively in residential construction, they are also used in a variety of other applications such as: stores, warehouses, offices, clinics, washrooms, lavatories, rest rooms, dressing rooms, etc. Made of beautiful Anodized aluminum WINCO RESIDENTIAL VENTILATORS offer a durable and attractive unit for a large field of uses.

FEATURES include complete no-draft ventilation adjustable to desired amount of air. Complete privacy where required by means of enclosed side "wings". A complete package unit with glass and screen packed in individual cushioned cartons. No other accessories needed or required. Storm sash will be available interchangeable with screens.

SPECIFICATIONS: Glass block ventilators shall be residential hopper type as manufactured by the WINCO VENTILATOR COMPANY, INC., of St. Louis, Missouri. Frames shall be constructed of Extruded, Anodized Aluminum, alloy 63 ST-5, fillet torch welded into one solid member. Head section of ventilator to be load bearing for glass block above. Sash to consist of 7/32" glass retained in aluminum side "wings" which interlock with frame member. Glass to rest in rubber extrusion at bottom to insure weather-seal. Top channel of aluminum to retain top edge of glass equipped with spring latch. Screens shall be made of extruded frames with Alclad 16 mesh screen cloth or equal.

NOTE: WINCO RESIDENTIAL SERIES VENTILATORS are equipped with either clear Crystal sheet or obscure Factrolite glass 7/32" in thickness. When specifying, please note which type glass is required.

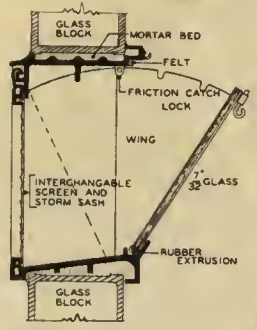
one block high



SIZES: WINCO RESIDENTIAL SERIES VENTILATORS are made in seven sizes for use with all sizes of glass blocks. Two types are available, one and two blocks high, having single and double "wings" respectively.

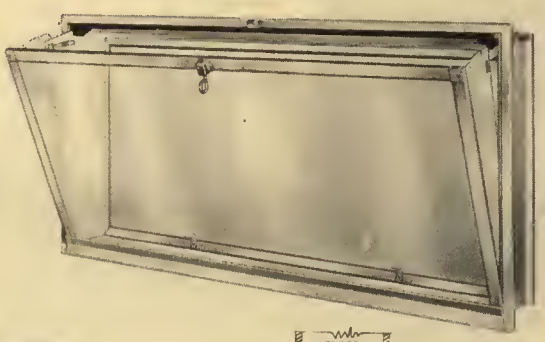
No. 38 replaces three 8" blocks 24" x 8"

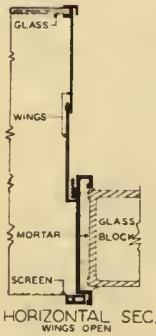
No. 48 replaces four 8" blocks 32" x 8"



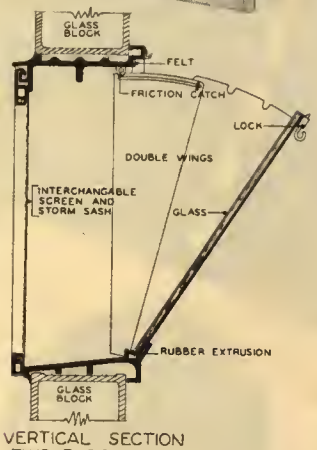
VERTICAL SECTION ONE BLOCK HIGH

two blocks high



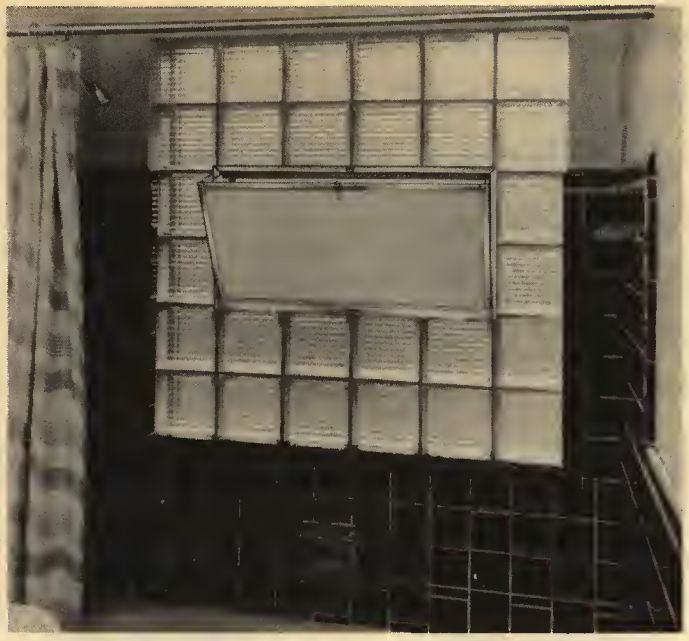


HORIZONTAL SEC. WINGS OPEN



VERTICAL SECTION TWO BLOCK HIGH

No. 16	replaces four	8" blocks	16" x 16"
No. 68	" six	8" "	24" x 16"
No. 88	" eight	8" "	32" x 16"
No. 86	" eight	6" "	24" x 12"
No. 106	" ten	6" "	30" x 12"

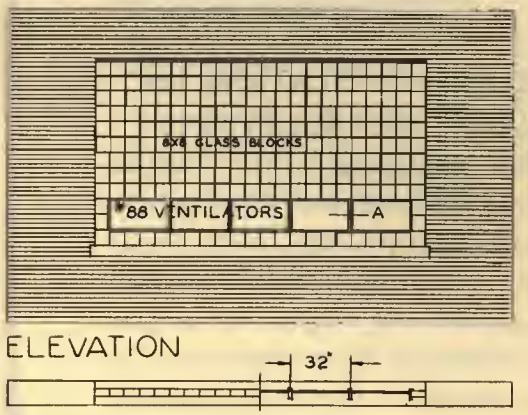


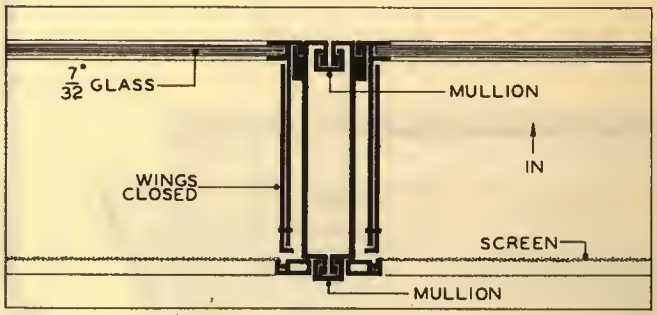
BATHROOMS WITH WINCO VENTILATORS and glass block are beautiful and practical. Free from rust or corrosion in high moisture conditions. Assure complete privacy when open or closed. No draft, rain or snow can enter.

KITCHENS need ventilation at all times. WINCO can be left open without fear of rain damage.

OFFICES, HOSPITALS AND REST ROOMS. Install WINCO'S for overall ventilation. No draft on desks or personnel. Used in operating rooms as supplement to air-conditioning.

"BELT" CONSTRUCTION





MULLION "A"

DATA

Above drawings show example of Winco Residential Units placed in continuous "Belt" construction. This type of construction may be accomplished without the use of any extra accessories, requiring only the use of a 3/8" head joint to properly work block across the panel. Note that mullion arrangement is a slip-fit and requires no tools or accessories to assemble. These units are load bearing for the block above. Mullions can be furnished in extra length to tie into sill construction if desirable to place ventilator units on sill. We recommend the use of tie reinforcements continuously across the entire panel, placed at the joint on the head of ventilator units and tied into jamb construction. Width of panel can vary in standard multiples to fit ventilators, which are furnished in two widths, 24" and 32".

INSTALLATION

Installation of these units is simple, however care should be taken to see that mortar joints bounding ventilator are full solid joints to insure weather tightness. Lay glass blocks to desired sill height. Set ventilator plumb and level on solid bed mortar joint. Build blocks up on both sides of ventilator being sure that vertical joints adjacent to ventilator are slushed solid. Care should be taken to align courses so that a bed joint is provided on head member of ventilator for course of block resting thereon. Ventilators should be caulked on the outside at sill and side members where flanges meet glass blocks. It is advisable to coat exposed part of ventilator units with oil or light grease in order to protect the finish during construction. Avoid the use of acid in cleaning.

WINCO commercial series ventilators

CONTROLLED VENTILATION IN GLASS BLOCK INSTALLATIONS

with WINCO commercial series ventilator units. Designed and engineered specifically for use in glass block construction, these ventilators are made of beautiful extruded aluminum. Life-expectancy of unit equals that of glass block with practically no maintenance. Designed for maximum ventilation area and vision.

Advantages of WINCO commercial series ventilators. These units afford efficient controlled ventilation for all conditions. Operation is smooth and effortless due to proper design and balance. Easily operated by use of pole where installation is above normal height. Economical because of long life without maintenance. Beautiful in appearance with smooth satin finish. These ventilators make an excellent supplement to air-conditioned areas and are available in sizes to furnish fire escape exits where required.

Engineering Information Available on Request

FEATURES

Special features of WINCO COMMERCIAL VENTILATOR UNITS include:

SELF-CONTAINED UNIT, complete with hardware and screen, finished with exception of glazing. No painting required.

ADJUSTABLE to any desired amount of ventilation up to 70 degrees, draft eliminated by upward deflection of air.

FULL SUPPORT TO GLASS BLOCK ABOVE by means of reinforced head member requiring no extra lintel or rods.

BEAUTIFUL anodized, satin finish which will not turn dark or corrode.

SCREENS made of aluminum and easily installed from the inside.

STORM SASH which are interchangeable with screens available.

WORKMANSHIP of a quality unsurpassed to produce a clean, precise and attractive unit to blend with glass block.

PACKAGING is individual with strong box-board cartons to protect units against bending, scratching and other damage during shipment and handling.

CONSTRUCTION. Construction of WINCO COMMERCIAL SERIES VENTILATORS will meet the most rigid specifications which includes the following:

ALL ALUMINUM construction, heavy extruded frame and sash of 63 ST-5 alloy.

WELDED FRAME assembly made in accurate jigs. All frame joints are fillet torch welded for maximum strength and weather tightness.

WEATHER-TIGHT FIT, accurately fit sash with two point contact on all four sides to insure complete seal.

EXTRA WIDE SASH MEMBER to take up to ¾" double glazed units.

HEAVY CAST BRONZE LATCH of highest quality to insure long life usage.

ANODIZED FINISH gives beautiful satin surface to insure long life free of corrosion.

SCREENS made of extruded aluminum frames with Alclad Aluminum screen cloth or equal.

STORM SASH made of extruded aluminum, interchangeable with screens.

APPLICATIONS

WINCO COMMERCIAL VENTILATORS are designed for

OFFICES for overall ventilation or supplement to air-conditioning. No draft on personnel or desks by means of controllable tilt-top design.

SCHOOLS for complete ventilation and vision. Rugged construction of these units insure many years of trouble free usage. Sizes with large clear openings for fire exit purposes. Very low maintenance cost. Controlled ventilation without draft.

HOSPITALS AND CLINICS. With the universal use of glass block in this type of installation, WINCO VENTILATORS fill the need for clean practical units for overall ventilation and supplement to air-conditioning. Anodized finish insures clean sanitary conditions. Low maintenance cost.

STORES where maintenance problems are of prime importance are ideal types of construction for the use of WINCO VENTILATORS with glass block.

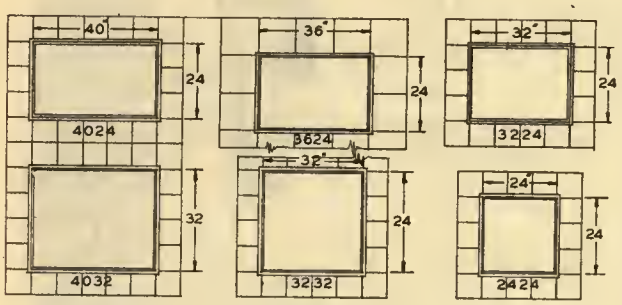
WAREHOUSES AND FACTORIES require rugged equipment and low cost maintenance plus efficient ventilation.

DAIRY PLANTS where sanitation and durability are of prime importance. Anodized WINCO VENTILATORS are not effected by high moisture and lactic acid conditions.

INSTITUTIONS of all types where rugged durability and low maintenance costs are a major problem.

SIZES

WINCO COMMERCIAL VENTILATORS are available in six stock sizes as shown below. Information concerning special sizes will be given at time of request. Note: Sizes of ventilator units are made to conform with standard glass block construction with joints ranging from 1/4" to 3/8" in thickness.



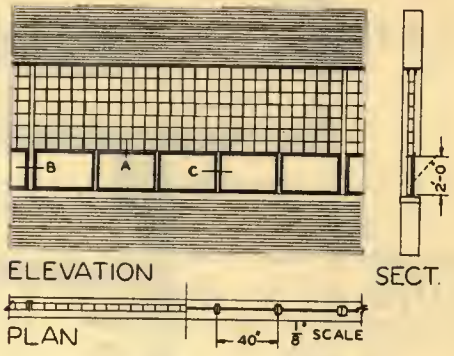
SPECIFICATIONS

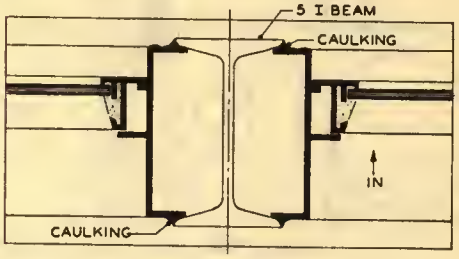
Glass block ventilators shall be commercial projected type as manufactured by the WINCO VENTILATOR COMPANY, INC., of St. Louis, Missouri. Frames shall be constructed of 1/8" extruded Anodized aluminum, alloy 63 ST-5, fillet torch welded into one solid member. Head section of ventilator units to be reinforced and load bearing for glass block above. Sash to be extruded aluminum, alloy 63 ST-5, width being sufficient to take 1/2" double glazed units. Sash to be equipped with heavy cast bronze, spring latch with ring handle. Screens shall have extruded aluminum frames, screen cloth to be 16 mesh Alclad aluminum or equal. Glazing, supplied by others.

INSTALLATION

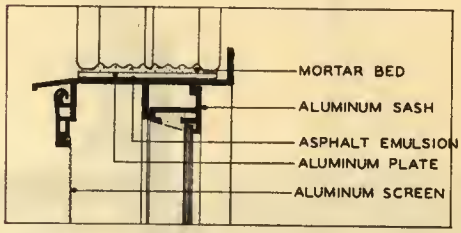
Installation of these units is simple, however care should be taken to see that mortar joints bounding ventilator are full solid joints to insure weather tightness. Lay glass blocks to desired sill height. Set ventilator plumb and level on solid bed mortar joint. Build blocks up on both sides of ventilator being sure that vertical joints adjacent to ventilator are slushed solid. Care should be taken to align courses so that a bed joint is provided on head member of ventilator for course of block resting thereon. Ventilators should be caulked on the outside at sill and side members where flanges meet glass blocks. It is advisable to coat exposed part of ventilator units with oil or light grease in order to protect the finish during construction. Avoid the use of acid in cleaning.

CONTINUOUS FENESTRATION

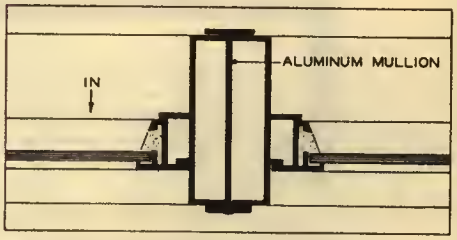




MULLION 'B'



HEAD DETAIL 'A'



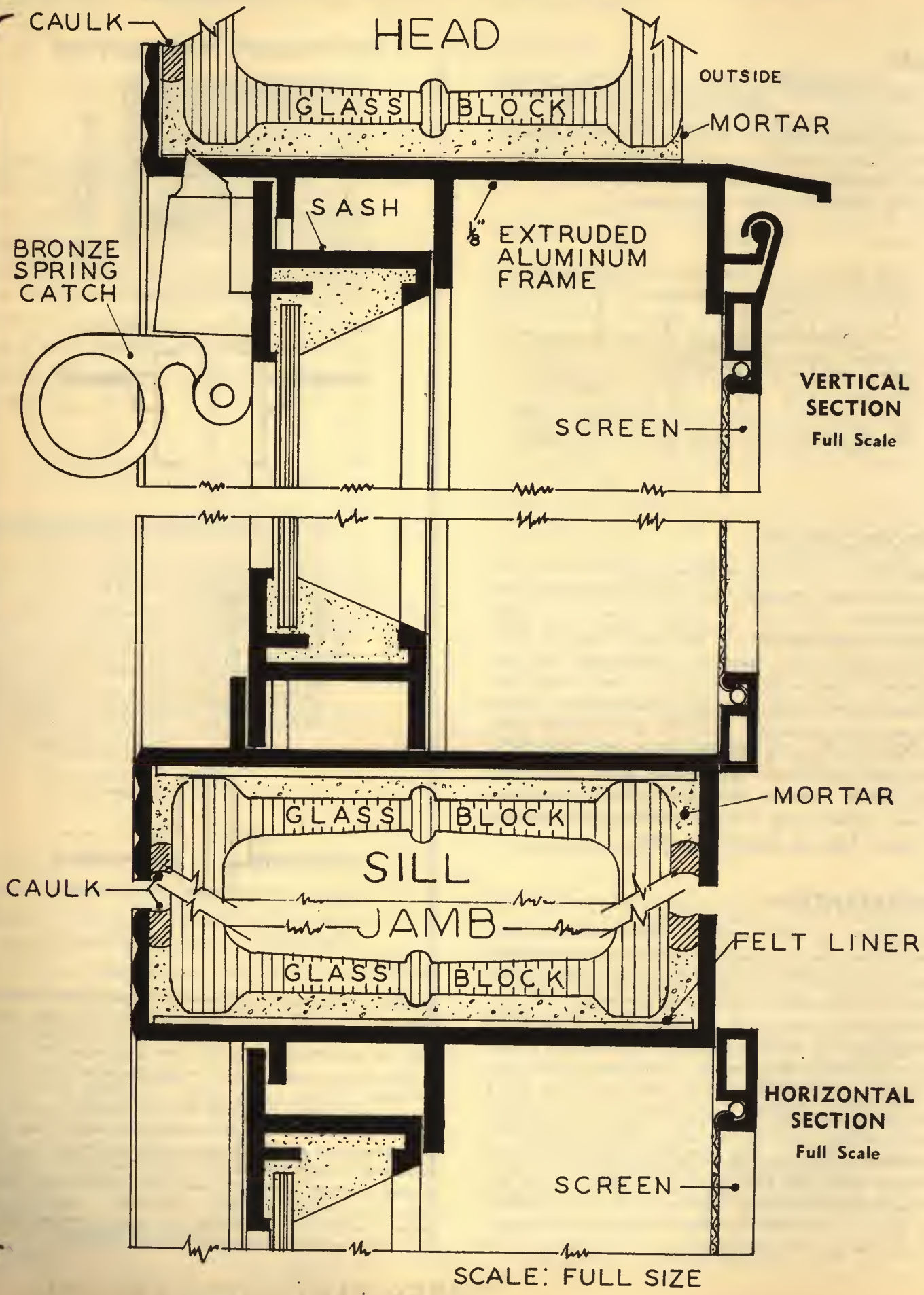
MULLION 'C' SCALE 1/4 FULL SIZE

DATA

Above are shown examples and details of the application of Winco Commercial projected type ventilator units for continuous fenestration construction. These units are made in two sizes, being 40" x 24" and 40" x 32". The 40" width being figured from center of mullion to center of mullion thereby working block. In head detail "A" note aluminum plate. This member is continuous for the entire length of the panel and is flanged up at columns. It is fastened to the column at either end with bolts through the web. These units are load bearing and no extra accessories, such as channels or angles, are required. Mullion sections are furnished in extra length to tie into sill construction. Box formed by mullions and at columns should be stuffed with a glass wool or similar insulation. We recommend the use of tie reinforcements continuously across the entire panel and tied into jamb.

WINCO

commercial series ventilators . . . details



INDIVIDUAL UNIT VENTILATORS

FOR ALL GLASS BLOCK INSTALLATIONS

Inside View

SINGLE BLOCK UNITS

WEATHER-BLOC SINGLE UNIT VENTILATORS fill the need for ventilation where larger units are impractical and glass block panels are of a size too small. Very versatile since each is the exact size of any glass block and may be located any place in a panel. WEATHER-BLOC can be arranged to form a design in keeping with the pattern of construction in which they are used.

FEATURES

WEATHER-BLOC are exact size of glass block making installation as simple as laying of block itself, no caulking is required. A complete package unit in itself with no other accessories necessary. Beautiful in appearance to harmonize with all patterns of glass block. Practical for installation in panels already in place simply by breaking out a block and replacing with a WEATHER-BLOC. Durable, made of satin finished stainless steel and glass. Controlled ventilation by means of two plate glass louvres, smooth in operation with no draft.

SIZES

WEATHER-BLOC are made in three standard sizes to conform with all three sizes of glass block on the market.

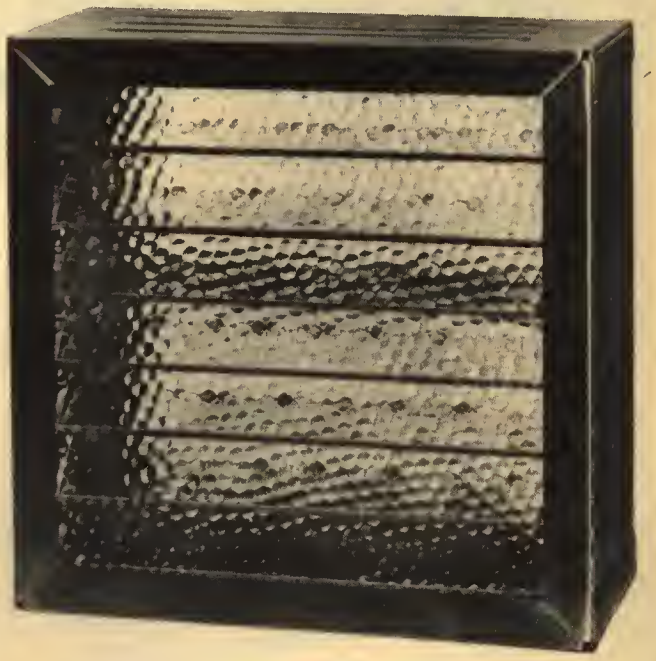
12" — 11¾" x 11¾" equal to standard 12" glass block
8" — 7¾" x 7¾" 8" " " " " "
6" — 5¾" x 5¾" 6" " " " " "

CONSTRUCTION

WEATHER-BLOC are sturdily built of stainless steel, reinforced and ribbed for added strength. Corrugations are arranged to allow for expansion and contraction and to retain and adhere to mortar. Thick glass louvre-diffusers are provided at the outside to break up light and air before it can enter, also deflect rain, snow and dust particles. Inner louvres, which are air tight sealing, are made of plate glass, retained in stainless steel frames which parts are easily removed for cleaning. Adjustable to direct air either upward or downward. Each unit is equipped with 16 mesh screen permanently installed.

AVAILABLE from our stock on order in all sizes. Packaged four to a carton strongly reinforced.

Order 12"-8" or 6" WEATHER-BLOC from your local WINCO DEALER or DISTRIBUTOR.



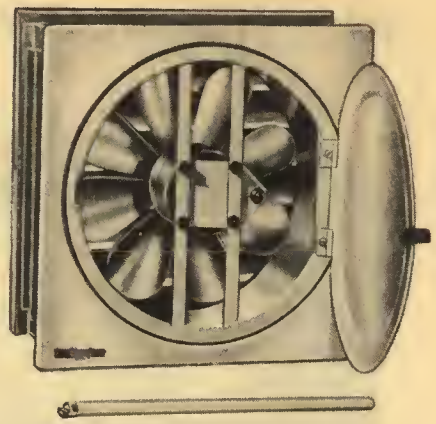
Outside View

WEATHER-BLOC

TRADE MARK

WINCO ventilators and fans in glass block

glass block exhaust fans



WINCO FANS are made especially to fit and for use in glass block panels. Beautifully finished as well as efficient in operating economy.

ADVANTAGES AND APPLICATIONS. WINCO FANS are easy to install since they are a complete self-contained unit. Installation can be effected in glass block panels which are already in place (see assembly pictures). Automatic switch starts motor when door is opened and stops motor when door is closed. These fans are ideal for use in applications where forced ventilation is desired, such as: bathrooms, washrooms, lavatories, kitchens, offices, etc.

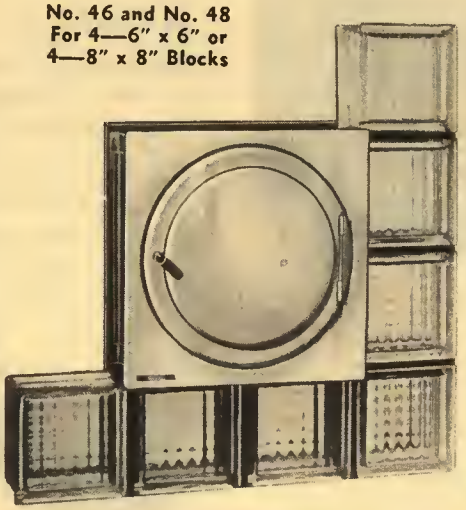
types and sizes

WINCO FANS are available in sizes to fit all standard size glass blocks. There is a size to fit all needs and type of installations.

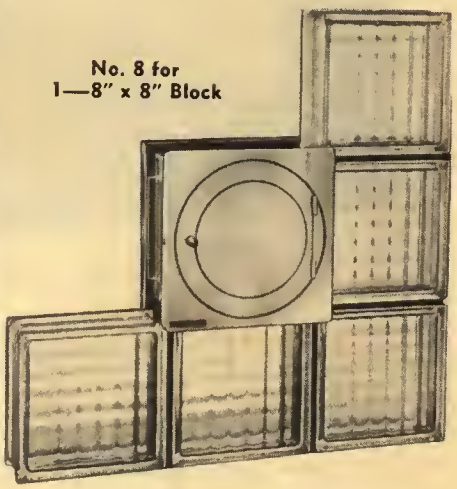
three stock sizes

No. 8 for 1 — 8" x 8" glass block
No. 46 for 4 — 6" x 6" glass blocks
No. 48 for 4 — 8" x 8" glass blocks

No. 46 and No. 48 For 4—6" x 6" or 4—8" x 8" Blocks

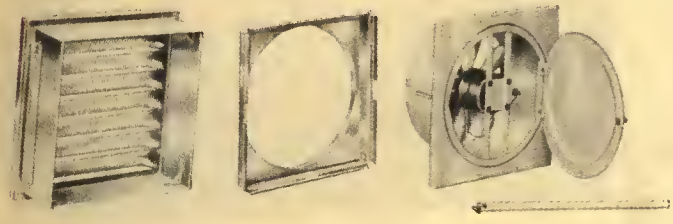


No. 8 for 1—8" x 8" Block



assembly

1. Outside louvre and frame.
2. Inside retainer frame and ring.
3. Inside face and frame retaining motor and blades.



specifications

Wiring: Heavy rubber covered cord and plug.

Motor: Induction type. No brushes, no radio interference. Bronze self-aligning bearings.

Current: 110-20 V. 50-60 cycle. A. C. 1450 R. P. M.

Control: Door-operated switch, with hooked rod for opening door.

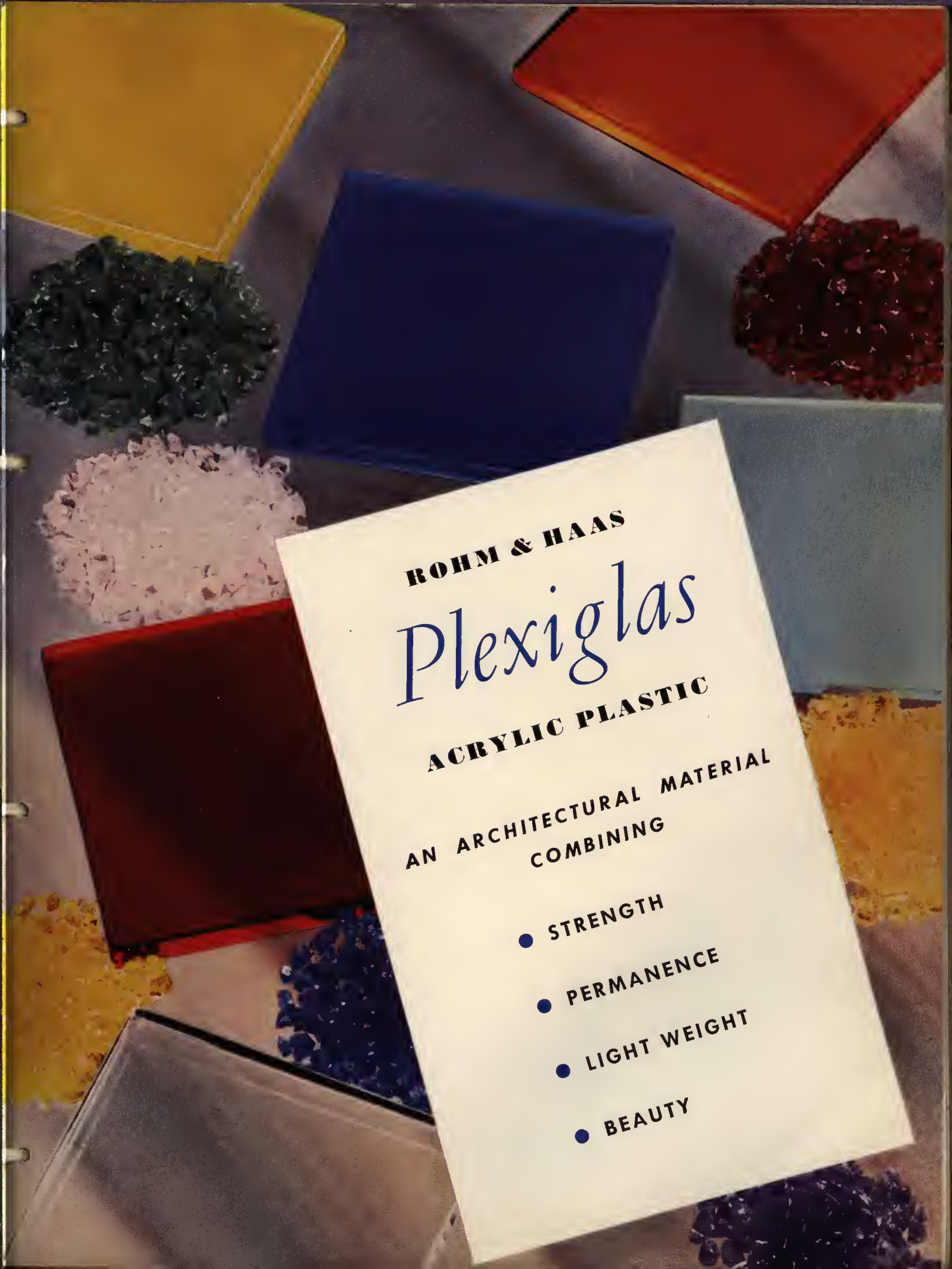
Finish: Heavy galvanized iron louvre and box with baked white enamel interior finish with black trim.

Capacity: No. 8 fan—250 C. F. M. No. 46 fan—400 C. F. M. No. 48 fan—850 C. F. M.

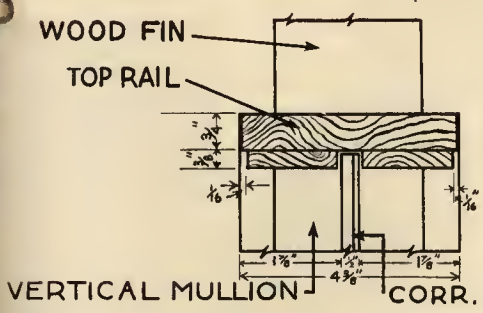
Blades: One piece aluminum.

WINCO Ventilator Co INC.
ST. LOUIS 20, MISSOURI

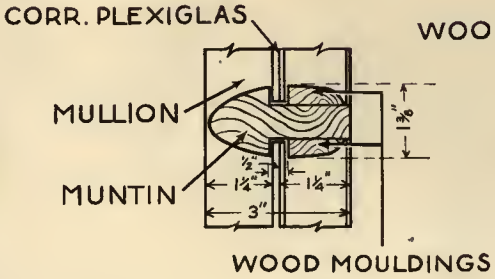
SEE YOUR LOCAL GLASS BLOCK DEALER OR DISTRIBUTOR


ROHM & HAAS
Plexiglas
ACRYLIC PLASTIC
AN ARCHITECTURAL MATERIAL COMBINING
• STRENGTH
• PERMANENCE
• LIGHT WEIGHT
• BEAUTY

PLEXIGLAS partitions are functional and highly decorative in public buildings or homes. The light weight of the virtually unbreakable corrugated-patterned material in this partition at the Bonwit Teller store, Philadelphia, permits the use of a simple, graceful frame. Designed by Adolph Novak, New York City, installed by American Woodworkers, Philadelphia. Installation details on facing page.



— SECT. "B-B" —



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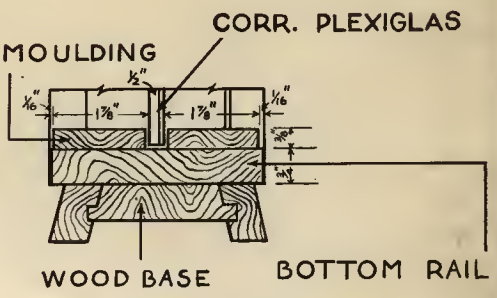

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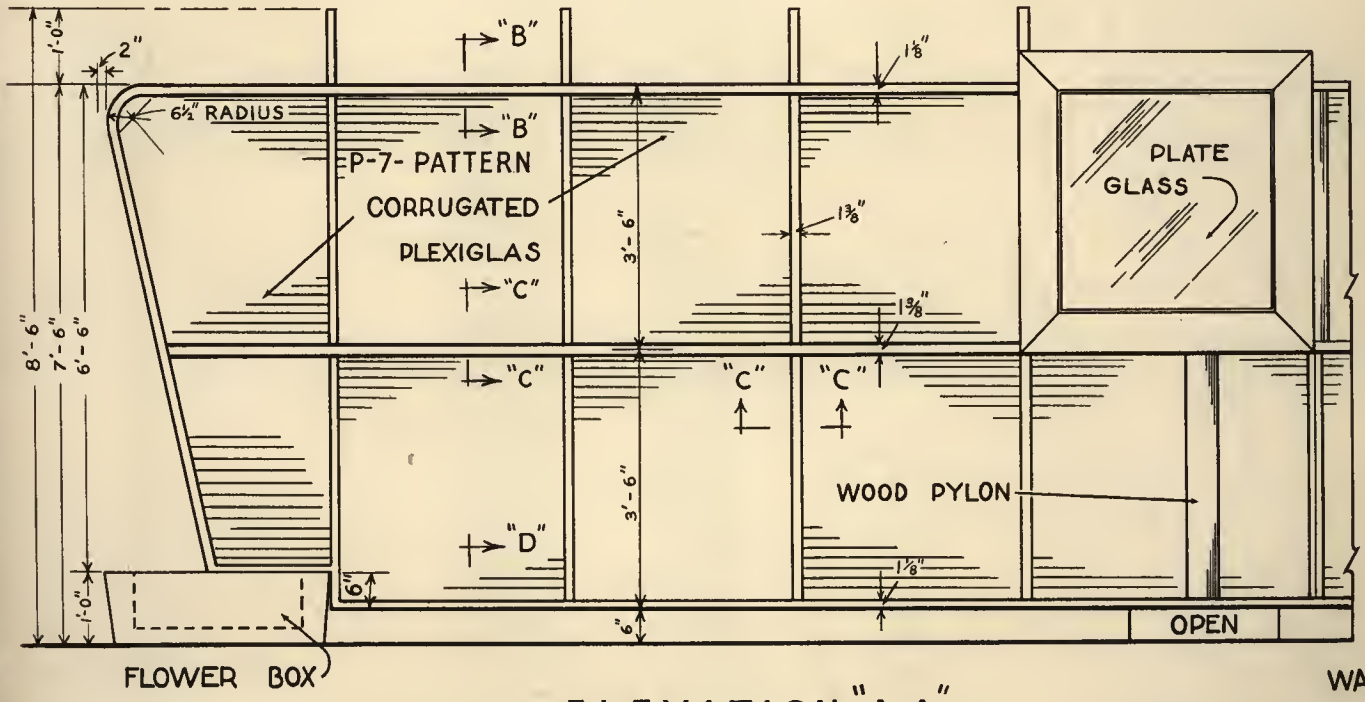
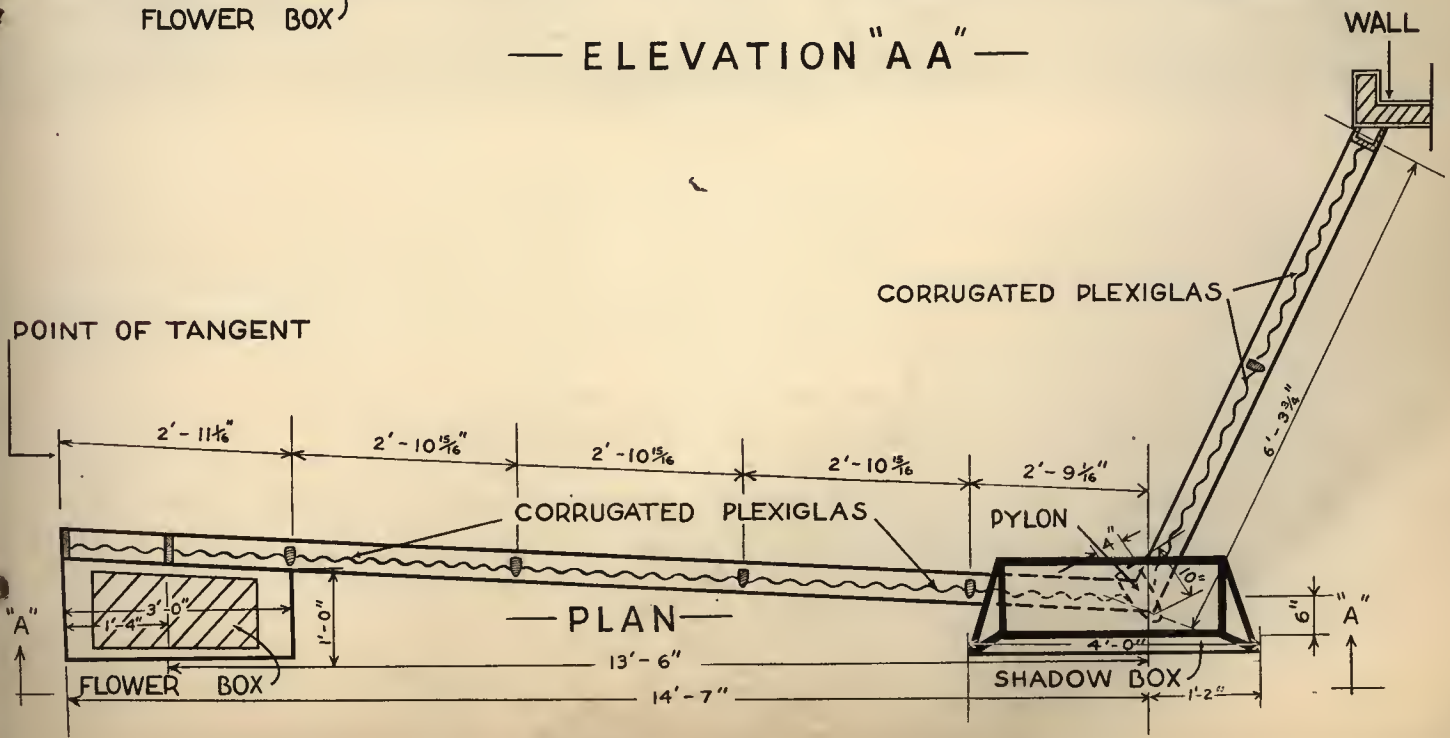


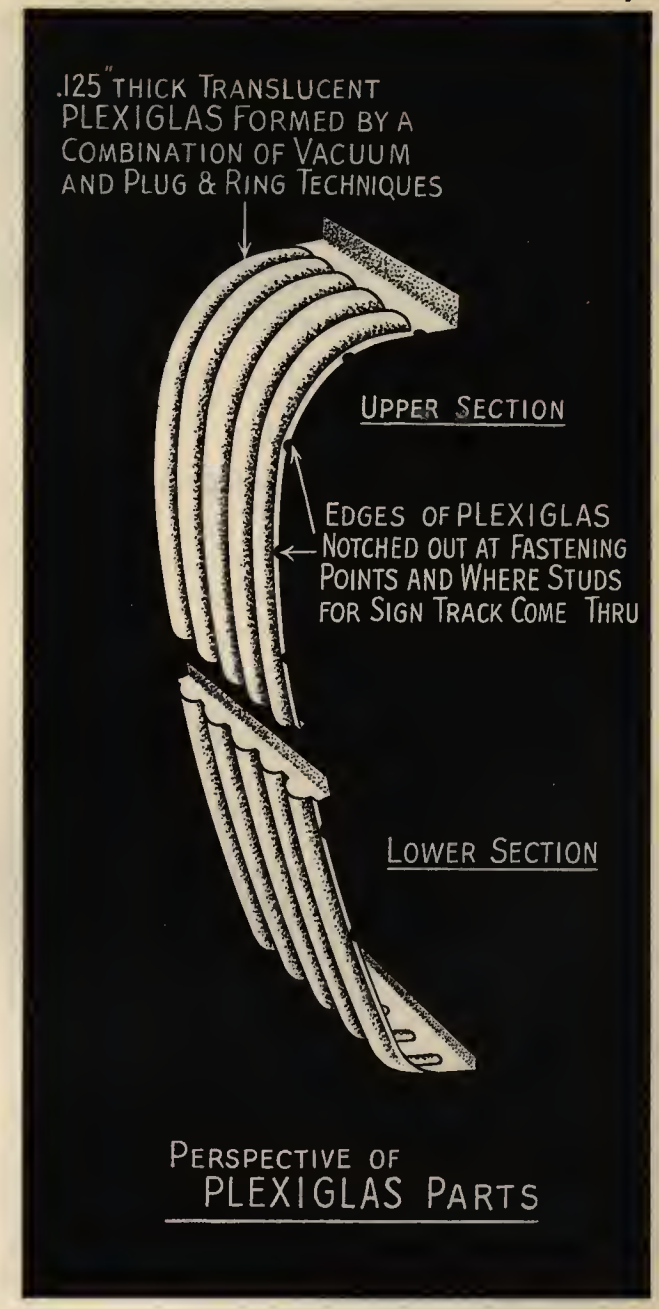
— ELEVATION "A A" —



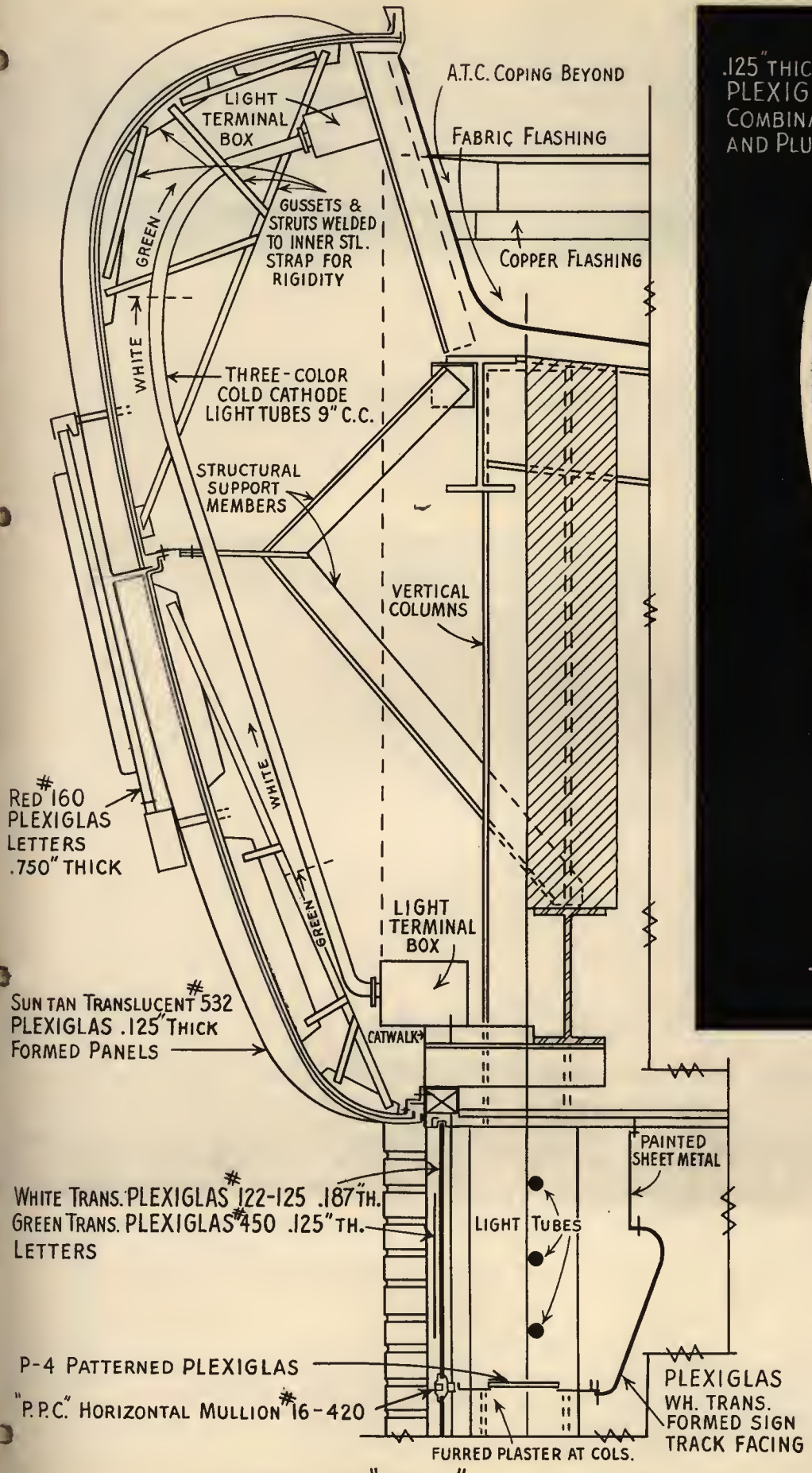
— PLAN —

The upper facade of this new supermarket in Atlantic City, N. J., is made of translucent tan PLEXIGLAS. Nineteen panels, 11 feet in developed height and weighing only 35 pounds apiece, stretch nearly 80 feet across the front of the store and serve as a glowing background for large red PLEXIGLAS letters. The distinctive appearance of corrugated PLEXIGLAS, combined with the weatherability and strength-without-weight of this acrylic plastic, has led to striking new architectural treatments of store fronts.

Construction details of the Food Fair store's lettered facade, erected by Hutchinson Sign Co., Trenton, N. J., are shown on the facing page.



PERSPECTIVE OF
PLEXIGLAS PARTS



SECTION "A-A"
(SCALE 1½" = 1'-0")

PLEXIGLAS

PLEXIGLAS is the trade mark, Reg. U. S. Pat. Off., for a thermoplastic acrylic resin manufactured by the Rohm & Haas Company. It is produced as cast sheets in flat and corrugated form with smooth and patterned surfaces, and as rods and molding powders. Only Rohm & Haas makes PLEXIGLAS.

PLEXIGLAS SHEETS

STRENGTH PLEXIGLAS is practically unbreakable, having an inherent strength and resilience that enable it to withstand heavy blows.

LIGHT WEIGHT It is less than half as heavy as glass or aluminum.

PERMANENCE PLEXIGLAS will withstand prolonged exposure to sun and extremes of weather. It will not deteriorate with age.

CLARITY In clear form, PLEXIGLAS is as transparent as the finest optical glass. The purity of the material makes possible its manufacture in a highly effective and extensive range of transparent, translucent and opaque colors.

WORKABILITY PLEXIGLAS can be formed, when heated to a pliable state, to almost any shape or curve; it can be sawed, machined and drilled as easily as woods or soft metals. The excellent workability of the plastic gives broad scope to the work of product designers.

PHYSICAL PROPERTIES

MECHANICAL

Specific Gravity	1.18
Tensile Strength	6,800 - 8,800 psi
Flexural Strength	13,000 - 15,000 psi
Compressive Strength	13,000 - 15,000 psi
Impact Resistance, ASTM Charpy Unnotched Bar	3 - 4 ft. lb.
Modulus of Elasticity	$3 \cdot 4 \times 10^5$ psi
Coefficient of Expansion	8×10^{-5}/°C.
Water Absorption (max. wt. gain, 24 hours)	0.6%

PLEXIGLAS has excellent dimensional stability. It is featured by a marked resistance to cold flow or creep, and its impact strength remains high at low temperatures.

ELECTRICAL

Dielectric Strength (short time test)	500 volts/mil
Power Factor (at 60 cycles)	5—6%
Dielectric Constant (at 60 cycles)	3.4—3.6

The efficiency of PLEXIGLAS as an insulator is not affected by age, weather or immersion in water.

THERMAL

Resistance to Heat (°F. continuous)	140°—160°F.
Coefficient of Thermal Expansion	.00005 in./in./°F. at 77°F.

A special heat-resistant material, PLEXIGLAS II, has an effective maximum service temperature of 180°—200°F.

OPTICAL

Light Transmission	90—92%
Refractive Index N_D	1.488—1.489
Dispersion N_F-N_C	0.008

In addition to its excellent transmission of all visible colors of the spectrum, PLEXIGLAS transmits infra-red, ultra-violet and X-rays. For special applications, an ultra-violet absorbing grade is available. PLEXIGLAS is also noted for its ability to "pipe" light, even around curves and angles.

CHEMICAL

Unaffected by:	*Affected by:*
Common chemicals, in solution	Concentrated alcohols
Kerosene, hexane, white gasoline	Benzene
Mineral oils and greases	Acetone
Animal oils and greases	Lacquer thinners
Photographic solutions	Automotive gasoline
Battery solutions	Aviation gasoline
Mineral acids	Carbon tetrachloride
Strong alkalis	Window-cleaning compounds

RATE OF BURNING

PLEXIGLAS is classified as "Slow Burning" under Federal Specifications LP-406A. Hot metals will not ignite it; if ignited by an open flame, it burns as slowly as soft wood.

PLEXIGLAS is tasteless, odorless, and completely compatible with human tissue.

PLEXIGLAS is thermoplastic, and its properties will vary slightly with temperature changes. Values given apply for 25°—30°C.

COLORS

Widely used as a colorless, sparkling material, PLEXIGLAS is also available, for applications where color is desired, in the following standard colors:

Amber, Blue, Green, Red, Yellow — Transparent	Red Translucent
	Red Fluorescent
	White Translucent
	Green Fluorescent
	Black Opaque

Custom-made colors and shades are available on quantity orders.

PLEXIGLAS SHEETS
TYPES—SIZES—THICKNESSES

FLAT SMOOTH

Standard cast sheets are flat and smooth, with highly polished surfaces of sparkling natural beauty in both clear and colored form.

PATTERNED

Patterned PLEXIGLAS provides an interesting surface texture in many decorative and architectural applications. Eleven standard patterns, such as fluted, ribbed, pebbled and frosted, are available.

FLUORESCENT

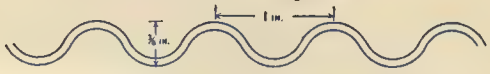
DAYLIGHT FLUORESCENT PLEXIGLAS, recently introduced, is a self-illuminating material used for indoor signs and decorative panels. With it, "edge-lighted" effects are obtained without directing light into the plastic. Currently available in red and green.

CORRUGATED

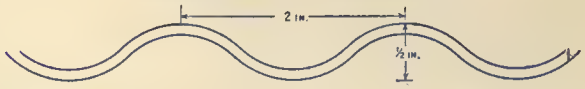
PLEXIGLAS is also available as corrugated material, for applications where a combination of vertical rigidity and horizontal flexibility is desired. It is produced in two degrees of corrugation:

TYPES

C-1: Frequency 1", Amplitude 3/8"



C-2: Frequency 2", Amplitude 1/2"



RODS

Satin-finish PLEXIGLAS rods are offered in diameters of 1" to 2". Lengths range from 12" to approximately 60". Information sent on request regarding specific lengths.

THICKNESSES (INCHES)

SIZES (INCHES)	6 x 12	12 x 12	12 x 18	12 x 24	12 x 36	12 x 48	12 x 60	18 x 18	18 x 24	18 x 36	18 x 60	20 x 50	24 x 24	24 x 36	24 x 48	24 x 60	30 x 36	30 x 48	36 x 36	36 x 48	36 x 60	36 x 72	40 x 50	48 x 48	48 x 60	48 x 72	53 x 80	60 x 72	64 x 79	67 x 79	up to 100 x 120
.040	1	1	1	1	1	1		1	1	1		1	1	1	1				1	1			1								
.060	1	1	1	1	1	1	1	1	1	1	1	1/6	1	1/6			1		1	1,2 3,6	1/3 6		1/3 6								
.080	1	1	1	1	1	1	1	1	1	1	1	1	1	1			1		1	1	1		1								
.100	1	1	1	1	1	1	1	1	1	1	1	1	1	1			1		1	1	1	1	1		1						
.125	1	1	1	1	1	1	1	1	1	1	1	1/6	1	1/6	1	1	1	1	1	1,2,3 4,5,6	1/3 6	1/3	1/3 6	1/2 3	1/3	1/3	1	1/3	3	1	
.150	1	1	1	1	1	1	1	1	1	1	1	1/6	1	1/6	1	1	1	1	1	1/6	1/6	1/3	1/3	1/2 3	1/3	1/3	1	1/3	3	1	
.187	1	1	1	1	1	1	1	1	1	1	1	1/6	1	1/6	1	1	1	1	1	1,2 3,6	1/3 6	1/3	1/6	1/2 3	1/3	1/3	1	1/3	3	1	1
.220	1	1	1	1	1	1	1	1	1	1	1	1/6	1	1	1	1	1	1	1	1/2 3	1/3	1	1/3	1	1/3	1/3	1	1/3	3	1	1
.250	1	1	1	1	1	1	1	1	1	1	1	1/6	1	1/6	1	1	1	1	1	1,2,3 4,5,6	1/3 6	1/3	1/6	1/2 3	1/3	1/3	1	1	3	1	1
.312	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1/6	1/6	1	1	1	1	1	1	1		1	1
.375	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1/6	1/6	1	1/6	1	1	1	1	1		1	1
.500	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1/6	1	1/6	1	1	1	1	1	1	1	1		1	1
.625 to 2.000*	1	1		1	1	1						1	1	1	1	1		1	1	1			1		1						
2.250 to 3.000#					1									1						1											

CODE: 1—Flat Smooth, 2—Corrugated, Type C-1, 3—Corrugated, Type C-2, 4—Patterned, 5—Corrugated-Patterned, 6—Fluorescent.
*.625" to 2.000" in increments of .125". #2.250" to 3.000" in increments of .250", with unfinished surfaces varying from machine-planed to high gloss.
NOTE: COLORS—Colors (see page 6) are available in the following sizes: 20"x50", 24"x36", 36"x48", 36"x60", 40"x50", in the following thicknesses: .060", .125", .187", .250". In addition, Red, Amber, and Black are available in 36"x48" sheets in thicknesses of .312", .375", .500", .625", .750", 1.000".

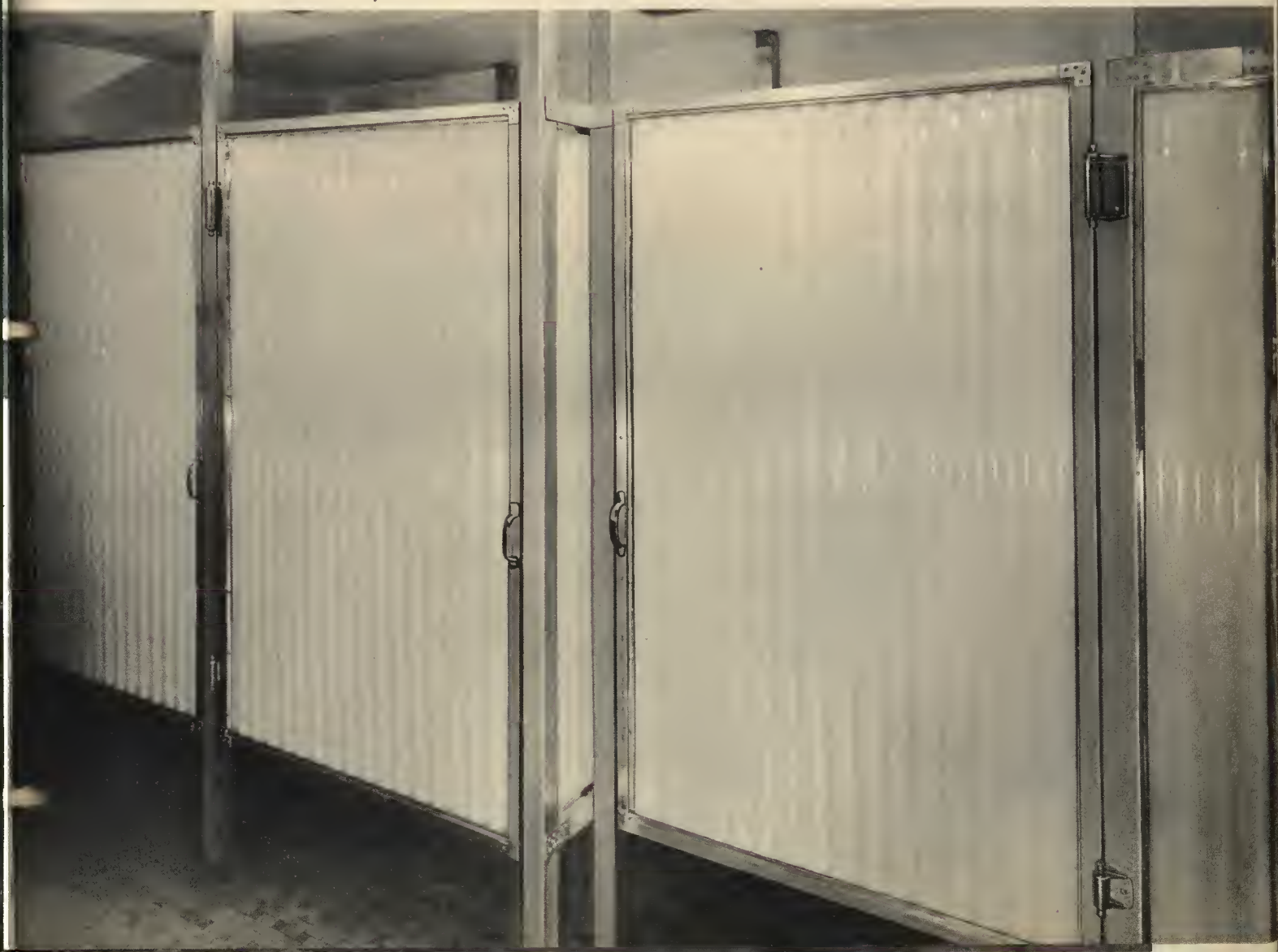
PLEXIGLAS MOLDING POWDERS PLEXIGLAS acrylic molding powders are transformed by the heat and pressure of molding presses into products distinguished for their strength, light weight, permanence and sparkling beauty. Such moldings also have the excellent dimensional stability, optical and electrical properties, and resistance to chemicals that characterize products fabricated from sheet material. In applications calling for a large number of identical parts, PLEXIGLAS molding powders give superior results, with production efficiency. A reliable custom molder should be consulted in the design of molded products. **GRADES** PLEXIGLAS molding powders are available in various grades, for injection and compression molding, and extrusion. An outstanding example is PLEXIGLAS V, an injection molding powder that imparts high heat stability (ASTM Heat Distortion Temperature—197.6°F.) and exceptional clarity to molded parts. **COLORS** Naturally colorless and crystal-clear, PLEXIGLAS molding powders are also available in Amber, Aquamarine, Black Opaque, Blue, Green, Purple, Red, Tortoise Shell, Violet, White Opaque and Yellow.

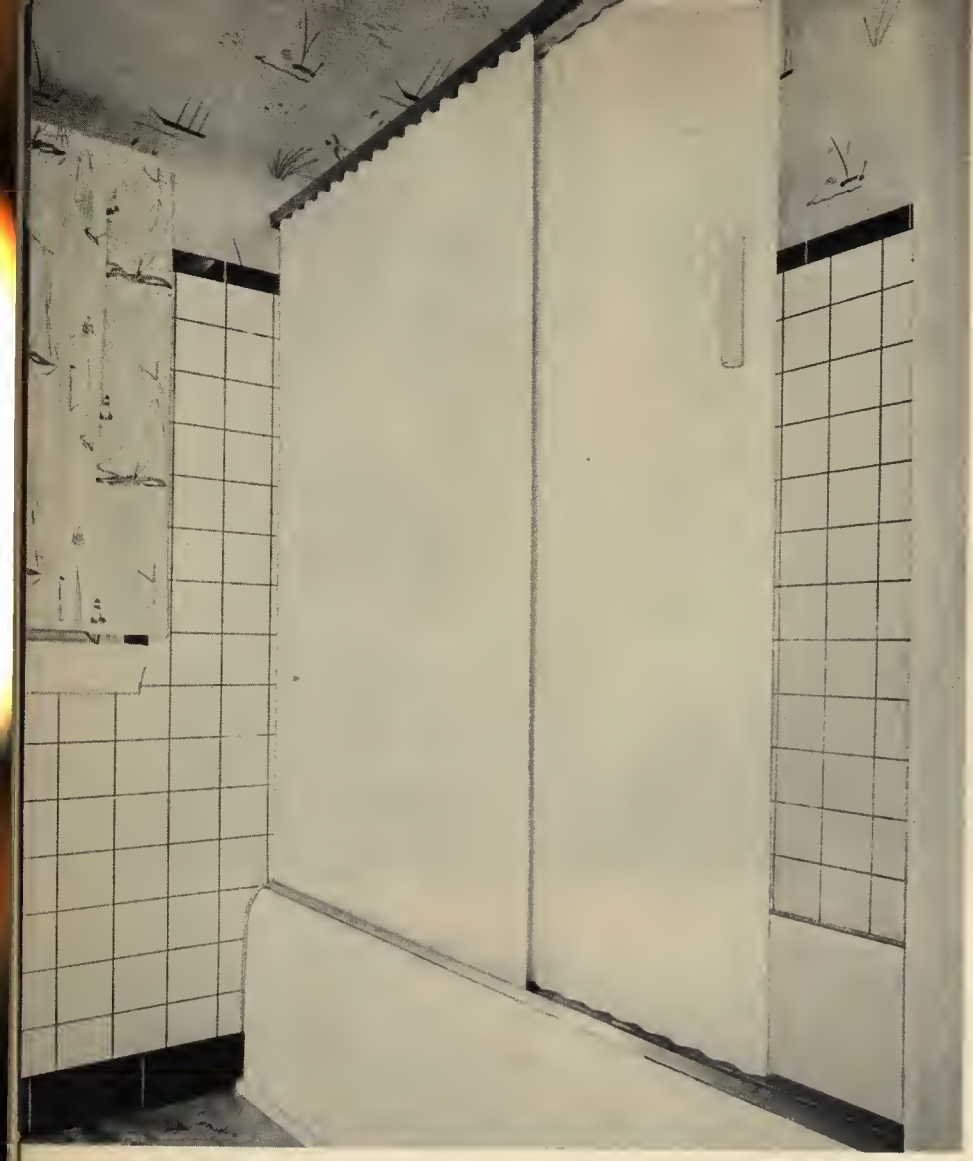
PLEXENE M, a modified polystyrene injection molding powder, offers advantages over unmodified styrene powders in heat resistance, weatherability and resistance to inks, gasoline and other solvents. It imparts excellent impact strength and dimensional stability. PLEXENE M moldings are light in weight, readily molded, and economical. Light amber in its natural state, it is also available in many colors. *PLEXENE is a trademark Reg. U. S. Pat. Off.*

Coffer panels made of white translucent (No. 122-75) PLEXIGLAS combine extreme light weight and durability with efficient diffusion of fluorescent or incandescent light. This conference room is lighted by mounting 25″x27″x.080″ panels, weighing only 2 pounds apiece, below fluorescent tubes. The panels are formed to a pleasing design for structural strength that permits the use of thin, low-cost material. They have a ¾″ flange and rest in a routed frame, for easy, safe handling and removal for access to the lighting source. In the same room, large sheets of corrugated white translucent material (48″x60″x.125″, Type C-2, No. 122-125), back-lighted by incandescent bulbs, are used as a luminous wall. From the various opacity-grades and thicknesses of white translucent PLEXIGLAS, it is possible to obtain exactly the desired optical characteristics.

Impact-resistant and crystal-clear, PLEXIGLAS provides safety and transparency in this handsome partition between the air-conditioned and outdoor-terrace sections of the smart Palladian Room in Washington's Shoreham Hotel. The large center panels are 5′x7′x$\frac{5}{16}$″, weigh only 68 pounds apiece, and are mounted in extruded aluminum frames. Because of its light weight and strength, the partition can be dismantled easily and the large panels installed in the arched front windows, to enclose the room during fall, winter and spring months.

Sheets of gleaming white translucent corrugated PLEXIGLAS (Type C-2) serve as doors and walls of toilet booths at the Hotel Senator, Atlantic City, N. J. The translucent material insures privacy without shutting out light, and being chip-proof and splinter-proof it reduces replacement costs to a minimum.

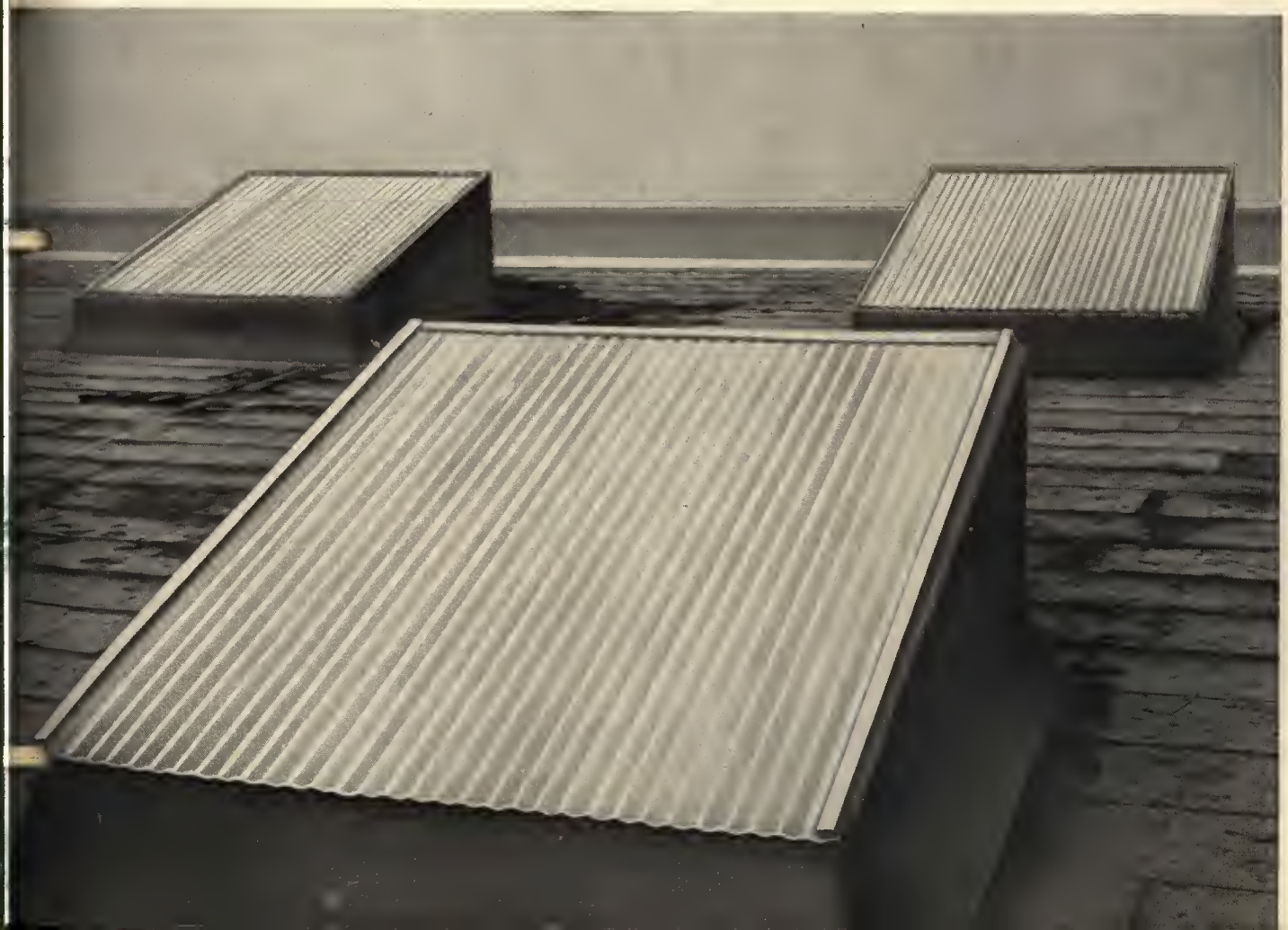




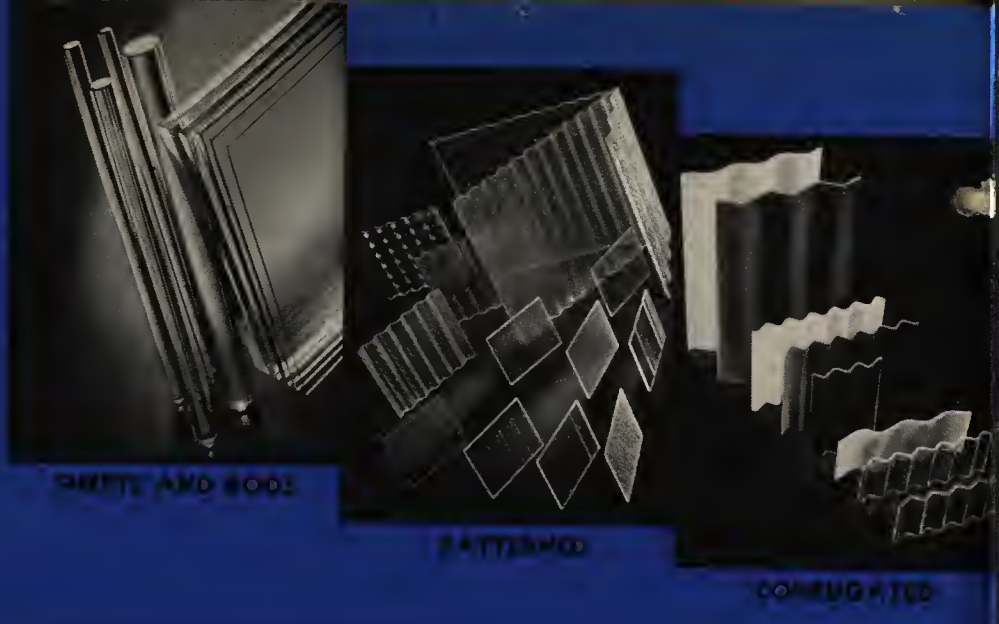
Standard tub-showers can be remodeled easily and inexpensively into sparkling, modern shower stalls by the installation of PLEXIGLAS. Here, two large sheets of corrugated (Type C-2) white translucent material form a practical, safe enclosure. The sliding panel is suspended from an aluminum angle-strip track that fits into slots cut half-way through the corrugations and is attached to a stainless steel channel. A similar channel cemented to the edge of the tub acts as a base for the stationary sheet and a guide for the sliding panel. Bottom channel has drain holes along the inside angle. The shatter-resistant, stain-proof PLEXIGLAS sheets are 36″ x 53″ x 1/8″ and weigh only 10 pounds apiece, yet have such longitudinal rigidity and overall strength that the installation is as sturdy as it is pleasing in appearance.

Sheets of patterned-surface PLEXIGLAS, 48″ long, make attractive and practical partitions such as these, designed and constructed by the Austin Company for installation in the engineering department of their Cleveland District office, Cleveland, Ohio. Dimensional stability, impact resistance and excellent light transmission are combined with pleasing appearance in patterned PLEXIGLAS partitions for stores, homes and offices.

PLEXIGLAS skylights are easily installed, provide maximum transmission of light. Large sheets can be used without supporting ribs, because of their light weight and strength. Weatherproof and shatter-resistant, they insure long, replacement-free service. The skylight panel above is formed from clear material, to a design that gives added strength and attractive appearance. The skylights below, installed at Thomas M. Marshall Co., Gloucester, N. J., are glazed with equally effective corrugated sheets.



TO HELP YOU MAKE EFFECTIVE USE OF PLEXIGLAS



LITERATURE AND SAMPLES

The attached card may be used to obtain further information about PLEXIGLAS. The Rohm & Haas Company is prepared to extend every cooperation to architects and builders interested in the almost unlimited range of applications for acrylic plastics.

CUSTOMER SERVICE LABORATORY

The extensive practical experience of Rohm & Haas in the plastics field is centralized in its design. fabricating and molding laboratory. The help of this laboratory is offered to architects and their clients on any type of already-developed or proposed application.

FIELD REPRESENTATIVES

A staff of technically trained field representatives is maintained, to assist users in the selection of the best Rohm & Haas plastics product for specific applications. The services of these representatives are available from any of the sales offices listed below.

PHILADELPHIA 5, PA.
Washington Square
Telephone: LOmbard 3-9860

SAN FRANCISCO 5, CAL.
Room 731
25 Beale Street
Telephone: Douglas 2-6664

SOUTH GATE, LOS ANGELES, CAL.
4521 Firestone Boulevard
Telephone: Lucas 8141

DETROIT 2, MICHIGAN
819 Fisher Building
Telephone: Trinity 3-3200

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1507 Mercantile Nat'l Bank Building
Telephone: Riverside 6593

NEW YORK 18, NEW YORK
11 West 42nd Street
Telephone: Longacre 3-2390

CHICAGO 4, ILLINOIS
25 East Jackson Boulevard
Telephone: Wabash 3076

COLUMBUS 15, OHIO
Room 708 Hartman Theatre Bldg.,
79 E. State Street
Telephone: Main 5990

KANSAS CITY 10, MISSOURI
Room 526
215 Pershing Road
Telephone: Victor 6850

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WASHINGTON SQUARE, PHILADELPHIA 5, PA.

roofing and siding

section 8

built-up roofing a

shingles, tiles, slate b

sheet roofing and siding c

flashings d

OLD AMERICAN ROOFS

BUILT UP ROOFS
ROLL ROOFING
SHINGLES

WEATHERIZED

TRADE MARK

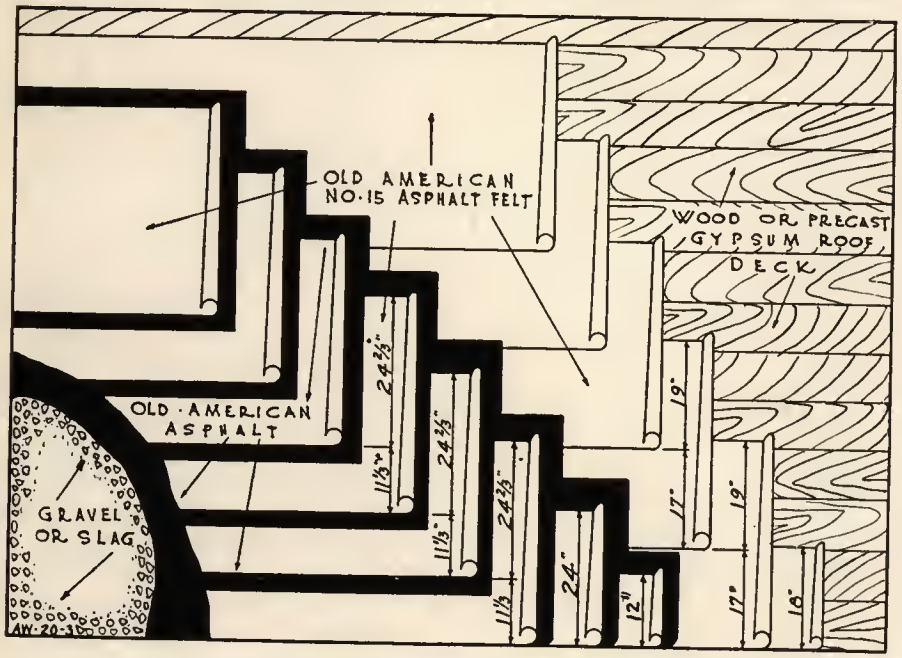
THE OLD AMERICAN

AMERICAN ASPHALT ROOF CORPORATION

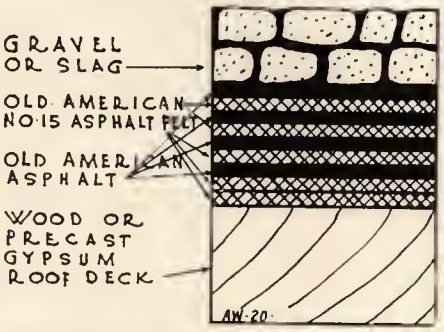
KANSAS CITY 3, MO. ● EAST ST. LOUIS, ILL. ● SALT LAKE CITY 10, UTAH ● FORT WORTH 7, TEX.

Old American Specification No. A. W. 20

• Asphalt Felt and Asphalt, Gravel, Chat or Slag Finish •



WOOD DECKS
For inclines of ⅛" to 3" per foot
20 YEAR BOND



Approximate quantities of materials required for the construction of each 100 square feet of completed roof surface:

Old American No. 15 Asphalt Felt, Five (5) Thicknesses	75 lbs.
Old American Asphalt	135 lbs.
Roofing Nails and Flat Tin Discs	2 lbs.
Roofing Gravel	400 lbs.
	612 lbs.

The felt shall be laid without wrinkles or buckles. Asphalt shall be heated from 400° F. to 425° F., not in excess thereof.
In estimating, we suggest adding 5% extra to provide for end laps and turn up on walls where needed.

ROOF DECK—The roof deck shall be of seasoned lumber, smooth, dry and free from loose materials, and all large cracks or knot holes shall be filled or covered. The roof deck shall be properly graded to outlets. All drainage connections shall be set to permit free flow of water. Cant strips shall be provided in all angles formed by the roof deck and vertical surfaces. The foregoing requirements are obligations of the Owner or General Contractor.

APPLICATION OF MATERIALS—First: Lay over the entire surface two (2) thicknesses of Old American No. 15 Asphalt Felt, lapping each sheet nineteen (19) inches over the preceding one and nail with seven-eighths (⅞) inch roofing nails driven through flat tin discs at intervals of six (6) inches along the laps and stagger nailed at eighteen (18) inch intervals, on parallel lines spaced ten (10) inches apart. All felts thus laid shall be cut off at the top of the cant strip.

> **Alternate:** *One thickness of Old American No. 30 Asphalt Felt lapped two (2) inches, may be used in lieu of two (2) thicknesses of No. 15 Asphalt Felt mentioned above, nailed in a like manner.*

Second: Over the entire surface imbed in Old American Asphalt three (3) thicknesses of Old American No. 15 Asphalt Felt, lapping each sheet twenty-four and two-thirds (24⅔) inches over the preceding one. Mop each thickness of felt with Old American Asphalt the full width of the sheet, rolling each sheet immediately behind the mop to insure a complete and uniform coating of hot asphalt, so that in no place shall felt touch felt. All ends of felts to be lapped six (6) inches. All felts thus laid shall be cut off at the top of the cant strip.

Third: After all felts have been laid and all flashings and connections installed, pour from a dipper a uniform coating of Old American Asphalt, into which, while hot, imbed not less than 400 lbs. of gravel or 300 lbs. of slag or chat per each 100 square feet of surface. The gravel, slag or chat shall be dry and free from dirt, and shall be from one-fourth (¼) inch to five-eighths (⅝) inch in size.

For Specifications and Details of BASE AND COUNTERFLASHINGS See Page 39.

INSULATION—If roof is to be applied over insulating material, the insulation must be firm, capable of withstanding traffic without crushing, and of a type that will retain nails.

No more insulation shall be laid at one time than can be promptly protected by roofing in event of sudden weather changes.

Where insulating materials meet parapet walls, cant strips, curbs, or other openings, the edge of such insulating material shall be protected by mopping a felt (or saturated fabric) strip to the roof deck, under the insulating material, folding this strip back and mopping it to the top of the insulating material, for a distance of not less than four (4) inches from the edge. When more than one layer or thickness of insulating material is used, each layer shall break joints with the preceding layer.

The roof shall not be mopped solid to the insulation but, on the contrary, strip mopped in accordance with application instructions for use over concrete.

The built-up roof to be applied over insulation shall be constructed in accordance with Old American Specification No. A. C. 20.

LEADER HEADS, VENTS, ETC.—Leader Heads, Vents and other openings shall be furnished with metal flanges of sufficient width (5" to 6" recommended) to permit proper connection with the roofing. All scuppers, gutters, gravel guards, edging or finishing strips, leader heads and vent flanges, shall be set on top of all felts, same to be securely nailed and flashed with not less than two (2) thicknesses of felt, mopped in.

NOTE: *The American Asphalt Roof Corporation will give its Twenty (20) Year Surety Guaranty Bond covering the roof, providing same is applied by a roofing contractor approved by The American Asphalt Roof Corporation, in strict accordance with the above specifications and subject to their inspection and approval.*

This guaranty is not given on jobs of less than 50 squares, *nor in such sections of the United States as are not regularly covered by the Manufacturers Inspection Service, except by special agreement.*

Old American Specification No. A. W. 15

• Asphalt Felt and Asphalt, Gravel, Chat or Slag Finish •

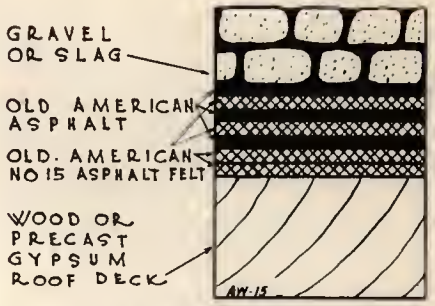
WOOD DECKS . . . . . 15 YEAR BOND

APPLICATION OF MATERIALS—First—Lay over the entire surface two (2) thicknesses of Old American No. 15 Asphalt Felt, lapping each sheet nineteen (19) inches over the preceding one and nail with seven-eighths (⅞) inch roofing nails driven through flat tin discs at intervals of six (6) inches along the laps and stagger nailed at eighteen (18) inch intervals, on parallel lines spaced ten (10) inches apart. All felts thus laid shall be cut off at the top of the cant strip.

Second—Over the entire surface imbed in Old American Asphalt, two (2) thicknesses of Old American No. 15 Asphalt Felt, lapping each sheet nineteen (19) inches over the preceding one, mop each thickness of felt with Old American Asphalt the full width of the sheet, rolling each sheet immediately behind the mop to insure a complete and uniform coating of hot asphalt, so that in no place shall felt touch felt. All ends of felts to be lapped six (6) inches. All felts thus laid shall be cut off at the top of the cant strip.

Third—After all felts have been laid and all flashings and connections installed, pour from a dipper a uniform coating of Old American Asphalt, into which, while hot, imbed not less than 400 lbs. of gravel or 300 lbs. of slag or chat per each 100 square feet of surface. The gravel, slag or chat shall be dry and free from dirt, and shall be from one-fourth (¼) inch to five-eights (⅝) inch in size.

For inclines of ⅛" to 3" per foot



Approximate quantities of materials required for the construction of each 100 square feet of completed roof surface:

Old American No. 15 Asphalt Felt, Four (4) Thicknesses	60 lbs.
Old American Asphalt	110 lbs.
Roofing Nails and Flat Tin Discs	2 lbs.
Roofing Gravel	400 lbs.
	572 lbs.

Old American Specification No. A. W. 10

• Asphalt Felt and Asphalt, Smooth Surface •

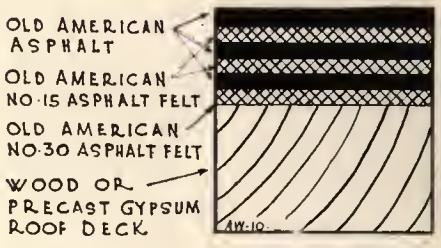
WOOD DECKS . . . . . 10 YEAR BOND

APPLICATION OF MATERIALS—First—Lay over the entire surface one (1) thickness of Old American No. 30 Asphalt Felt, lapping each sheet two (2) inches, sealing the laps with asphalt, and nail with seven-eighths (⅞) inch roofing nails driven through flat tin discs at intervals of six (6) inches along the laps, and stagger nailed at eighteen (18) inch intervals, on parallel lines spaced ten (10) inches apart.

Second—Over the entire surface imbed in Old American Asphalt, two (2) thicknesses of Old American No. 15 Asphalt Felt, lapping each sheet nineteen (19) inches over the preceding one, mop each thickness of felt with Old American Asphalt the full width of the sheet, rolling each sheet immediately behind the mop to insure complete and uniform coating of hot asphalt, so that in no place shall felt touch felt. All ends of felts to be lapped six (6) inches. Such nailing as is necessary shall be along the back or upper edge of each sheet so that all nails will be covered by one (1) sheet of felt. All felt thus laid, shall be cut off at the top of the cant strip.

Third—After all materials have been laid, and all flashings and connections installed, mop over the entire surface a uniform coating of Old American Asphalt using not less than twenty-five (25) pounds to each 100 square feet of surface.

For inclines of ¼ inch to 6 inches per foot



Approximate quantities of materials required for the construction of each 100 square feet of completed roof surface:

Old American No. 30 Asphalt Felt, One (1) Thickness	30 lbs.
Old American No. 15 Asphalt Felt, Two (2) Thicknesses	30 lbs.
Roofing Nails and Flat Tin Discs	2 lbs.
Old American Asphalt	75 lbs.
	137 lbs.

Old American Cold Process Specification

• Cap Sheet and Cold Bond Cement, Smooth Surface •

WOOD DECKS — No. CP-1

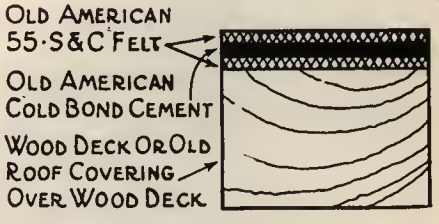
COLD PROCESS ROOFS, THROUGH ESTABLISHED CUSTOM, ARE NOT BONDED

APPLICATION OF MATERIALS—Lay over the entire surface two (2) thicknesses of Old American 55# S&C Felt, lapping each sheet nineteen (19) inches over the preceding one, mopping the nineteen (19) inch width with Old American Improved Cold Bond Cement, applied at the rate of not less than one and one-half (1½) gallons per 100 square feet of area, so that in no place shall felt touch felt. All ends of felt to be lapped six (6) inches. All felts thus laid shall be cut off at the top of the cant strip.

The felt shall be nailed with seven-eighths (⅞) inch roofing nails driven through flat tin discs at intervals of six (6) inches along the end laps and stagger nailed at eighteen (18) inch intervals, on parallel lines spaced ten (10) inches apart.

No surface mopping is required because the sand side of 55# S&C Felt is factory machine coated and sanded, which provides for several years of wearing surface. We recommend that Old American Roof Renur be used as a re-surfacing material only when needed after several years of wear.

For inclines of ¼" or more per foot



Approximate quantities of materials required for the construction of each 100 square feet of completed roof surface:

Old American No. 55 S&C Felt, 2 thicknesses	110 lbs.
Old American Improved Cold Bond Cement, 1½ gallons minimum	13 lbs.
Roofing Nails and Flat Tin Discs	1 lbs.
	124 lbs.

Old American Specification No. A.W.S.10-39

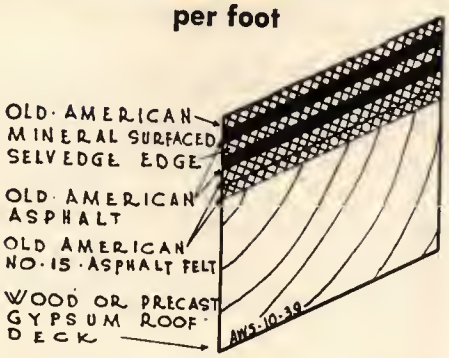
• Asphalt Felt, Asphalt and •
• Mineral Surfaced Selvedge Edge Roofing •

WOOD DECKS . . . . . 10 YEAR BOND

APPLICATION OF MATERIALS—First—Lay over the entire surface two (2) thicknesses of Old American No. 15 Asphalt Felt, lapping each sheet nineteen (19) inches over the preceding one, and nail with seven-eighths (⅞) inch roofing nails driven through flat tin discs at intervals of six (6) inches along the laps and stagger nailed at eighteen (18) inch intervals, on parallel lines spaced ten (10) inches apart. All felts thus laid shall be cut off at the top of the cant strip.

Second—Over the entire surface of felt thus laid, imbed in Old American Asphalt two (2) thicknesses of Old American nineteen (19) inch Mineral Surfaced Selvedge Edge Roofing, lapping each sheet nineteen (19) inches over preceding one, mop with Old American Asphalt, rolling each sheet immediately behind the mop to insure complete and uniform coating of hot asphalt, so that in no place shall felt touch felt. All ends of roofing to be lapped six (6) inches. Each sheet shall be nailed with one (1) inch roofing nails driven through flat tin discs into the upper half of the sheet not less than three (3) inches or more than fifteen (15) inches from the upper edge of each sheet, spaced not more than eighteen (18) inches apart. All roofing thus laid shall be cut off at the top of the cant strip.

For inclines 3 to 9 inches per foot



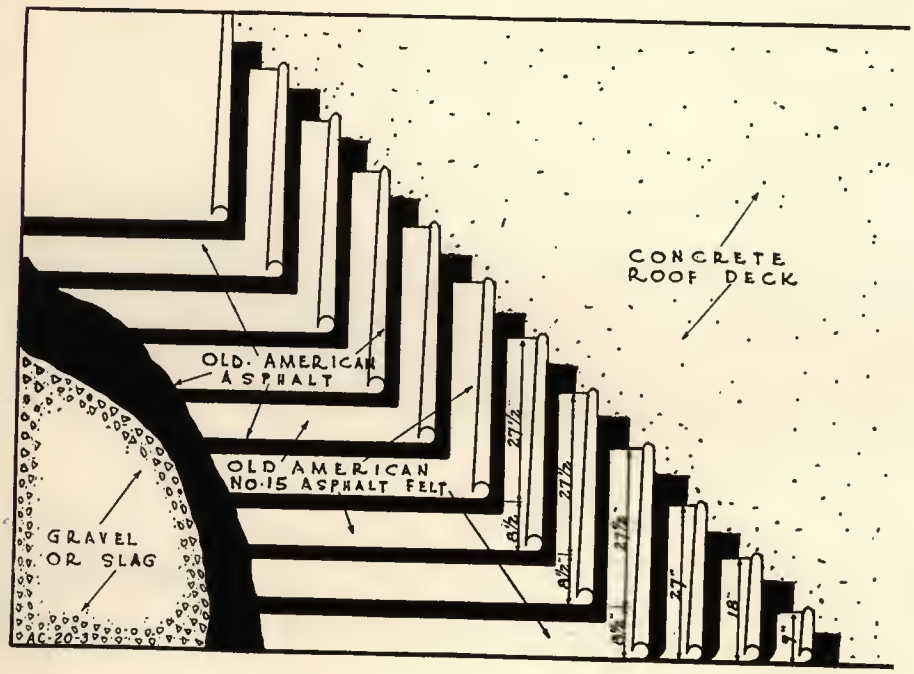
Approximate quantities of materials required for the construction of each 100 square feet of completed roof surface:

Old American No. 15 Asphalt Felt, Two (2) Thicknesses	30 lbs.
Old American 19" Mineral Surfaced Selvedge Edge Roofing	110 lbs.
Roofing Nails and Flat Tin Discs	2 lbs.
Old American Asphalt	50 lbs.
	192 lbs.

Old American Specification No. A. C. 20

• Asphalt Felt and Asphalt, Gravel, Chat or Slag Finish •

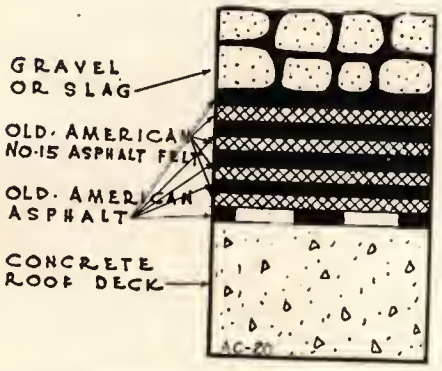
FOR USE OVER POURED OR PRECAST CONCRETE, POURED GYPSUM, BOOK TILE OR APPROVED INSULATION



CONCRETE DECKS

For inclines of ⅛" to 3" per foot

20 YEAR BOND



Approximate quantities of materials required for the construction of each 100 square feet of completed roof surface:

Old American No. 15 Asphalt Felt, Four (4) Thicknesses	60 lbs.
Old American Asphalt	130 lbs.
Roofing Gravel	400 lbs.
	590 lbs.

APPLICATION OF MATERIALS—First: Lay over the entire surface, four (4) thicknesses of Old American No. 15 Asphalt Felt, lapping each sheet twenty-seven and one-half (27½) inches over the preceding one and mop solid to underlying sheet with Old American Asphalt so that in no place shall felt touch felt. The roof shall not be mopped solidly to the deck, but on the contrary, mop only half the portion of the concrete covered by each sheet. Roll each sheet immediately behind the mop to insure complete and uniform coating of hot asphalt. All ends of felt shall be lapped six (6) inches. All felts, thus laid shall be cut off at the top of the cant strip.

Second:—After all felts have been laid and all flashings and connections installed, pour from a dipper a uniform coating of Old American Asphalt.

Into this coating, while hot, imbed not less than 400 lbs. of gravel, or 300 lbs. of slag or chat, per each 100 sq. ft. of surface.

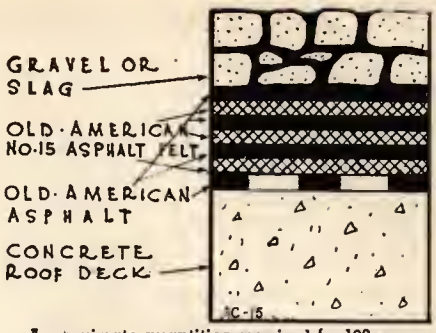
The gravel, chat or slag shall be dry and free from dirt and shall be from one-fourth (¼) inch to five-eighths (⅝) inch in size.

Old American Specification No. A. C. 15

• Asphalt Felt and Asphalt, Gravel, Chat or Slag Finish •

CONCRETE DECKS.....15 YEAR BOND

For inclines of ⅛" to 3" per foot



APPLICATION OF MATERIALS—First—Lay over the entire surface, three (3) thicknesses of Old American No. 15 Asphalt Felt, lapping each sheet twenty-four and two-thirds (24⅔) inches over the preceding one and mop solid to underlying sheet with Old American Asphalt so that in no place shall felt touch felt. The roof shall not be mopped solidly to the deck, but on the contrary, mop only half the portion of the concrete covered by each sheet. Roll each sheet immediately behind the mop to insure complete and uniform coating of hot asphalt. All ends of felts shall be lapped six (6) inches.

Continue application as for 20 year roof, Specification AC 20

Approximate quantities required for 100 square feet:

Old American No. 15 Asphalt Felt, Three (3) Thicknesses	45 lbs.
Old American Asphalt	120 lbs.
Roofing Gravel	400 lbs.
	565 lbs.

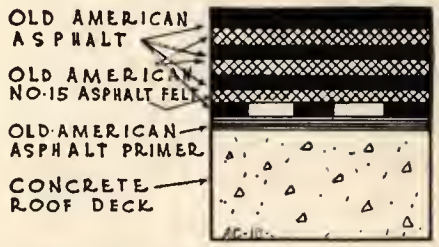
Old American Specification No. A. C. 10

• Asphalt Felt and Asphalt, Smooth Surface •

CONCRETE DECKS.....10 YEAR BOND

For inclines of ¼ inch to 3 inches per foot

(Do not use on true level decks)



APPLICATION OF MATERIALS—First—Coat the entire surface with Old American Asphalt Primer, using approximately one (1) gallon to each 100 square feet of surface. Allow sufficient time for primer to dry before proceeding further with roof application.

Second—Lay over the entire surface, three (3) thicknesses of Old American No. 15 Asphalt Felt, lapping each sheet twenty-four and two-thirds (24⅔) inches over the preceding one and mop solid to underlying sheet with Old American Asphalt so that in no place shall felt touch felt. The roof shall not be mopped solidly to the deck, but on the contrary, mop only half the portion of the concrete covered by each sheet. Roll each sheet immediately behind the mop to insure complete and uniform coating of hot asphalt. All ends of felts shall be lapped six (6) inches. All felts thus laid shall be cut off at the top of the cant strip.

Third—After all materials have been laid, and all flashings and connections installed, mop over entire surface a uniform coating of Old American Asphalt, using not less than twenty-five (25) pounds to each 100 square feet of surface.

Approximate quantities of materials required for the construction of each 100 square feet of completed roof surface:

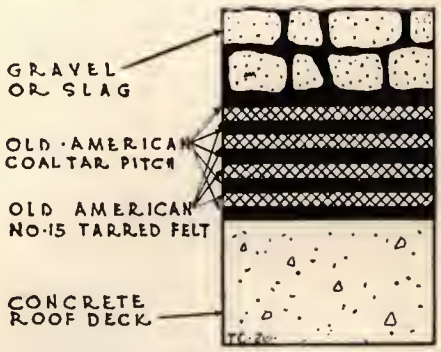
Old American Primer, One (1) Gallon	10 lbs.
Old American No. 15 Asphalt Felt, Three (3) Thicknesses	45 lbs.
Old American Asphalt	90 lbs.
	145 lbs.

Old American Specification No. T. C. 20

• Tarred Felt and Pitch, Gravel, Chat or Slag Finish •

CONCRETE DECKS.....20 YEAR BOND

Inclines up to ½ inch per foot



First—Over the entire surface lay four (4) thicknesses of Old American No. 15 Tarred Felt, lapping each sheet twenty-four and one-half (24½) inches over the preceding one, mopping with Old American Coal Tar Pitch the full width of each sheet, so that in no place shall felt touch felt. All ends of felts to be lapped six (6) inches. All felts thus laid shall be cut off at the top of the cant strip.

When nailing is necessary nails should be driven into the upper half of each sheet of felt, not less than three (3) inches or more than fifteen (15) inches from the upper edge of each sheet. All nails shall be covered by not less than three (3) thicknesses of felt.

Second—After all felts have been laid and all flashings and connections installed pour from a dipper a uniform coating of Old American Coal Tar Pitch, into which, while hot, imbed not less than 400 lbs. of gravel, or 300 lbs. of chat or slag, per each 100 square feet of surface.

The gravel, chat or slag shall be dry and free from dirt and shall be from one-fourth (¼) to five-eighths (⅝) inch in size.

The roof shall not be mopped solid to the insulation but, on the contrary, strip mopped in accordance with application instructions for use over concrete.

Approximate quantities of materials required for the construction of each 100 square feet of completed roof surface:

Old American No. 15 Tarred Felt, Four (4) Thicknesses	60 lbs.
Old American Coal Tar Pitch	170 lbs.
Roofing Gravel	400 lbs.
	630 lbs.

Old American Specification No. T. C. 15-½

• Tarred Felt and Pitch, Gravel, Chat or Slag Finish •

CONCRETE DECKS.....15 YEAR BOND

For inclines up to ½ inch per foot

APPLICATION OF MATERIALS—Directions for the application of this roof are the same as for the 20 Year Roof above except that in the first operation "lay three (3) thicknesses of Old American No. 15 Tarred Felt, lapping each sheet twenty-two (22) inches over the preceding one."

Approximate quantities of materials required for the construction of each 100 square feet of completed roof surface:

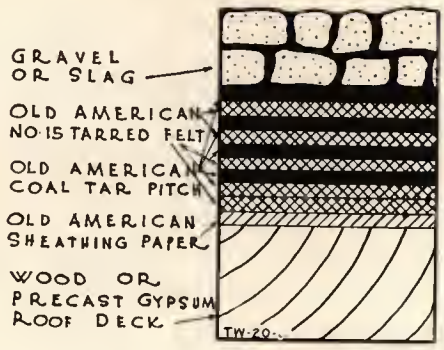
Old American No. 15 Tarred Felt, Three (3) Thicknesses	45 lbs.
Old American Coal Tar Pitch	145 lbs.
Roofing Gravel	400 lbs.
	590 lbs.

Old American Specification No. T. W. 20

• Tarred Felt and Pitch, Gravel, Chat or Slag Finish •

WOOD DECKS . . . . . 20 YEAR BOND

For inclines up to ½ inch per foot



APPLICATION OF MATERIALS—First—Lay over the entire surface one (1) thickness of sheathing paper, weighing not less than five (5) pounds per one hundred (100) square feet, lapping each sheet one (1) inch.

Second—Lay over the entire surface two (2) thicknesses of Old American No. 15 Tarred Felt lapping each sheet seventeen (17) inches over the preceding one and nail with seven-eighths (⅞) inch roofing nails driven through flat tin discs at intervals of six (6) inches along the laps and stagger nailed at eighteen (18) inch intervals, on parallel lines spaced ten (10) inches apart. All felts thus laid shall be cut off at the top of the cant strip.

Third—Over the entire surface lay three (3) thicknesses of Old American No. 15 Tarred Felt, lapping each sheet twenty-two (22) inches over the preceding one, mopping with Old American Coal Tar Pitch, the full width of each sheet, so that in no place shall felt touch felt. All ends of felts to be lapped six (6) inches. All felts thus laid shall be cut off at the top of the cant strip.

Fourth—After all felts have been laid and all flashings and connections installed, pour from a dipper a uniform coating of Old American Coal Tar Pitch, into which, while hot, imbed not less than 400 lbs. of gravel or 300 lbs. of chat or slag per each 100 square feet of surface. The gravel, chat or slag shall be dry and free from dirt, and shall be from one-fourth (¼) inch to five-eighths (⅝) inch in size.

Approximate quantities of materials required for the construction of each 100 square feet of completed roof surface:

Old American Sheathing Paper, One (1) Thickness	5 lbs.
Old American No. 15 Tarred Felt, Five (5) Thicknesses	75 lbs.
Roofing Nails and Flat Tin Discs	2 lbs.
Old American Coal Tar Pitch	145 lbs.
Roofing Gravel	400 lbs.
	627 lbs.

Old American Specification No. T. W. 15

• Tarred Felt and Pitch, Gravel or Slag Finish •

WOOD DECKS . . . . . 15 YEAR BOND

For inclines up to ½ inch per foot

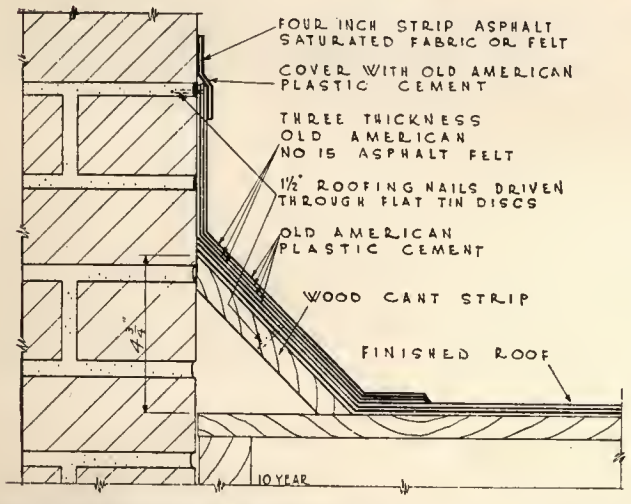
APPLICATION OF MATERALS—Directions for the application of this roof are the same as for the 20 Year Roof above except that, in the third operation, "lay two (2) thicknesses of Old American No. 15 Tarred Felt, lapping each sheet seventeen (17) inches over the preceding one."

Approximate quantities of materials required for the construction of each 100 square feet of completed roof surface:

Old American Sheathing Paper, One (1) Thickness	5 lbs.
Old American No. 15 Tarred Felt, Four (4) Thicknesses	60 lbs.
Roofing Nails and Flat Tin Discs	2 lbs.
Old American Coal Tar Pitch	120 lbs.
Roofing Gravel	400 lbs.
	587 lbs.

FLASHINGS . . . . . 10 YEAR BOND

Old American Specification No. F. 10



APPLICATION OF MATERIAL—First—Over the roofing material covering the cant and extending up the wall and into the full depth of the flashing groove, spread a uniform coating of Old American Plastic Cement, into which while tacky, imbed and press in one (1) thickness of Old American No. 15 Asphalt Felt Flashing Strip, cut to proper width, extending from the top of the raggle groove to not less than two (2) inches on the roof.

Second—On top of this Flashing Strip spread another coating of Old American Plastic Cement into which imbed and press in another Flashing Strip of Old American No. 15 Asphalt Felt, repeating this operation until three (3) thicknesses of Old American No. 15 Asphalt Felt Flashing Strips have been installed.

Third—Over the top of the third or final Flashing Strip installed, spread a uniform coating of Old American Plastic Cement.

NOTE—*Felt Flashing Strips shall not exceed ten (10) feet in length and shall be set in separately (not folded) in a manner so that joints will be broken with underlying Flashing Strips. All ends shall be lapped not less than two (2) inches.*

The second (2nd) course of Flashing Strip shall be nailed in the middle of the cant and halfway between the top of the cant and the raggle, every ten (10) inches with one and one-half (1½) inch roofing nails driven through flat tin discs.

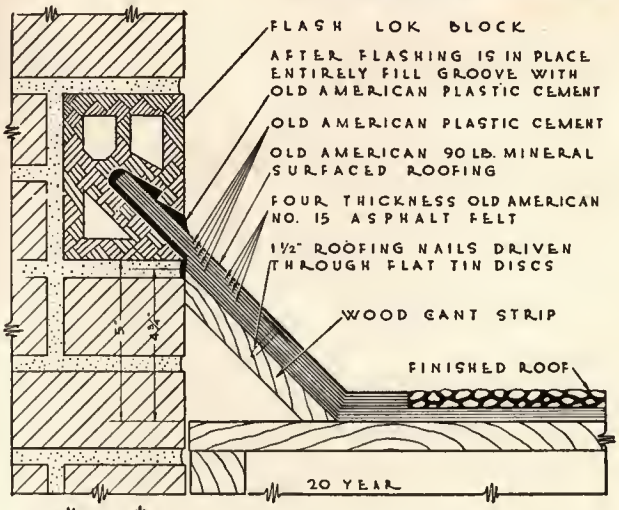
When wall construction is all brick, the Flashing Strips shall also be nailed at the top with one and one-half (1½) inch roofing nails driven through flat tin discs and the top edge of flashing strips covered with a four (4) inch strip of Asphalt Saturated Fabric or felt, set in and covered with Plastic Cement.

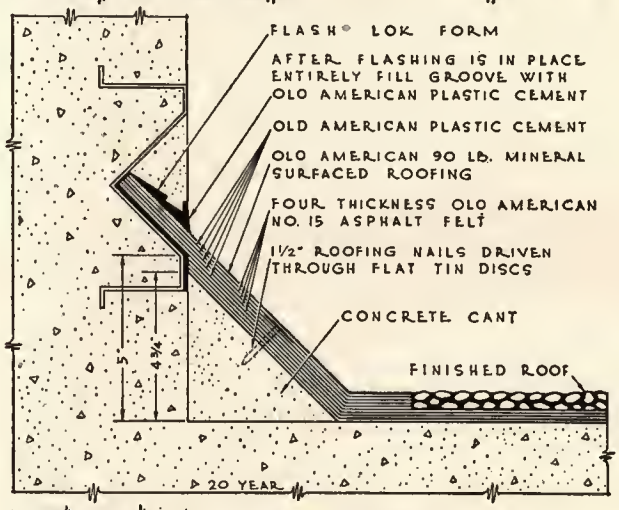
ARCHITECTS' NOTE 1—*The use of metal counter flashings with this type of installation is optional, but if desired shall be covered in specifications.*

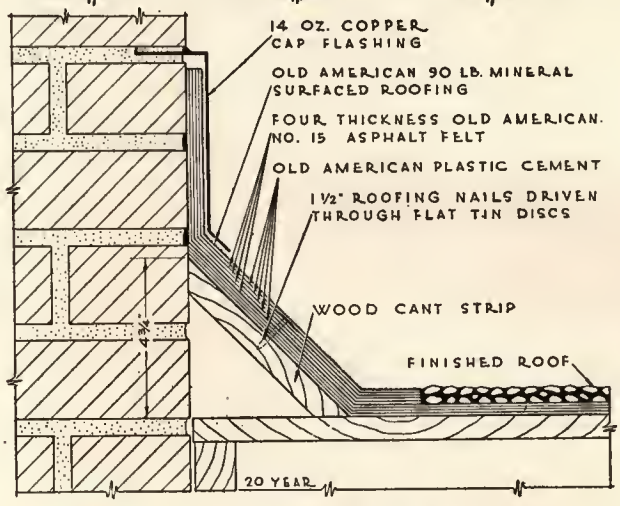
NOTE 2—*No projections such as vent pipes, braces, conductor lines, etc., shall be placed not less than ten (10) inches from the bottom of the cant.*

FLASHINGS . . . . . 20 YEAR BOND

Old American Specification No. F. 20







APPLICATION OF MATERIAL—First—Over the roofing material covering the cant and extending up the wall and into the full depth of the flashing groove, spread a uniform coating of Old American Plastic Cement, into which while tacky, imbed and press in one (1) thickness of Old American No. 15 Asphalt Felt Flashing Strip, cut to proper width, extending from the top of the raggle groove to not less than two (2) inches on the roof.

Second—On top of this Flashing Strip spread another coating of Old American Plastic Cement into which imbed and press in another Flashing Strip of Old American No 15 Asphalt Felt, repeating this operation until four (4) thicknesses of Old American No. 15 Asphalt Felt Flashing Strips have been installed.

Third—Over the entire surface of Flashing Strips thus laid spread a uniform coating of Old American Plastic Cement (with a liberal amount of Plastic Cement along the opening of the flashing groove), into which imbed and press in one (1) thickness of Old American 90-lb. Mineral Surfaced Roofing cut into proper widths, to extend from the top of the flashing groove to not less than two (2) inches on the roof. The strips of Mineral Surfaced Roofing shall be cut across the width of the roll so that each strip shall have a two (2) inch selvedge, which forms the lap; all laps shall be properly cemented with Plastic Cement. The flashing groove shall then be filled or pointed up with Plastic Cement slightly thickened with Portland Cement.

Fourth—Metal Cap Flashing of 14-oz. cold rolled copper shall be installed when walls are of *all brick* construction and shall extend into the raggle not less than two (2) inches and shall have an exposed apron, not less than four (4) inches, extending down over the membrane flashing. After metal cap flashing has been installed and securely anchored in place, fill or point up the raggle groove with Plastic Cement or cement mortar.

NOTE—When Flash-Lok Blocks or Flashing Form (concrete walls) are used in wall construction metal cap flashing is not required.

Felt Flashing Strips shall not exceed ten (10) feet in length and shall be set separately (not folded) in a manner so that joints will be broken with underlying Flashing Strip. All ends shall be lapped not less than two (2) inches.

The fourth (4th) course of Flashing Strips shall be nailed in the middle of the cant and half way between the top of the cant and the raggle every ten (10) inches with one and one-half (1½) inch roofing nails driven through flat tin discs.

When wall construction is all brick Flashing Strips shall also be nailed at the top edge, before installing Metal Cap Flashing.

ARCHITECTS' NOTE 1—*No projection such as vent pipes, braces, conductor lines, etc., shall be constructed through the flashing cant. Such projection shall be placed not less than ten (10) inches from the bottom of the cant.*

FLASHINGS . . . . . 15 YEAR BOND

Old American Specification No. F. 15

The 15 year specification No. F-15 is the same as above except that only 3 thicknesses of felt are used in SECOND operation.

Specifications on this and previous pages are abbreviated from an Architects and Engineers Reference Manual containing a complete set of specifications for all types of Old American Built-Up roofs. Write nearest office for your copy.

AMERICAN ASPHALT ROOF CORPORATION

TRADE MARK THE OLD AMERICAN

TRADE MARK THE OLD AMERICAN

Printed in U.S.A.

ARCHITECTS AND ENGINEERS SPECIFICATIONS for the more popular types of business and industrial roofs are printed on the preceding pages. Old American specification A.W. 20, shown on the second page, is typical of the full set of specifications found in the Architects' and Engineers' Reference Manual of Old American Built-Up roofs. Those on the following pages are in abbreviated form only but contain full working instructions for each roof listed.

*In the index below, the asterisk indicates those specifications appearing in this edition of Sweets' Catalog. The index is from the Old American Reference Manual and lists all regular roof specifications. The Manual also contains additional specifications on various waterproofing problems and special situations.

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OVER WOOD OR PRECAST GYPSUM ROOF DECKS

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20	9	Asphalt	Mineral Surfaced Roofing	A.W.S. 20-39
20	2	Coal Tar Pitch	Gravel	*T.W. 20
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(Poured Concrete or Gypsum, Metal or Approved Insulation)

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20	9	Asphalt	Mineral Surfaced Roofing	A.C.S. 20-39
20	2	Coal Tar Pitch	Gravel	*T.C. 20
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10/15	6	Asphalt	Gravel	A.C. 15-26
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COLD PROCESS ROOFS

Slope Inches per Ft.	Cementing Material	Material Thicknesses	Finished Surfaces	Spec. No.
¼" to 8"	Improved Cold Bond Cement	2	Factory Machine Coated	*CP-1
¼" to 8"	Improved Cold Bond Cement	3	Factory Machine Coated	CP-2
¼" to 8"	Improved Cold Bond Cement	3	Mineral Surfaced Roofing	CP-3

Copies of the Old American Architects' and Engineers' Reference Manual containing a complete set of Old American Specifications for Built-Up Roofing may be obtained by writing to nearest sales office.

SALES AND FACTORY OFFICES

Kansas City 3, Missouri	7600 East 15th Street	Hobart Bowen, Sales Mgr.
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OLD AMERICAN ASPHALT ROOFING • SHINGLES • SIDING • PROTECTIVE COATINGS

8a/2

REFERENCE MANUAL

FOR ARCHITECTS AND ENGINEERS

Barrett

SHOREHAVEN GARDEN APARTMENTS
ROOFED BY BARRETT

1949

BUILT-UP ROOFING • FLASHING • ROOF DRAINAGE • WATERPROOFING • DAMP-PROOFING

foreword

This manual contains specifications and detailed drawings treating with Built-up Roofing for flat and steep roof decks, Roof Flashing, Roof Drainage, and Waterproofing and Dampproofing systems. The most practical methods and procedure are presented, arranged to show exactly the construction secured when the specifications are followed. Thus, the architect, builder or building owner is provided with reference material designed from his viewpoint and with his interest in mind.

Architects and construction engineers have found these methods to be entirely reliable and technically up-to-date. Their practical value is evidenced by their use on so many of the country's largest and finest structures.

technical service bureau

For unusual problems not covered in this book, a Technical Service Bureau is available for consultation at any time, without obligation. This service is maintained to provide general and technical information and facts of value in the fields in which Barrett has been identified with leadership for many years. Address the Technical Service Bureau, The Barrett Division, Allied Chemical & Dye Corporation, 40 Rector St., New York 6, N. Y.

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BLACK SHIELD	EVERJET	TARVIA
BS	EVERLASTIC	TARVIA-LITHIC
CARBOSOTA		

Barrett Specification Barrett

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THE BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET • NEW YORK 6 • N. Y.

2800 So. Sacramento Avenue, Chicago 23, Illinois
Birmingham, Alabama

In Canada: The Barrett Co., Ltd., Montreal, Que.

protection for buildings

The cross-sectional drawing on the opposite page will help you to visualize the application of Barrett building products to problems of roofing, waterproofing, damp-resisting treatment, and drainage. From roof to sub-cellar, wherever it is necessary to prevent the inroads of rain, melting snow or standing water on the roof, restrain entry of water under pressure, provide resistance to foundation erosion caused by running water, or simply prevent seepage due to intermittent presence of water in small quantities, Barrett materials can be relied on to do a thorough job of protection.

For flat roofs, the standard in the roofing industry has long been the Barrett "SPECIFICATION" Roof. It carries the Barrett bond, providing the building owner with Barrett's assumption of all repair and maintenance expenses made necessary by ordinary wear and tear by the elements, for periods up to twenty years. For inclined decks, Barrett offers a special bonded Steep Roof of the same type, and utilizing a resilient, non-sliding pitch especially designed for the purpose; also S.I.S. Roofs in colorful, fire-resistant mineral surfacings.

As the drawing shows, Barrett also supplies —and this manual specifies—materials and methods for membrane waterproofing, damp-resistant treatment, and flashing systems. The membrane method uses felt or cotton fabric with continuous moppings of pitch to provide a complete waterproof blanket over the area covered. It is the only truly effective way to provide protection against water under pressure. Barrett materials for repelling dampness include pitch-base paints and plastic coatings, and are effective where there is no hydrostatic pressure. Barrett flashing systems are used at parapet walls, curbs, window sills, spandrel beams, etc. They employ variously pitch and felt, or saturated fabric and plastic cement (according to the type flashing).

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Barrett

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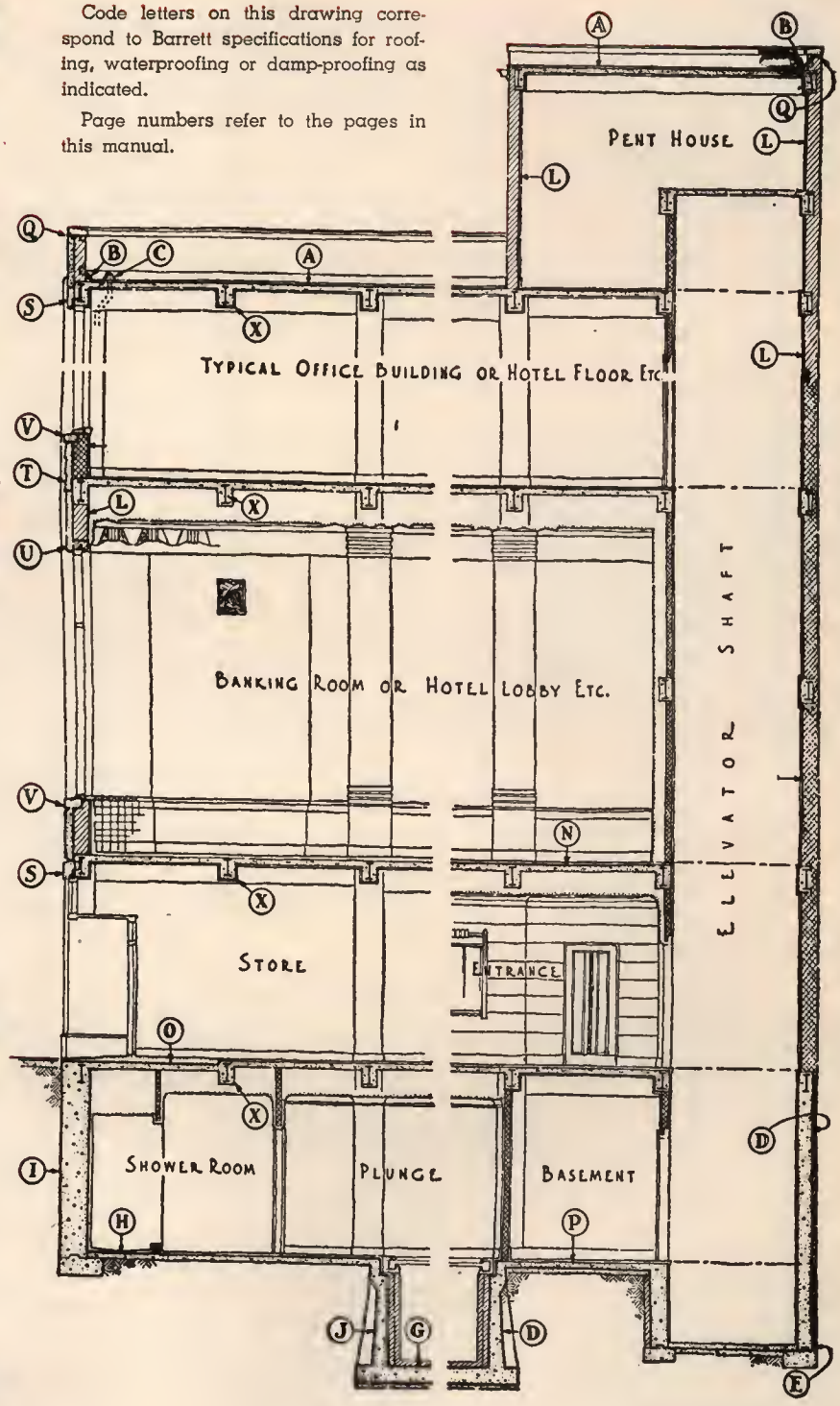
Code letters on this drawing correspond to Barrett specifications for roofing, waterproofing or damp-proofing as indicated.

Page numbers refer to the pages in this manual.



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"SPECIFICATION" pitch —The only pitch which meets the rigid requirements of the famous Barrett "SPECIFICATION" Roof. It is carefully refined from selected coal-tars, produced under exacting laboratory control. Bears Underwriters' Class A label.

PACKAGE: Bbls. or drums. **APPROX. SHPG. WT.: 350-500 lbs.**

steep roof pitch —A highly resilient and stable coal-tar pitch for slag surfaced steep roofs. Will not "bleed" or crack at extremes of heat or cold.

PACKAGE: Drums. **APPROX. SHPG. WT.: 400 lbs.**

"SPECIFICATION" felt —A carefully selected and fabricated rag-stock felt with a special coal-tar saturant. Made especially for use with Barrett "SPECIFICATION" Pitch. Bears Underwriters' Class A label.

ROLL: 432 sq. ft., 36" wide. **APPROX. SHPG. WT.: 60 lbs.**

double thick tarred felt —A heavy duty tarred felt for use as a sheathing or base sheet. An effective weather barrier for use between walls or under slate and tile roofs.

ROLL: 216 sq. ft., 36" wide. **APPROX. SHPG. WT.: 60 lbs.**

asphalt felts —High grade felts used with ANCHOR Asphalt or S. I. S. Cement in steep roof construction and as a general utility sheathing.

ROLL: No. 15—432 sq. ft., 36" wide. **APPROX. SHPG. WT.: 60 lbs.**
No. 30—216 sq. ft., 36" wide. **APPROX. SHPG. WT.: 60 lbs.**

waterproofing fabric —A heavy cotton fabric super-saturated with pitch (or asphalt). For membrane waterproofing.

ROLL: 50 sq. yds., 36" wide. **APPROX. SHPG. WT.: 40 lbs.**

S. I. S. roofing —A "prefabricated" built-up type roof covering. S. I. S. roofing has a 19" selvage, providing complete **double** coverage of roof area. Exposed 17" portion is mineral surfaced, permitting a variety of colors.

ROLL: 108 sq. ft., 36" wide, 19" selvage **APPROX. SHPG. WT.: 60 lbs.**

S. I. S. cement —A heavy waterproof adhesive made especially for use with S. I. S. Roofing. It is applied cold—comes ready for use.

PACKAGES: 55 gal. containers. **APPROX. SHPG. WT.: 495 lbs.**
5 gal. containers. **APPROX. SHPG. WT.: 45 lbs.**
Carton (6 1-gal. containers). **APPROX. SHPG. WT.: 45 lbs.**
COVERAGE: One gallon covers approximately 50-75 sq. ft.

ANCHOR asphalt —A superior asphalt for slag or gravel surfaced built-up steep roofs or for use with S. I. S. roofing.

DRUMS: Approx. 450-500 lbs.

Plastic ELASTIGUM cement —A roofing cement made of asphalt mixed with asbestos fibres—a tough, durable combination. For use as a flashing cement or damp-proofing agent. Also useful for patching roof breaks. Easily applied by trowel—bonds readily with all surfaces.

PACKAGES: 500, 50, 10 lb. containers. **COVERAGE: Approx. 35-40 lbs. will cover 100 sq. ft. $\frac{1}{16}$" thick**

P. B. cement —A pitch-base cement particularly suited to cementing concealed flashings, cutoffs and the like, but usable as a general roof repair cement.

PACKAGES: 500, 50-lb. containers. **COVERAGE: Approx. 35-40 lbs. will cover 100 sq. ft. $\frac{1}{16}$" thick**

since 1854

between the world and the weather

Barrett leadership in the roofing and waterproofing industry dates back almost a century. Since the early days of built-up roof construction, Barrett has pioneered in the field, improving its materials, application methods and facilities stride for stride with the advance of the building industry.

Today, Barrett Bonded Roofs, designed to meet a multiplicity of different conditions, are recognized everywhere as the standard of value for built-up roof construction, a ranking consistently held since the introduction of the famous Barrett "SPECIFICATION" Roof years ago.

Barrett introduced the practice of bonding roofs, definitely freeing building owners from periodical repair or maintenance expense. Barrett initiated the bonding of roof flashing, eliminating divided responsibility. Barrett was the first to establish a network of Approved Roofing Contractors; and Barrett's complete roof inspection service, introduced years ago, is unique in the roofing field.

That this complete service has obtained uniformly satisfactory results is demonstrated by thoroughly authenticated records of proved performance—many of the early installations having already given 30, 40 and 50 years of service without repair or maintenance expense. Repeat business from nationally recognized organizations substantiates these records and presents staunch testimony to the enduring qualities of Barrett roof construction.

We believe that such records of performance, together with the universal acceptance of this type of roof by leading architects, engineers and builders of modern structures, convincingly demonstrate that there are no better materials for built-up roof construction than high quality coal-tar pitch and roofing felt . . . and that no finer materials of this character are obtainable than those bearing the Barrett label.

Exchange Building, Boston, Mass.—Barrett Roofed 1889

famous Barrett installations

Empire State Building, New York
Waldorf-Astoria Hotel, New York
Chrysler Building, New York
R.C.A. Building, Rockefeller Center, New York
N. Y. Hospital, Cornell Medical College, New York
Grand Central Terminal, New York
Architects Building, New York
Archives Building, Washington, D. C.
Dept. of Commerce Building, Washington, D. C.
Supreme Court Building, Washington, D. C.
Jefferson Memorial, Washington, D. C.
Lincoln Memorial, Washington, D. C.
Post Office Building, Washington, D. C.
Field Building, Chicago
Post Office Building, Chicago
Drake Hotel, Chicago
National Board of Fire Underwriters Building, Chicago
Municipal Auditorium, St. Louis, Mo.
Post Office Building, Boston, Mass.
Christian Science Monitor Building, Boston, Mass.
Jefferson County Court House, Birmingham, Ala.
Post Office Building, Minneapolis, Minn.
Philadelphia Savings Fund Society Building, Philadelphia
Pennsylvania R. R. Station (30th St.), Philadelphia
State Capitol Building, Charleston, W. Va.
State Capitol Building, Baton Rouge, La.
Reynolds Building, Winston-Salem, N. C.
DuPont Building, Miami, Fla.
State Capitol Building, Lincoln, Neb.
Atomic Bomb Plant, Oak Ridge, Tenn.
Royal Bank Building, Montreal, Canada
Canadian Rail & Harbor Terminals, Toronto, Canada

CONTINENTAL CASUALTY COMPANY
Barrett Specification Roof
20-Year Guaranty Bond
THE BARRETT DIVISION

Barrett Specification Roofs

Barrett stipulates known quantities, known qualities and known application technique to produce a known result . . . a roof that will be free from upkeep and maintenance expense for at least the period covered by the bond.

Both Barrett "SPECIFICATION" Pitch and Barrett "SPECIFICATION" Felt are manufactured to be—and conceded to be—the best it is possible to produce. Barrett "SPECIFICATION" Pitch is preserved by water. Its life-prolonging oils are protected by the same dampness and moisture that weaken ordinary materials. It is self-healing; is virtually immune to climatic variations; and possesses creosote properties that outlaw fermention or the development of fungi. Roofing gravel, slag, slate or tile provides a fire-safe, practically indestructible wearing surface which protects the membrane, reflects heat and permits the use of a maximum of waterproofing materials.

Barrett "SPECIFICATION" Roofs carry Underwriters' Class A rating (the base rate for insurance). They are applied only by Barrett Approved Roofers, selected for experience, ability and integrity. Architects, engineers and builders rely on them completely.

The Barrett Bond

Barrett "SPECIFICATION," BLACK DIAMOND, and BARRETT Special Roofs, as mentioned in this manual, are bonded by the Continental Casualty company against repair and expense necessitated by ordinary wear and tear by the elements, for periods up to 20 years. Type "AA" is bonded for 20 years, type "A" for 15 years, according to specifications in this manual. Barrett also bonds its flashing systems for like periods when the flashing is installed in conjunction with the application of a Barrett Bonded Roof. This complete guarantee of satisfactory service is furnished under one contract, eliminating divided responsibility on this important work.

The Barrett Inspector Making the Famous "Section Test"

Barrett roof inspection service

Barrett Roof Inspection Service, introduced years ago, is unique in the roofing field. The work of Barrett Approved Roofers is carefully inspected by technically trained Barrett inspectors assuring roof performance far beyond that prescribed in any guarantee or bond. The services of a Barrett Roof Inspector are available for consultation without cost or obligation to owners of buildings east of the Rockies. He will render a complete, detailed, unbiased report on conditions found and recommend adequate procedure where corrections or repairs are required.

Roof with a

The same Barrett "SPECIFICATION" Roof that protects some of America's greatest buildings today is pointing the way toward the newest concept in roof architecture. Functional roof design—new and greater utilization of hitherto wasted roof areas—will mark the buildings of the future.

Already, BARRETT Roofs are being used for this modern development. The famed roof gardens at Rockefeller Center in New York, as well as outdoor recreation spots and rooftop parking areas in various crowded neighborhoods, are roofed with Barrett materials, surfaced with modern tile or other functional covering. The added use to which these roof tops are put demands a roof that will give a great many years' service without trouble—and architects know they can rely on Barrett for just this sort of service.

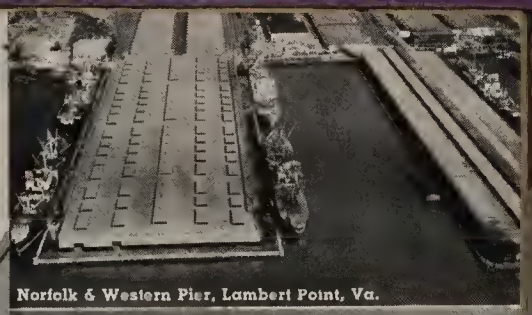
Just as Barrett "SPECIFICATION" Roofs proved their adaptability to new architectural forms in the decades since 1854, so too will these famous coal-tar pitch and felt roofs continue to provide the maximum in dependable, long-lasting weatherproof protection for the buildings of tomorrow.

Roof Garden, Rockefeller Center, N. Y.

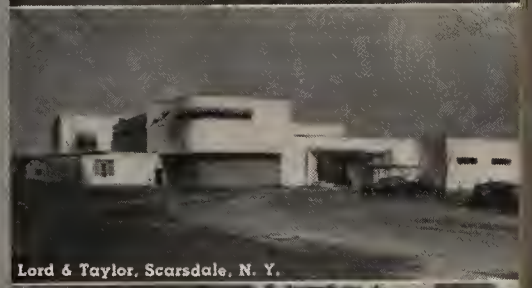
Top: Hershey Sports Arena, Hershey, Pa.
Bottom: Heald Machine Co., Worcester, Mass.

Waldorf-Astoria Hotel, New Yo

future



Norfolk & Western Pier, Lambert Point, Va.



Lord & Taylor, Scarsdale, N. Y.

Macy's, Jamaica, N. Y.

Kling Studios, Chicago

Modern Home, Long Island

Top: Jefferson Memorial, Washington, D. C.

Bottom: Dauphin County Court House, Harrisburg, Pa.

Field Building, Chicago

Top: J. W. Sexton High School, Lansing, Mich.
Bottom: Post Office, Minneapolis, Minn.

Empire State Building New York

Tabular Index to Specifications for BARRETT Roofs

Type Deck	Incline Limits (Inches per Foot)	Term of Bond	Type of Construction: Surfacing	Type of Construction: Plies of Felt	Type of Construction: Layers of Bitumen	Approx. Weight of Materials, Pounds per Square: Sheathing or Primer	Tarred Felt	Asphalt Felt	S.I.S. Roofing	Roofing Pitch	Steep Roof Pitch	Asphalt	Slag or Gravel	Total Weight Per Sq. (Lbs.)	Page No.
flat roofs															
Wood	0 to 2	20	Slag or Gravel	One Sheathing Paper Five No. 15 Felts	4	5	75			150			300	400	530*	12
		15		One Sheathing Paper Four No. 15 Felts	3	5	60			125			300	400	490*	12
		10		One Sheathing Paper One Double Thick Tarred Felt Two No. 15 Felts	3	5	60			125			300	400	490*	12
Poured Concrete or Gypsum	0 to 2	20		Four No. 15 Felts	5		60			200			300	400	560*	13
		15		Three No. 15 Felts	4		45			175			300	400	520*	13
Precast Concrete Slabs	0 to 2	20		Four No. 15 Felts	5		60			200			300	400	560*	15
		15		Three No. 15 Felts	4		45			175			300	400	520*	15
Precast Gypsum Slabs	0 to 2	20		Five No. 15 Felts	4		75			150			300	400	525*	14
		15		Four No. 15 Felts	3		60			125			300	400	485*	14
		10		One Double Thick Tarred Felt Two No. 15 Felts	3		60			125			300	400	485*	14
Insulated Steel	0 to 1	20		Four No. 15 Felts	5		60			200			300	400	560*	16
		15		Three No. 15 Felts	4		45			175			300	400	520*	16
Poured Concrete	0 to 1	Promenade Tile		Five No. 15 Felts	6		75			200					275■	17
	0 to ½	Double Slag or Gravel		Four No. 15 Felts	6		60			300			500	700	860‡	18
steep roofs															
Wood	2 to 5	20	Slag	One Sheathing Paper Five No. 15 Felts	5	5	75				140		275		495	22
		15		One Sheathing Paper Four No. 15 Felts	4	5	60				120		275		460	22
	3 to 9	15	Mineral Granules	One Sheathing Paper Two No. 15 Felts S.I.S. Roofing	3	5 5	30§	30†	120 120			54† 90			209 245	23
		10		One No. 30 Base Felt S.I.S. Roofing	2			30	120			60			210	23
Poured Concrete or Poured Gypsum	2 to 5	20	Slag	Four No. 15 Felts	5		60				160		275		495	24
		15		Three No. 15 Felts	4		45				140		275		460	24
	3 to 9	15	Mineral Granules	Two No. 15 Felts S.I.S. Roofing	4	9	30§	30†	120 120			72† 120			231 279	25
		10		One No. 15 Felt S.I.S. Roofing	3	9 9		15† 15§	120 120			54† 90			198 234	25
Precast Concrete or Gypsum	2 to 5	20	Slag	Five No. 15 Felts	5		75				140		275		490	26
		15		Four No. 15 Felts	4		60				120		275		455	26
	3 to 9	15	Mineral Granules	Two No. 15 Felts S.I.S. Roofing	3		30§	30†	120 120			54† 90			204 240	27
		10		One No. 30 Base Felt S.I.S. Roofing	2			30	120			60			210	27

* Based on slag. For gravel surfacing add 100 lbs. per sq.
‡ For gravel, add 200 lbs. per sq.
■ Weight of membrane only—Does not include wt. of tile surfacing.
† Cold application optional using asphalt felt and 2 gals. (approx. 18 lbs.) of S.I.S. Cold Cement per coating.
§ For hot application.

FLAT ROOFS

inclines not exceeding 2 ins. to 1 ft.

sec. 1

advantages of pitch, and slag or gravel surfacing

There are certain characteristics of coal-tar pitch and felt roofs with an armored wearing surface of slag or gravel that make them superior to other types of built-up roofing. Among the most noteworthy are the following:

pitch preserved by water—The vital oils which are the weatherproofing elements of pitch are protected by the very dampness and moisture which rot ordinary materials. This factor adds considerably to the serviceability and life of coal-tar pitch and felt roofs.

self-healing qualities of pitch—One of the most important advantages of pitch is its ability to "heal" itself. Small cracks caused by heavy traffic or accidental damage to the roof automatically fuse together and disappear. This mobility also allows the membrane to conform to slight irregularities in the roof deck.

insurance savings—Barrett "SPECIFICATION" Roofs take the base rate of insurance. They require no painting or other coating. Their moderate first cost and enduring qualities effect a cost per year far below that of any other type of built-up roof. They provide a permanent part of permanent building construction.

protection of slag or gravel surfacing—The armored wearing surface of slag or gravel is firmly embedded in a dipper pouring of pitch, thus providing a practically indestructible top layer. It is fire-safe and helps to protect the waterproofing elements from the destructive rays of the sun.

flat roof classification

Roofs having inclines of not more than two inches in one foot are generally classified as flat roofs. The practical purpose of the flat roof or any roof is to protect the interior, the contents and the occupants of the building from rain, snow, heat and cold. In addition, a good roof should provide effectual protection against the spread of fire, prevent dampness, add to the character of the building and offer freedom from periodical repair and maintenance expense.

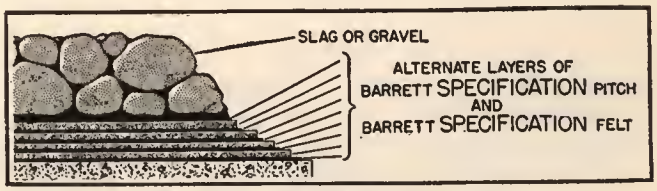
Barrett "SPECIFICATION" Roofs

8a/2

Only for flat roofs

Type "AA" Bonded for 20 years
Type "A" Bonded for 15 years

The Barrett "SPECIFICATION" Roof meets all the aforementioned requirements for flat roof construction. It is constructed of highest quality coal-tar pitch and roofing felt, properly applied in the membrane manner and surfaced with slag, gravel or similar approved surfacing.



Barrett "SPECIFICATION" Roofing

Barrett "SPECIFICATION" Pitch—The only pitch which meets the rigid requirements of the Barrett "SPECIFICATION" Roof, it is conceded to be the finest pitch it is possible to produce. It is preserved by water, self-healing, fungus-proof and prevents the development of fermentation.

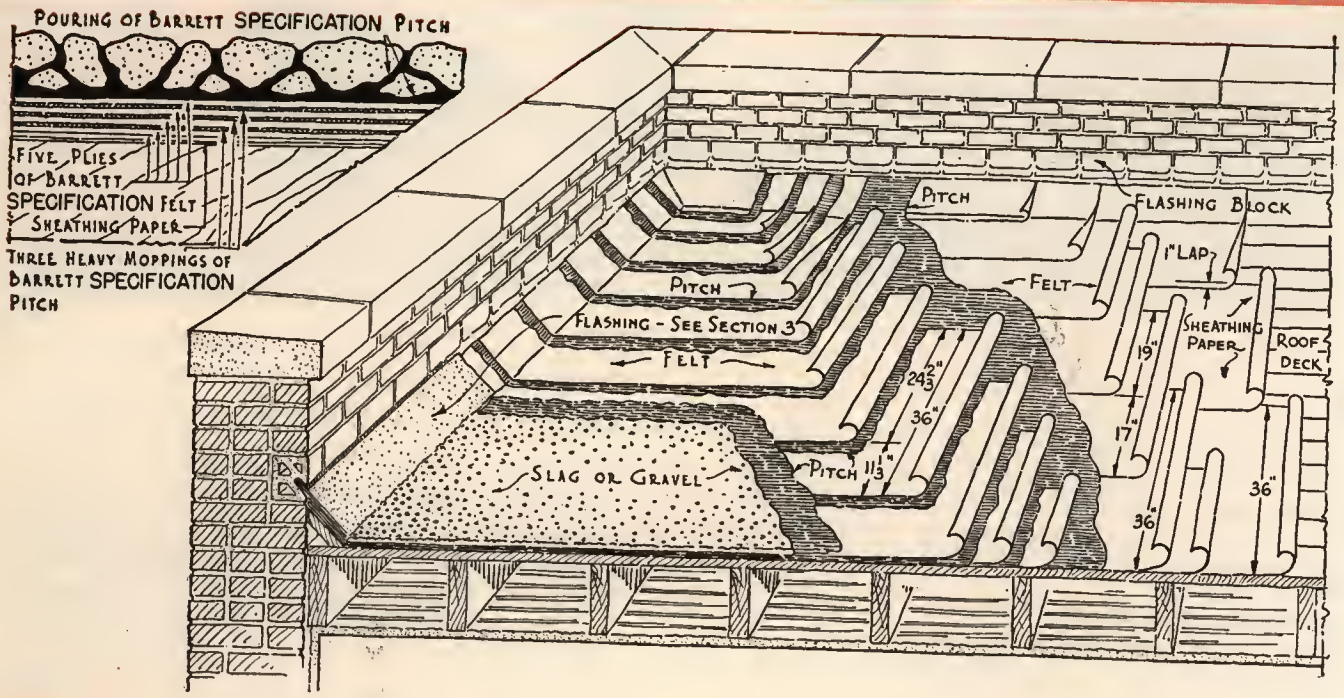
Barrett "SPECIFICATION" Felt—Carefully fabricated from selected stock, Barrett "SPECIFICATION" Felt is a smooth-textured, uniform roofing felt manufactured under strict laboratory control. It is especially intended for use with Barrett "SPECIFICATION" Pitch to produce a roof of unmatched serviceability.

BLACK DIAMOND Roofs

Barrett also manufactures the time-tested BLACK DIAMOND Roofing Materials. BLACK DIAMOND Pitch and Felt meet the exacting requirements of recognized Government, ASTM and AREA specifications. When applied by Barrett Approved Roofers in accordance with Barrett requirements and specification procedure contained herein, BLACK DIAMOND Roofs are bonded against repair and maintenance expense for the periods stated.

WOOD DECKS

Inclines not exceeding 2" to 1'-0"



20 YEAR BOND—BARRETT "SPECIFICATION" ROOF, TYPE "AA" —— 5-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a Barrett "SPECIFICATION" Roof, Type "AA," laid in accordance with the Barrett specification (for use over boards), by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for twenty (20) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—The roof deck shall be of seasoned lumber, smooth and free from loose boards, large cracks or knot holes, and free from loose material. Roof deck shall be properly graded to outlets.

APPLICATION OF ROOFING—First—Lay one (1) thickness of sheathing paper or unsaturated felt weighing not less than five (5) pounds per one hundred (100) square feet, lapping the sheets at least one (1) inch.

Second—Over the entire surface lay two (2) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet nineteen (19) inches over preceding one and nail as often as is necessary to hold in place until remaining Felt is laid.

Third—Coat the entire surface uniformly with Barrett "SPECIFICATION" Pitch.

Fourth—Over entire surface lay three (3) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet twenty-four and two-thirds (24⅔) inches over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full twenty-four and two-thirds (24⅔) inch lap on each sheet so that in no place shall Felt touch Felt. Each sheet shall be nailed not less than two (2) inches nor more than six (6) inches from the upper edge, spacing of nails to be in accordance with Barrett's nailing requirements.

Fifth—Over the entire surface pour from a dipper a uniform coating of Barrett "SPECIFICATION" Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter (¼) inch to five-eighths (⅝) inch in size, dry and free from dirt.

GENERAL—Care shall be taken during application that felt is laid without wrinkles or buckles. Not less than one hundred and fifty (150) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof. The pitch shall not be heated above 400° Fahrenheit and shall be applied to the roof between 350° and 375° F.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of twenty (20) years from date of completion, in accordance with Note No. 1.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs of five thousand (5000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification and subject to Barrett inspection and approval.

15 YEAR BOND—BARRETT "SPECIFICATION" ROOF, TYPE "A" —— 4-PLY

COMPLETE SPECIFICATIONS:

Exactly the same as for Type "AA" above, except for the following changes:

APPLICATION OF ROOFING—Fourth—Over the entire surface lay two (2) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet nineteen (19) inches over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full nineteen (19) inch lap on each sheet so that in no place shall Felt touch Felt. (Balance of paragraph remains the same.)

GENERAL—Change "one hundred and fifty (150)" to "one hundred and twenty-five (125)" pounds of Pitch.

Change "period of twenty (20)" to "period of fifteen (15)" years.

10 YEAR BOND—"BARRETT" SPECIAL BUILT-UP ROOF —— 3-PLY

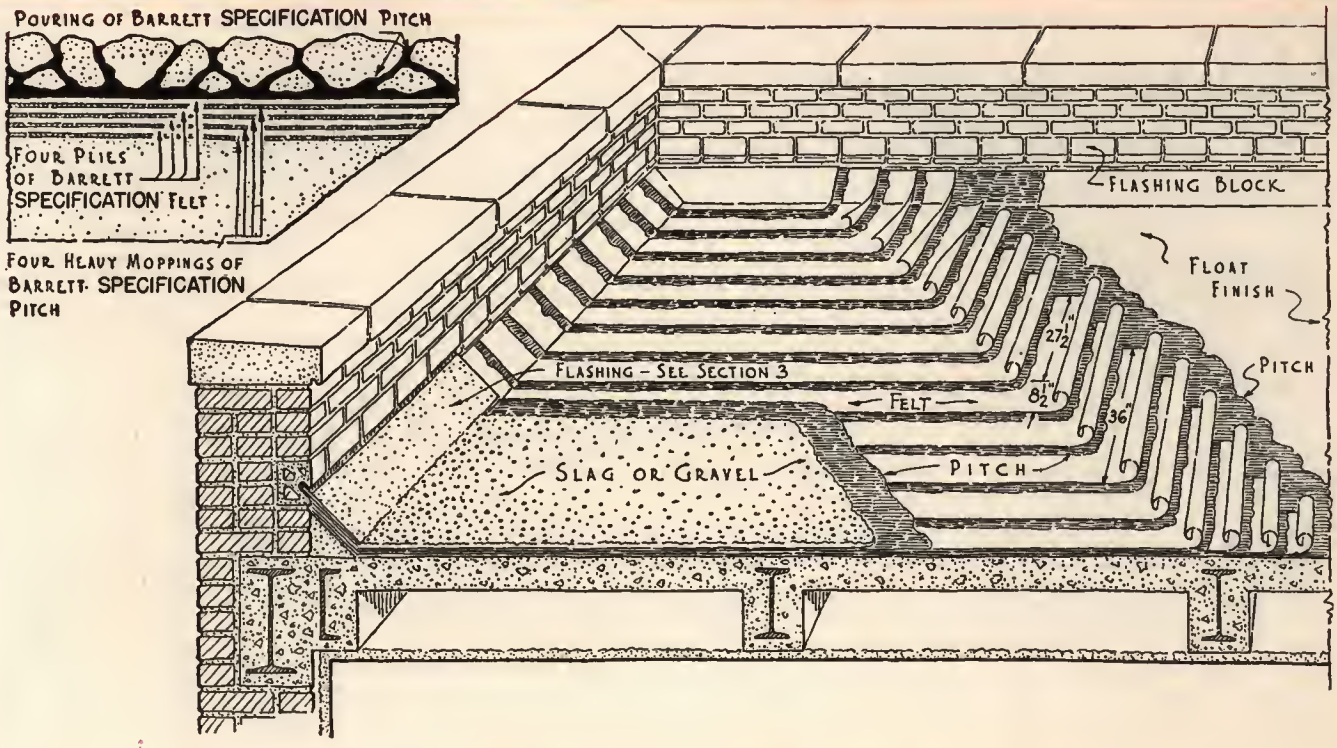
COMPLETE SPECIFICATIONS:

Exactly the same as Type "A" above, except as follows:

Second—Over the entire surface lay one (1) ply of Double Thick Tarred Felt as a base sheet, lapping each sheet four (4) inches over preceding one and nail, along lapped edges, as often as is necessary to hold in place until remaining felt is laid. The base felt shall be turned up along all walls and vertical surfaces for a height of four (4) inches.

GENERAL—Change "period of fifteen (15)" to "period of ten (10)" years.

Where Insulation Is Required, See Detail on Page 20.



8a/2

20 YEAR BOND—BARRETT "SPECIFICATION" ROOF, TYPE "AA" — 4-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a Barrett "SPECIFICATION" Roof, Type "AA," laid in accordance with the Barrett specification (for use over poured concrete or poured gypsum) by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for twenty (20) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—The roof deck shall be smooth, firm, dry and free from loose material. Roof deck shall be properly graded to outlets. **On poured concrete decks having inclines exceeding one (1) inch to the foot roof deck shall permit nailing or wood nailing strips shall be provided to comply with Barrett's nailing requirements.**

APPLICATION OF ROOFING—First—Where roof deck is of **poured concrete,** coat uniformly with Barrett "SPECIFICATION" Pitch.

Where roof deck is of **poured gypsum,** strip mop with continuous moppings of Barrett "SPECIFICATION" Pitch two (2) feet wide with six (6) inch spacing between moppings.

Second—Over the entire surface lay four (4) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet twenty-seven and one-half (27½) inches over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full twenty-seven and one-half (27½) inch lap on each sheet, so that in no place shall Felt touch Felt. Each sheet shall be nailed not less than two (2) inches nor more than six (6) inches from the upper edge, spacing of nails to be in accordance with Barrett's nailing requirements.

Third—Over the entire surface pour from a dipper a uniform coating of Barrett "SPECIFICATION" Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter (¼) inch to five-eighths (⅝) inch in size, dry and free from dirt.

GENERAL—Care shall be taken during application that felt is laid without wrinkles or buckles. Not less than two hundred (200) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof. The pitch shall not be heated above 400° Fahrenheit and shall be applied to the roof between 350° and 375° F.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of twenty (20) years from date of completion, in accordance with Note No. 1.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs of five thousand (5000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification and subject to Barrett inspection and approval.

15 YEAR BOND—BARRETT "SPECIFICATION" ROOF, TYPE "A" — 3-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a Barrett "SPECIFICATION" Roof, Type "A," laid in accordance with the Barrett specification (for use over poured concrete or poured gypsum) by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for fifteen (15) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

Exactly the same as for Type "AA" above, except for the following changes:

APPLICATION OF ROOFING—Change the first sentence under "Second" to read as follows:

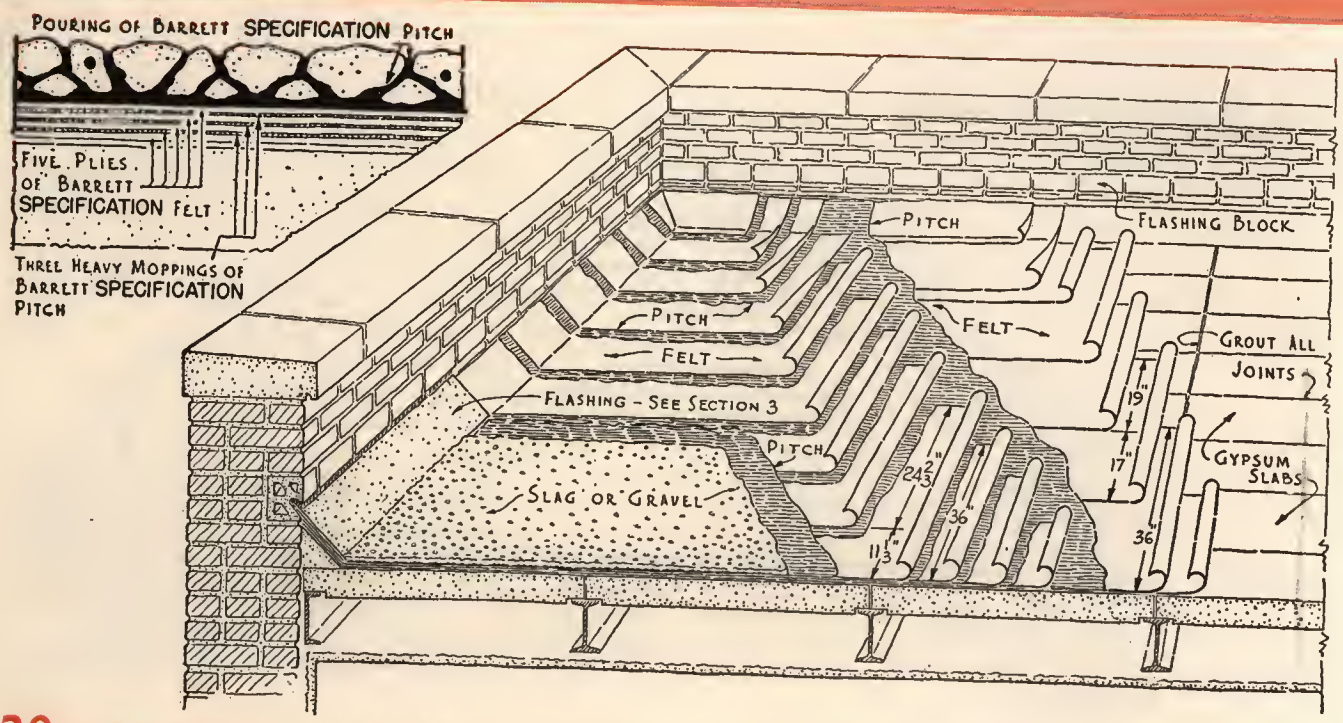
Second—Over the entire surface lay three (3) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet twenty-four and two-thirds (24⅔) inches over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full twenty-four and two-thirds (24⅔) inch lap on each sheet so that in no place shall Felt touch Felt. (The balance of this paragraph is the same as for Type "AA.")

GENERAL—Change "two hundred (200)" to "one hundred and seventy-five (175)" pounds of Pitch.

Change "period of twenty (20)" to "period of fifteen (15)" years.

Where Insulation Is Required, See Detail on Page 20.

PRECAST GYPSUM SLABS or METAL BOUND GYPSUM PLANK
Inclines not exceeding 2" to 1'-0"



20 YEAR BOND—BARRETT "SPECIFICATION" ROOF, TYPE "AA" — 5-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a Barrett "SPECIFICATION" Roof, Type "AA," laid in accordance with the Barrett specification (for use over precast gypsum slabs or metal bound gypsum planks), by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for twenty (20) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—All joints between precast gypsum slabs shall be properly grouted.

The roof deck shall be smooth, dry and free from loose material. Roof deck shall be properly graded to outlets.

APPLICATION OF ROOFING—First—Over the entire surface lay two (2) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet nineteen (19) inches over preceding one, and nail as often as is necessary to hold in place until remaining Felt is laid.

Second—Coat the entire surface uniformly with Barrett "SPECIFICATION" Pitch.

Third—Over the entire surface lay three (3) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet twenty-four and two-thirds (24⅔) inches over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full twenty-four and two-thirds (24⅔) inch lap on each sheet so that in no place shall Felt touch Felt. Each sheet shall be nailed not less than two (2) inches nor more than six (6) inches from the upper edge, spacing of nails to be in accordance with Barrett's nailing instructions. Nails shall not exceed seven-eighths (⅞) inch in length and shall be driven through flat tin discs one (1) inch or more in diameter.

Fourth—Over the entire surface pour from a dipper a uniform coating of Barrett "SPECIFICATION" Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter (¼) inch to five-eighths (⅝) inch in size, dry and free from dirt.

GENERAL—Care shall be taken during application that felt is laid without wrinkles or buckles. Not less than one hundred and fifty (150) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof. The pitch shall not be heated above 400° Fahrenheit and shall be applied to the roof between 350° and 375° F.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of twenty (20) years from date of completion, in accordance with Note No. 1.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs of five thousand (5000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification and subject to Barrett inspection and approval.

15 YEAR BOND—BARRETT "SPECIFICATION" ROOF, TYPE "A" — 4-PLY

COMPLETE SPECIFICATIONS:

Exactly the same as for Type "AA" above, except for the following changes:

APPLICATION OF ROOFING—Change the first sentence of paragraph headed "Third", to read as follows:

Third—Over the entire surface lay two (2) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet nineteen (19) inches over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full nineteen (19) inch lap on each sheet so that in no place shall Felt touch Felt. (The balance of this paragraph is the same as for Type "AA".)

GENERAL—Change "one hundred and fifty (150)" to "one hundred and twenty-five (125)" pounds of Pitch.

Change "period of twenty (20)" to "period of fifteen (15)" years.

10 YEAR BOND—"BARRETT" SPECIAL BUILT-UP ROOF — 3-PLY

COMPLETE SPECIFICATIONS:

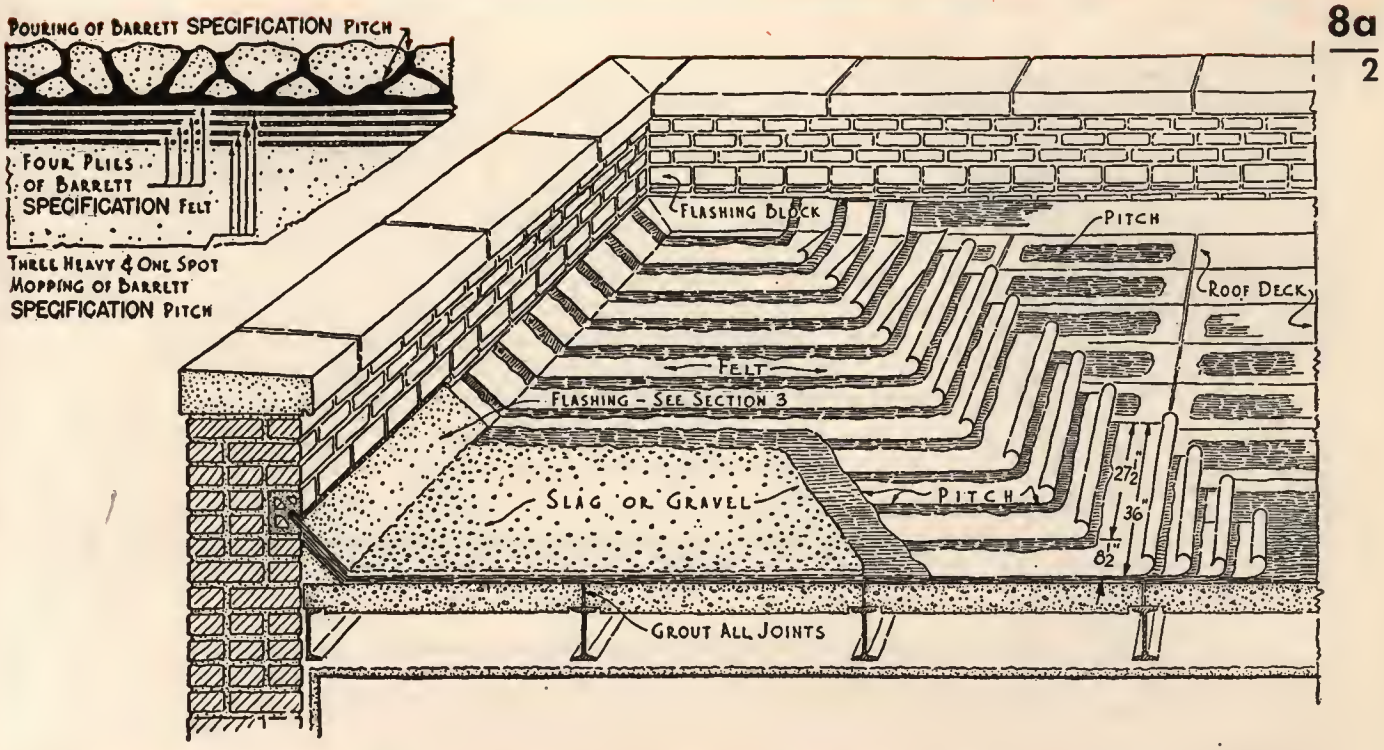
Exactly the same as Type "A" above, except as follows:

First—Over the entire surface lay one (1) ply of Double Thick Tarred Felt as a base sheet, lapping each sheet four (4) inches over preceding one and nail, along lapped edges, as often as is necessary to hold in place until remaining felt is laid. The base felt shall be turned up along all walls and vertical surfaces for a height of four (4) inches.

GENERAL—Change "period of fifteen (15)" to "period of ten (10)" years.

Where Insulation Is Required, See Detail on Page 20.

8a/2



20 YEAR BOND—BARRETT "SPECIFICATION" ROOF, TYPE "AA" — 4-PLY

***Note*—On inclines exceeding one (1) inch to one (1) foot provision shall be made for nailing strips set parallel with incline of roof and spaced to comply with Barrett's nailing requirements.**

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a Barrett "SPECIFICATION" Roof, Type "AA," laid in accordance with the Barrett specification (for use over precast concrete slabs), by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for twenty (20) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—All joints between concrete slabs shall be properly grouted.

The roof deck shall be smooth, firm, dry and free from loose material. Roof deck shall be properly graded to outlets.

APPLICATION OF ROOFING—First—Spot or strip mop each slab with Barrett "SPECIFICATION" Pitch, care being taken that pitch moppings are held back to within four (4) inches from the edge of each joint.

Second—Over the entire surface lay four (4) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet twenty-seven and one-half (27½) inches, over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full twenty-seven and one-half (27½) inch lap on each sheet, so that in no place shall Felt touch Felt. Each sheet shall be nailed not less than two (2) inches nor more than six (6) inches from the upper edge, spacing of nails to be in accordance with Barrett's nailing requirements.

Third—Over the entire surface pour from a dipper a uniform coating of Barrett "SPECIFICATION" Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter (¼) inch to five-eighths (⅝) inch in size, dry and free from dirt.

GENERAL—Care shall be taken during application that felt is laid without wrinkles or buckles. Not less than two hundred (200) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof. The pitch shall not be heated above 400° Fahrenheit and shall be applied to the roof between 350° and 375° F.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of twenty (20) years from date of completion, in accordance with Note No. 1.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs of five thousand (5000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification and subject to Barrett inspection and approval.

15 YEAR BOND—BARRETT "SPECIFICATION" ROOF, TYPE "A" — 3-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a Barrett "SPECIFICATION" Roof, Type "A," laid in accordance with the Barrett specification (for use over precast concrete slabs), by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for fifteen (15) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

Exactly the same as for Type "AA" above, except for the following changes:

APPLICATION OF ROOFING—Change the first sentence of paragraph headed "Second", to read as follows:

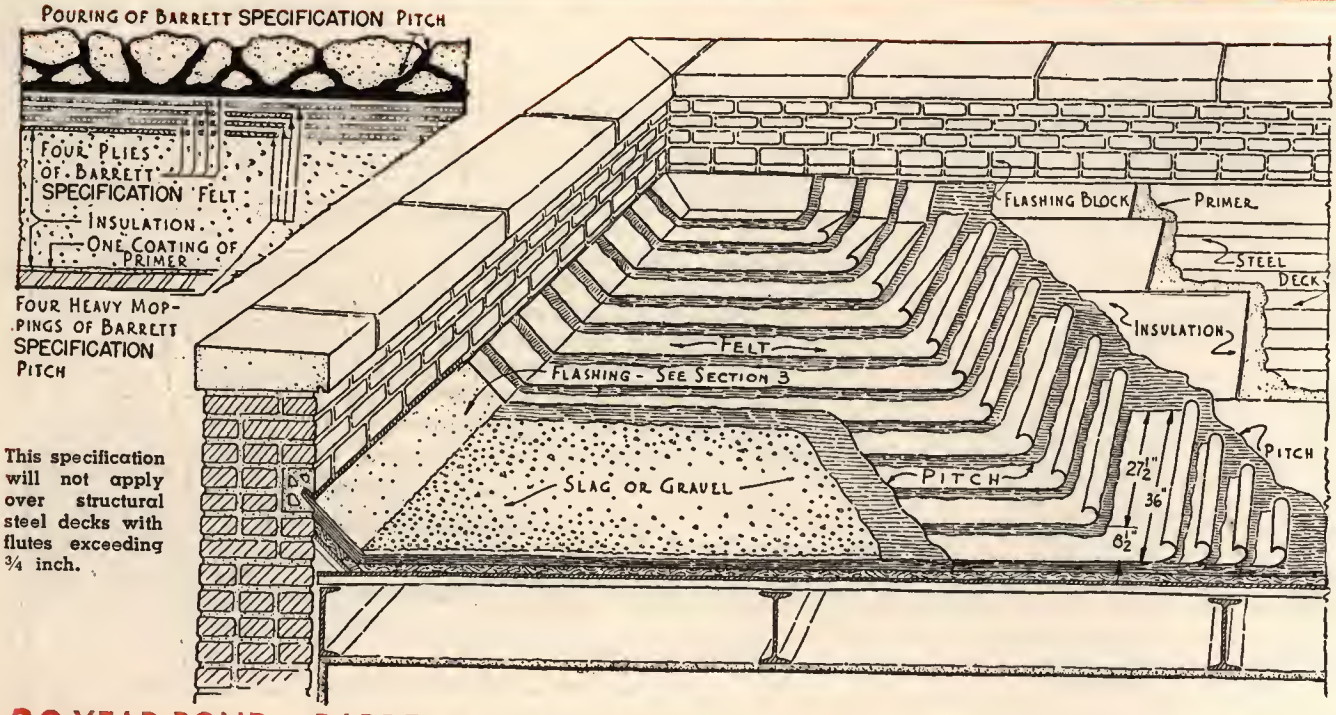
Second—Over the entire surface lay three (3) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet twenty-four and two-thirds (24⅔) inches over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full twenty-four and two-thirds (24⅔) inch lap on each sheet so that in no place shall Felt touch Felt.

GENERAL—Change "two hundred (200)" to "one hundred and seventy-five (175)" pounds of Pitch.

Change "period of twenty (20)" to "period of fifteen (15)" years.

Where Insulation Is Required, See Detail on Page 20.

INSULATED STEEL DECKS
Inclines not exceeding 1" to 1'-0"



This specification will not apply over structural steel decks with flutes exceeding ¾ inch.

20 YEAR BOND—BARRETT "SPECIFICATION" ROOF, TYPE "AA" —— 4-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a Barrett "SPECIFICATION" Roof, Type "AA," laid in accordance with the Barrett specification (for use over insulated steel roof decks), by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for twenty (20) years from date of completion in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—The roof deck shall be smooth, firm, dry and free from rust, grease or loose material. Roof deck shall be properly graded to outlets.

APPLICATION OF ROOFING—First—Over the entire surface spread a uniform coating of BARRETT Steep Roofing Asphalt into which, while hot, embed approved rigid roof insulation. Over fluted decks insulation shall be mopped on underside with "CRYSTAL" Steep Asphalt.

Note—Where vapor seal course is to be provided under the insulation it is recommended that at least two plies of BARRETT Asphalt Felt be applied cemented with BARRETT Steep Roofing Asphalt.

Insulation shall be kept and applied in a dry condition and shall be firm and free from defects or loose materials. Cut-offs consisting of two (2) plies of BARRETT Waterproofing Fabric and three (3) moppings of BARRETT Steep Roofing Asphalt shall be applied as required, during the application of the insulation, and such cut-offs shall extend at least six (6) inches on roof deck and four (4) inches on top of insulation. No more insulation shall be applied than can be immediately covered with roofing. Care shall be taken that all ends are properly flashed so that at no time shall surface or edges of insulation be exposed.

Second—Coat the entire surface of the insulation with Barrett "SPECIFICATION" Pitch.

Third—Over the entire surface lay four (4) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet twenty-seven and one-half (27½) inches over the preceding one, mopping with Barrett "SPECIFICATION" Pitch the full twenty-seven and one-half (27½) inch lap, so that in no place shall Felt touch Felt. *Each sheet shall be nailed not less than two (2) inches nor more than six (6) inches from the upper edge with soft-nosed nails of sufficient length to extend through the insulation and clinch. Nails shall be spaced not more than eight (8) feet apart.*

Fourth—Over the entire surface pour from a dipper a uniform coating of Barrett "SPECIFICATION" Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter (¼) inch to five-eighths (⅝) inch in size, dry and free from dirt.

GENERAL—Care shall be taken during application that felt is laid without wrinkles or buckles. Not less than two hundred (200) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof. The pitch shall not be heated above 400° Fahrenheit and shall be applied to the roof between 350° and 375° F.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of twenty (20) years from date of completion, in accordance with Note No. 1.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs of five thousand (5000) square feet or more in the United States and Canada where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification and subject to Barrett inspection and approval.

15 YEAR BOND—BARRETT "SPECIFICATION" ROOF, TYPE "A" —— 3-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a Barrett "SPECIFICATION" Roof, Type "A," laid in accordance with the Barrett specification (for use over insulated steel roof decks), by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for fifteen (15) years from date of completion in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

Exactly the same as for Type "AA" above, except for the following changes:

APPLICATION OF ROOFING—Change paragraph headed "Third" to read as follows:

Third—Over the entire surface lay three (3) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet twenty-four and two-thirds (24 2/3) inches over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full twenty-four and two-thirds (24 2/3) inch lap, so that in no place shall Felt touch Felt. (Balance of paragraph remains the same.)

GENERAL—Change "two hundred (200)" to "one hundred seventy-five (175)" pounds of Pitch.

Change "period of twenty (20)" to "period of fifteen (15)" years.

See Section No. 3 for Flashing Specifications and Details.

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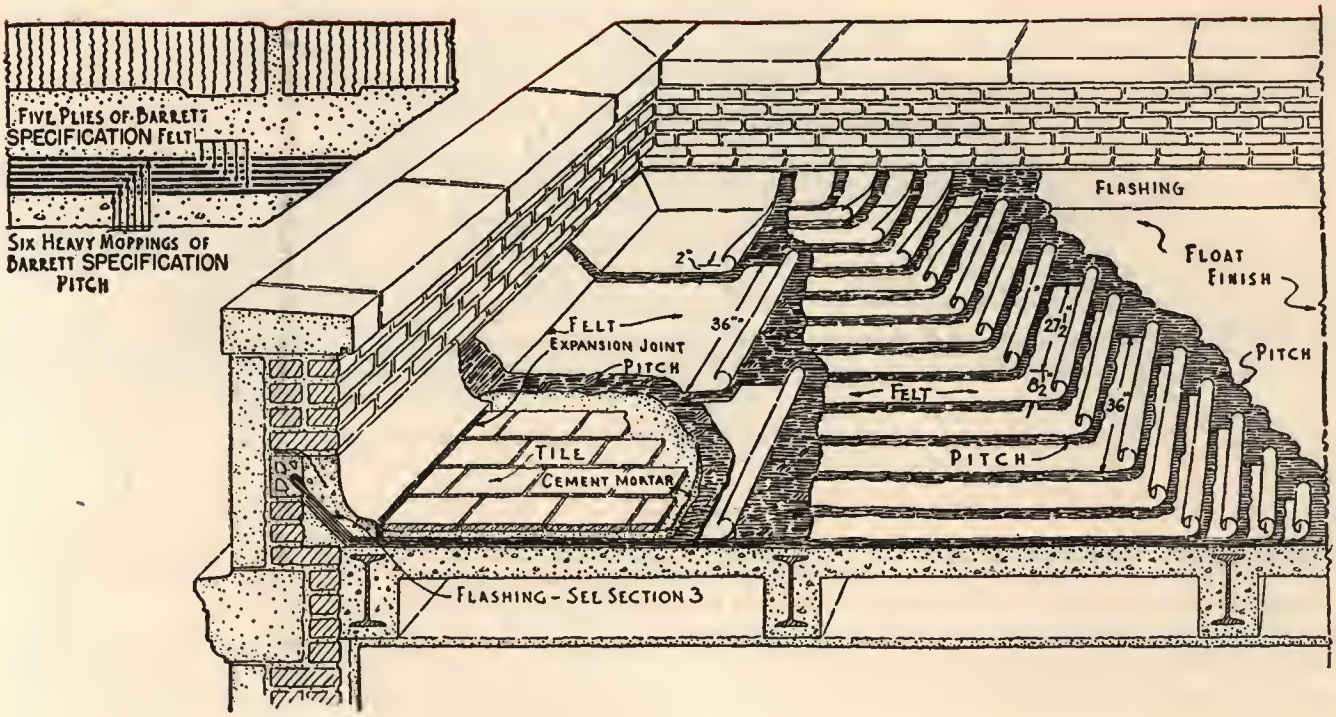
2



BARRETT "SPECIFICATION" 5-PLY ROOF OVER CONCRETE FOR USE UNDER PROMENADE TILE

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a Barrett "SPECIFICATION" 5-Ply Roof, and shall be laid in accordance with the Barrett specification (for use under promenade tile), by a roofing contractor approved by Barrett, who has had experience in this kind of work, and who can refer to similar installations where his work has proved satisfactory.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—The roof deck shall be smooth, firm, dry and free from loose material. Roof deck shall be properly graded to outlets. **The cement mortar in which tile is embedded shall not be used for grading the deck.**

APPLICATION OF ROOFING—First—Coat the concrete uniformly with Barrett "SPECIFICATION" Pitch.

Second—Over the entire surface lay four (4) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet twenty-seven and one-half (27½) inches over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full twenty-seven and one-half (27½) inch lap on each sheet, so that in no place shall Felt touch Felt.

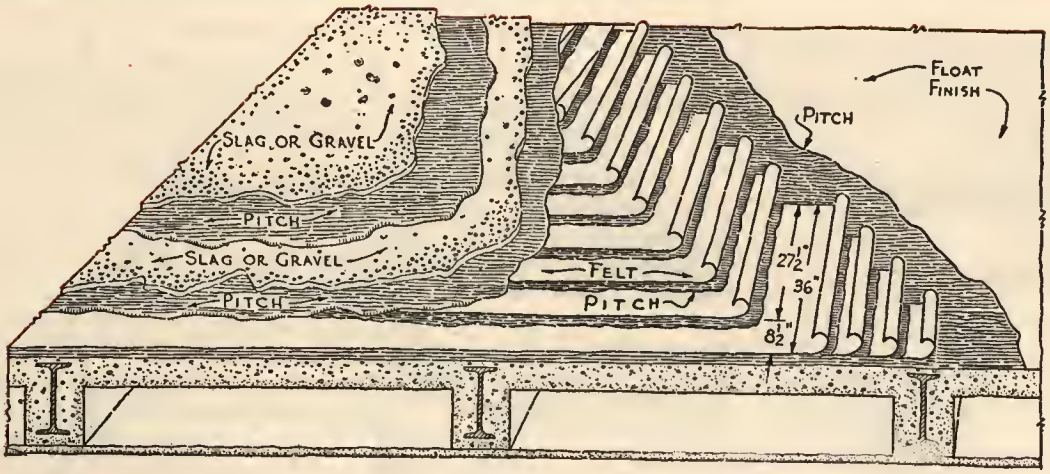
Third—Immediately preceding the laying of the tile, thoroughly clean the surface of the roof and mop with Barrett "SPECIFICATION" Pitch, into which, while hot, embed (1) layer of "SPECIFICATION" Felt, lapping each sheet two (2) inches over preceding one. Over this surface and immediately preceding the laying of the tile spread a heavy uniform coating of Barrett "SPECIFICATION" Pitch. No more of the roof surfaces shall be covered with the final or last ply of Felt and mopping of Pitch than is covered at the same time with tile and is necessary to allow for proper connections.

See Section No. 3 for Flashing Specifications and Details.

Over the Felt and Pitch roofing thus laid, 1 x 6 x 9-inch vitrified clay tile (approved by the architect) shall be set in approx. three-fourths (¾) inch to one (1) inch of Portland Cement Mortar (1 to 3 mix) and joints grouted full with Portland Cement Mortar (1 to 2 mix). The tile shall be laid to show three-sixteenths (3/16) inch to one-fourth (¼) inch joints. Expansion joints three-fourths (¾) inch wide filled with a plastic mixture (approved by the architect) shall be provided between the tile and all flashings, and either metal or mastic expansion joints shall be provided throughout the roof surface as may be necessary to take care of expansion. All expansion joints shall extend from the top of the tile through the cement mortar to the Felt and Pitch waterproofing and in no case shall expansion joints be spaced more than twenty (20) feet apart.

GENERAL—Care shall be taken during application that felt is laid without wrinkles or buckles. Not less than two hundred (200) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof. The pitch shall not be heated above 400° Fahrenheit and shall be applied to the roof between 350° and 375° F. The roofing contract shall be awarded to a roofing contractor approved by Barrett, who has had experience in this kind of work, and who can refer to similar installations where his work has proved satisfactory.

POURED CONCRETE DECKS
Inclines not exceeding ½" to 1'-0"
UTILITY TYPE SURFACINGS



4-PLY DOUBLE SURFACED ROOF FOR UTILITY OR SPRAY POND SERVICE

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a Barrett "SPECIFICATION" 4-ply Roof, laid in accordance with the Barrett specification (for use over concrete—double surfacing for utility or spray pond service), by a roofing contractor approved by Barrett.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—The roof deck shall be smooth, firm, dry, properly graded to outlets, and free from loose material.

APPLICATION OF ROOFING—First—Coat the concrete uniformly with Barrett "SPECIFICATION" Pitch.

Second—Over the entire surface lay four (4) plies of Barrett "SPECIFICATION" Tarred Felt, lapping each sheet twenty-seven and one-half (27½) inches over preceding one, mopping with Barrett "SPECIFICATION" Pitch the full twenty-seven and one-half (27½) inch lap on each sheet, so that in no place shall Felt touch Felt.

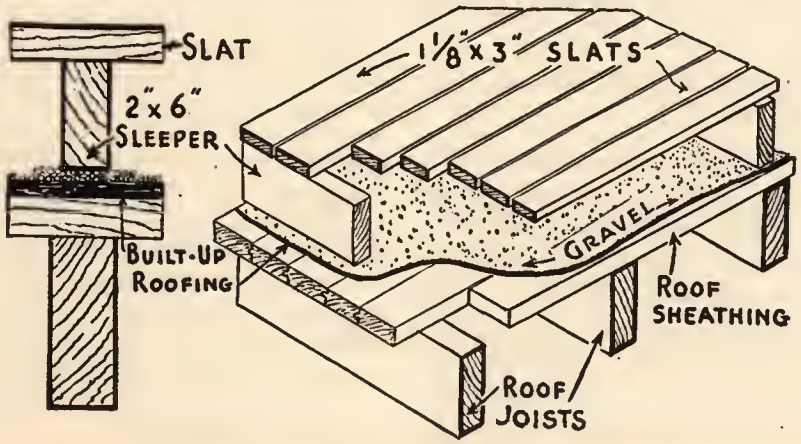
Third—Immediately preceding the application of surfacing material, thoroughly clean the surface of the roofing, after which over the entire surface, pour from a dipper a uniform coating of Barrett "SPECIFICATION" Pitch, into which, while hot, embed not less than four hundred (400) pounds of gravel, or three hundred (300) pounds of slag for each one hundred (100) square feet.

Fourth—Remove all loose or excess gravel or slag by lightly sweeping all surfaces and immediately follow with hot pouring of Barrett "SPECIFICATION" Pitch, applied to all surfaces, into which, while hot, embed not less than three hundred (300) pounds of gravel, or two hundred (200) pounds of slag for each one hundred (100) square feet. The gravel or slag shall be from one-quarter (¼) to five-eighths (⅝) inch in size, dry and free from dirt. All gravel or slag shall be firmly embedded in Pitch so that no loose particles appear in finished job. The finished surface may be lightly rolled if necessary.

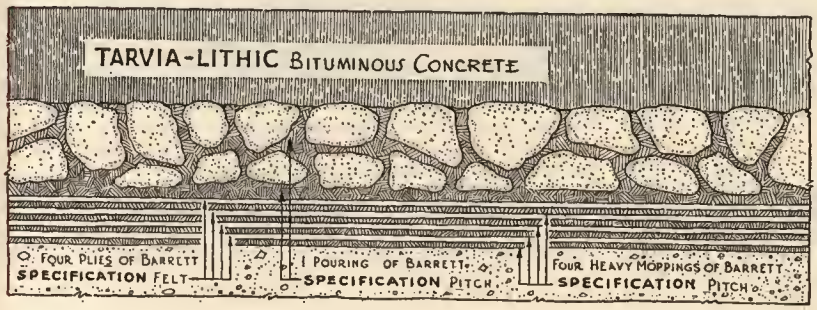
GENERAL—Care shall be taken during application that felt is laid without wrinkles or buckles. Not less than three hundred (300) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed roof. The pitch shall not be heated above 400° Fahrenheit and shall be applied to the roof between 350° and 375° F.

The roofing contract shall be awarded to a roofing contractor, approved by Barrett, who has had experience in this kind of work, and can refer to similar installations where his work has proved satisfactory.

SUGGESTED DETAIL FOR WALKWAY OR DUCK BOARD DECK OVER GRAVEL SURFACED ROOFING



Shown are typical details covering the application of Utility Type Surfacings over built-up roofs. Barrett will furnish specifications upon request for the following types of surfacing finish, including flagging of slate, granite, or stone, in regular or random dimensions, when applied over roofing or waterproofing membrane: 8a/2

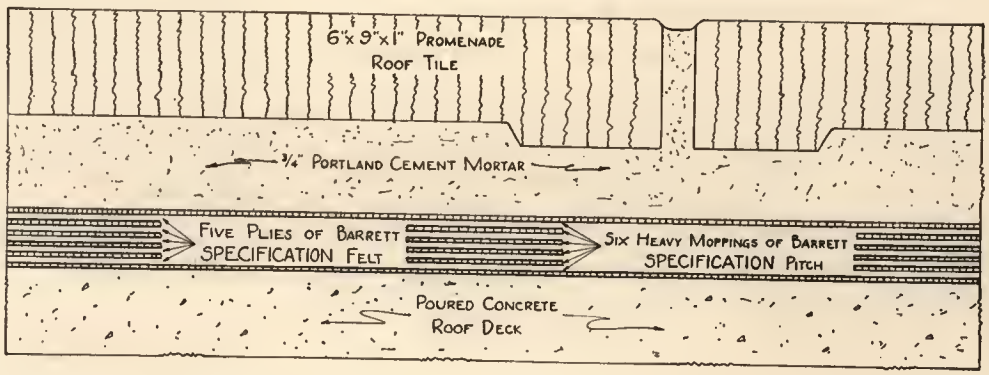


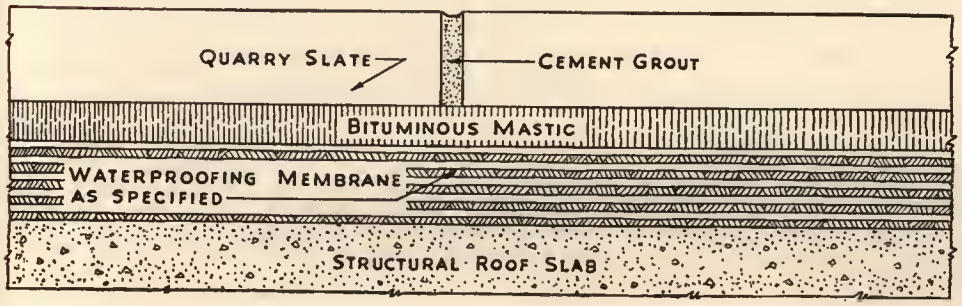
"TARVIA-LITHIC" Bituminous Concrete Surfacing

Architect's Note: — Where a wearing surface of bituminous concrete is desired as, for example, in the utilization of roof areas for automobile parking spaces, etc., specifications will be submitted on request.

Since this type of Barrett surfacing is available only at certain locations, Barrett should be contacted during preparation of specifications.

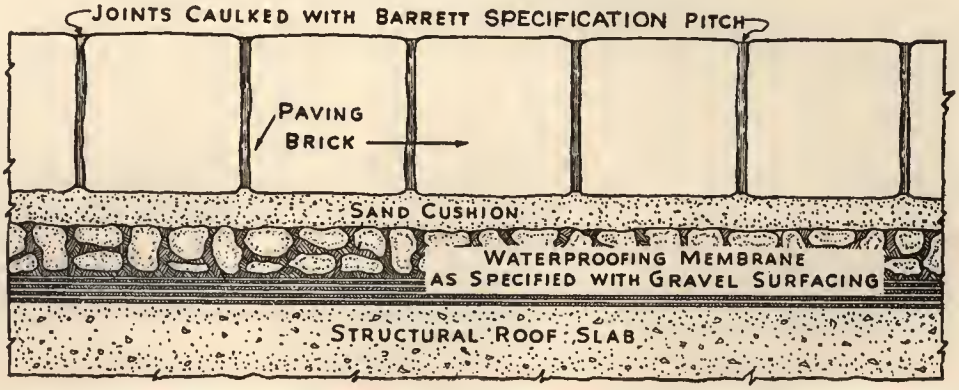
Promenade Tile Surfacing



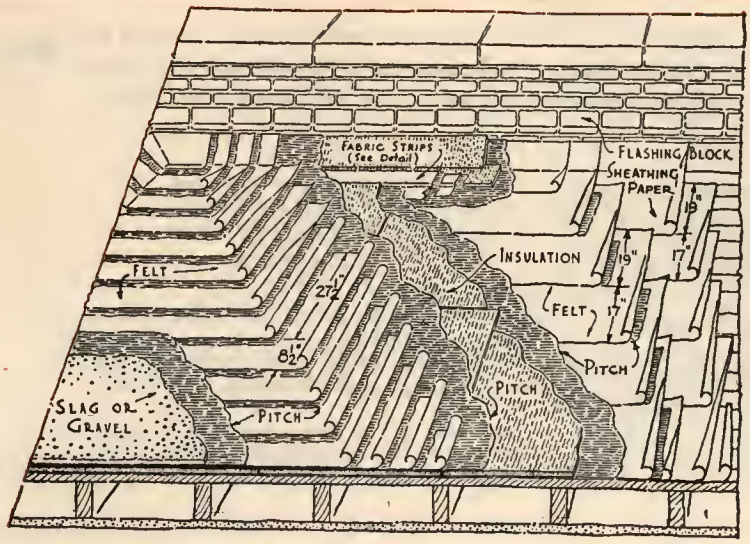


Quarry Slate Promenade Surfacing

Paving Brick Traffic Surfacing



ROOF INSULATION DETAILS—recommended where Barrett bonded roofs are installed over rigid roof insulation



Application Over Wood Deck

When used as a base for Barrett Bonded Roofs, insulation shall meet the following requirements:

1. Shall be sufficiently firm to withstand roof traffic without compressing or crushing.
2. Shall be of such composition to receive and hold all nails where the roofing specifications so require.
3. Shall present a smooth even surface and be thoroughly dry before and during the application of the roofing.
4. Shall be mechanically fastened or otherwise anchored to the roof deck in a manner which is acceptable to Barrett.

When rigid insulation is adequately protected by a waterproofing course or vapor barrier as described, all roofing applied over the insulation shall be solid mopped in accordance with specifications for use over concrete decks, as outlined in this manual, with the following exceptions:

Over cork board and impregnated or coated types of insulation, roofing shall be applied in channel-mopped coats of pitch over the insulation. Moppings shall be two (2) feet wide with six (6) inch spacing between moppings. On slopes in excess of one (1) inch to the foot, insulation shall be mechanically secured to the deck. On slopes in excess of one-half (½) inch to the foot, each ply of felt shall be nailed six (6) inches from top edge and spaced in accordance with nailing requirements.

When insulation is installed directly over wood on metal-bound gypsum planks, or precast gypsum decks without the protection of a waterproofing course or vapor barrier, and when conditions of humidity and condensation are not involved, roofing specifications for use over wood decks, as outlined in this manual, shall be followed, except that the rosin sized sheathing may be omitted over the insulation. All nails shall penetrate through the entire thickness of the insulation and into the deck not less than five-eighths (⅝) inch.

WOOD, PRECAST GYPSUM SLABS OR METAL-BOUND GYPSUM PLANKS

A waterproofing course or vapor barrier shall be applied as follows: Over the entire surface lay two (2) plies of sheathing weighing not less than five (5) pounds per 100 sq. ft., lapped nineteen (19) inches and nailed only as often as necessary to hold in place. Over the sheathing course should then be installed two (2) plies of tarred felt, each sheet lapped nineteen (19) inches over the preceding one. If nailing is required it should be done approximately two (2) inches from the upper edge only. The felt should then be mopped back seventeen (17) inches on each sheet, or up to but not beyond the nail course—followed by a uniform and continuous pitch coating over the entire top surface into which, while hot, the insulation is embedded. The built-up roofing as specified should then be immediately applied over the insulation.

POURED CONCRETE, POURED GYPSUM OR PRECAST CONCRETE DECKS

In applying waterproofing course over poured concrete or poured gypsum decks, it is important that the surface to which the waterproofing is applied be dry, smooth, firm and free from loose materials. Where the roof deck is of poured concrete, it should be uniformly coated with hot roofing pitch. Where the roof deck is of poured gypsum, it should be channel-mopped with continuous moppings of hot pitch approximately two (2) feet wide with channel spacings approximately six (6) inches wide between moppings.

Where the roof deck is of precast concrete slabs, spot or strip mop each slab with hot roofing pitch, care being taken that pitch moppings are held back four (4) inches from the edge of each joint.

Over the entire surface should then be installed two plies of tarred felt, each sheet lapped nineteen (19) inches over preceding one, mopped with hot roofing pitch the full width of the 19-inch lap on each sheet, so that in no place shall felt touch felt. The entire felt surface should then be coated with a uniform and continuous mopping of pitch into which, while hot, the insulation is embedded. The built-up roofing, as specified, should then be immediately applied over the insulation.

When insulation is installed directly over poured concrete decks without the protection of a waterproofing course or vapor barrier, and where conditions of humidity and condensation are not involved, the concrete deck shall be solidly mopped with hot pitch, into which, while hot, the insulation shall be embedded. The roofing applied over the insulation shall be solid mopped in accordance with the specifications for use over concrete decks.

When insulation is installed directly over poured gypsum decks or precast concrete slabs, where conditions of humidity and condensation are not involved, it is recommended that a two-ply waterproofing course be applied as a base to receive the insulation, which provides complete embedment of the insulation.

When insulation is installed over any deck having slopes over one (1) inch to the foot and where a Barrett bonded roof is to be installed, Barrett's representative or district office should be consulted for requirements and specifications.

Where a Barrett bonded roof is to be installed over an old roof membrane previously applied over insulation, Barrett's representative or district office should be consulted for requirements and specifications.

WATER CUT-OFFS

Water cut-offs consisting of two plies of pitch waterproofing fabric or tarred felt and alternate moppings of pitch should be installed at all edges of insulation and adjoining parapet walls, curbs, or other vertical surfaces. Supplementary and continuous cut-offs of similar construction should also be installed throughout the insulation approximately every 25 feet in one direction only, unless it is considered desirable to install further cut-offs in cross directions, as for example adjacent to hips, ridges, etc.

GENERAL

Where metal base flashing, gravel guards or flanges for roof drains, ventilators, etc., are required, creosoted wood nailing strips of a thickness equal to the insulation shall be properly secured to the structural roof deck. Nailing strips shall be two (2) inches wider than metal roof flange.

In the construction of a waterproofing course or vapor barrier, the Felt should be turned up sufficiently at all vertical edges to allow for lapping back over the top surface of the insulation at least 6". This lap should then be cemented down and coated with pitch prior to the application of the roofing.

Care should be taken to prevent tears, breaks, or ruptures of any kind in the vapor barrier which might interfere with its effectiveness.

When necessary to nail insulation to the deck and through the waterproofing course, the nails used should not penetrate to the underside of the roof deck.

Where multiple layers of insulation are installed, each succeeding layer shall break joints with the underlying layer and shall be set in hot bituminous moppings.

The insulation shall be immediately covered with roofing and edges shall be stripped and sealed after each day's work, or whenever necessary due to weather conditions.

For methods of installing Rock Wool Insulation in connection with built-up roofs, see page 62.

"BARRETT" SPECIAL STEEP ROOFS

Steep Roof Classification

Roofs having inclines in excess of two inches in one foot are generally classified as steep roofs.

Such roofs are not ordinarily required to hold rain water, slush, ice and snow for protracted periods. They are, however, subjected to longer periods of exposure to the harmful actinic rays of the sun, and should be constructed so as to provide complete protection under all prevailing conditions.

Roof Construction

Great care in construction and exacting inspection are desirable in steep roof work. The use of the proper materials and the proper application thereof are of paramount importance. Materials used in the construction of BARRETT Built-Up Roofs for steep surfaces are particularly suited to the requirements involved. Applied, they form a continuous waterproofing membrane which will not slide or rupture under normal deck stress or strain.

Under no circumstances should membrane coverings be left unprotected or exposed to the weather. For this reason, consistent with Barrett's policy of providing the most durable weathering surface, Barrett's steep roof construction is protected by crushed slag or by mineralized aggregate obtainable in a variety of colors.

Application

Roofers approved by Barrett are skilled in the application of steep roof construction, and can be relied upon to handle this type of work with the same degree of efficiency as is obtained on all Barrett specification work.

The specifications in this section are recommended for use under the specific conditions as outlined.

"BARRETT" STEEP ROOF PITCH

A Revolutionary, New Building Product

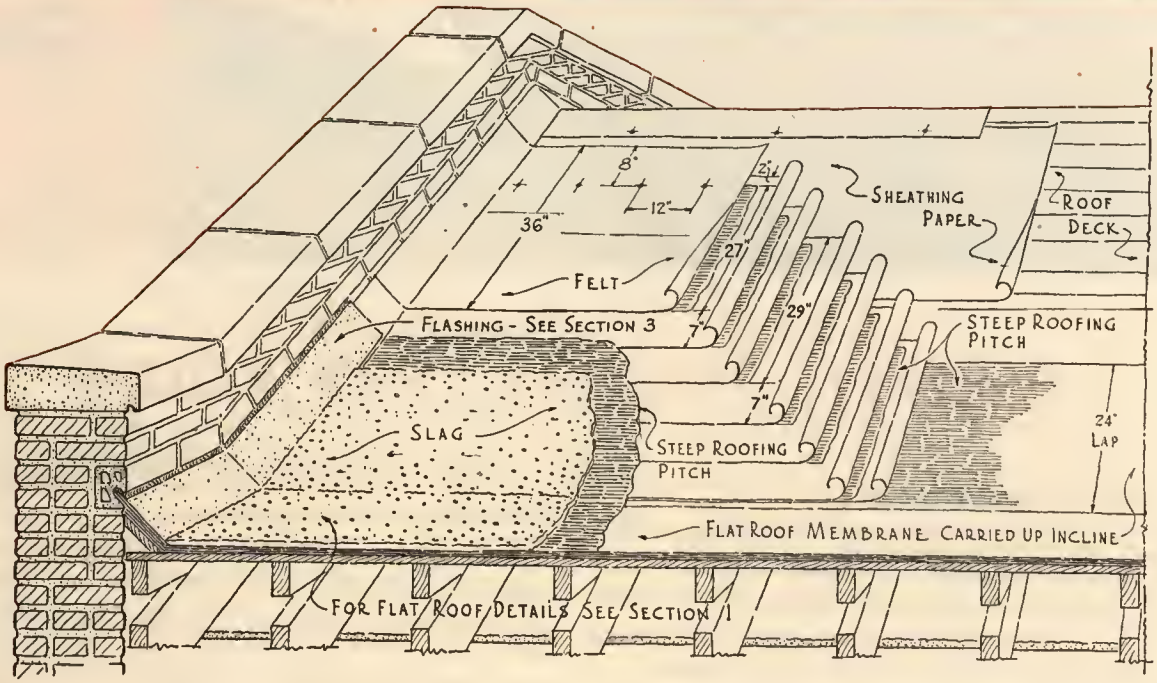
BARRETT Steep Roof Pitch combines with **unusual stability** all the unmatched **waterproofing** and **weatherproofing** characteristics of coal tar pitch. The development of this revolutionary, new building product makes coal tar pitch, felt and gravel roofs possible on many types of buildings formerly denied this superior type of roof construction.

Practical installation experience under extreme conditions has demonstrated that BARRETT Steep Roof Pitch does not slide or "bleed" at the highest temperatures to which roofs are subjected and does not crack or lose bond during extreme cold.

Roofs constructed of BARRETT Steep Roof Pitch and Barrett "SPECIFICATION" Felt with a fire-safe slag wearing surface, applied according to Barrett specifications by Barrett Approved Roofers, are bonded by the Continental Casualty Company of Chicago against repair and maintenance expense for periods up to 20 years.

WOOD DECKS

Inclines over 2″ and not exceeding 4″ to 1′-0″



20 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 5-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, laid in accordance with the Barrett specification (for use over boards on steep surfaces), by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for twenty (20) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—The roof deck shall be of seasoned lumber, smooth and free from loose boards, large cracks or knot-holes, and shall be firm, and free from loose material.

APPLICATION OF ROOFING—First—Lay one (1) thickness of sheathing paper or unsaturated felt weighing not less than five (5) pounds per one hundred (100) square feet, lapping the sheet at least one (1) inch. The sheathing paper shall be nailed sufficiently to hold it in place during application of the roofing.

Second—Over the entire surface lay five (5) plies of Barrett "SPECIFICATION" Tarred Felt at right angles to the incline of the roof, lapping each sheet twenty-nine (29) inches over preceding one. Each sheet shall be nailed with one (1) inch barbed roofing nails through flat tin discs, eight (8) inches from the upper edge and nails shall be spaced not more than one (1) foot apart.

Third—Mop back on each sheet for a distance of twenty-seven (27) inches with BARRETT Steep Roofing Pitch. The Felt shall follow and shall be firmly embedded into the hot moppings as applied. Care shall be taken that the Pitch moppings are even with lower edge of each overlying sheet, and that the finished Felt surface is free and clean of Pitch drippage.

Fourth—Over the entire surface, apply a uniform coating of BARRETT Steep Roofing Pitch into which, while hot, firmly embed not less than two hundred and seventy-five (275) pounds of slag for each one hundred (100) square feet of finished roofing. The slag shall be from three-sixteenths ($\frac{3}{16}$) to one-half (½) inch in size, shall be dry and free from dirt, and shall be embedded into the surface mopping immediately. If roofing is applied during cool weather, or slag is damp, slag shall be heated and dried, so that it is warm when applied to the roof. The slag surfacing shall be continuous; shall cover and shall be firmly embedded into the surface coating.

GENERAL—Care shall be taken during application that Felt is laid without wrinkles or buckles. Not less than eighty (80) pounds of Pitch shall be used for constructing the membrane, and not less than sixty (60) pounds of Pitch shall be used for embedding the slag in constructing each one hundred (100) square feet of completed roof.

Note: BARRETT Steep Roof Pitch shall be heated in tubeless kettles, or kettles with tubes equipped with a thermostatic control unit.

The pitch shall not be heated above 400° Fahrenheit and shall be applied to the roof between 350° and 375° F.

Where steep roofs join flat roofs, the roofing on the flat surfaces shall be carried up the inclined surfaces, not less than twenty-four (24) inches before the application of the Steep Roofing.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of twenty (20) years from date of completion, see Note No. 1.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs in the United States and Canada, where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification, and subject to Barrett inspection and approval under the following conditions:

(a) That the steep roof area shall be roofed in conjunction with the flat roof area.

(b) That the flat roof area shall be covered with a Barrett Bonded Roof.

15 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 4-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, laid in accordance with the Barrett specification (for use over boards on steep surfaces), by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for fifteen (15) years from date of completion, in accordance with Note No. 1 of said specification.

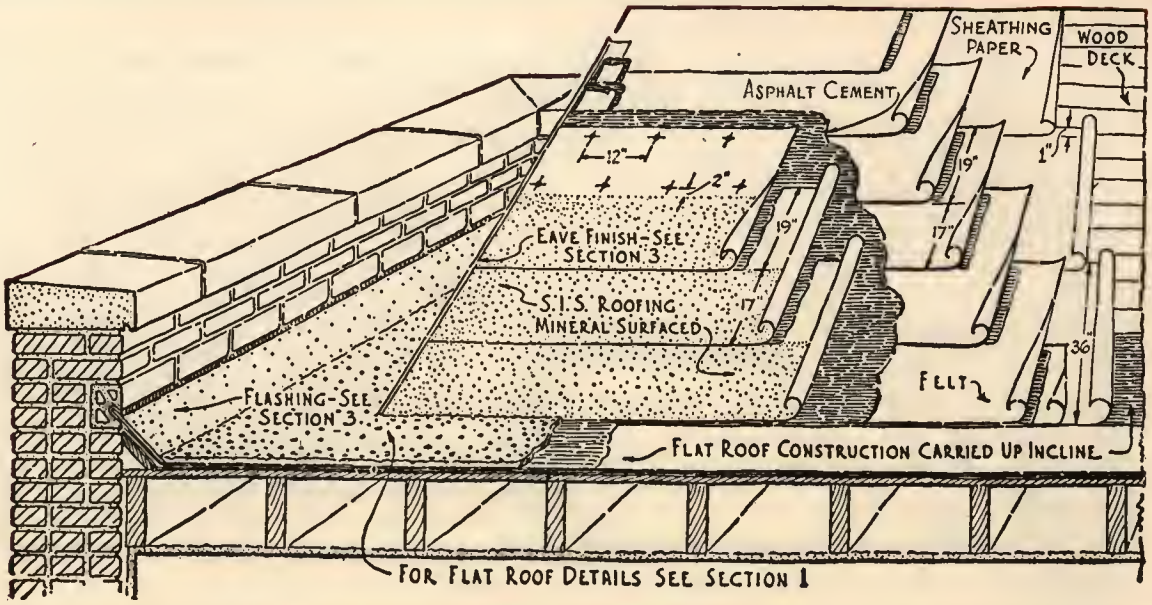
COMPLETE SPECIFICATIONS:

Exactly the same as for twenty (20) year bond except for the following changes:

APPLICATION OF ROOFING—Second—Over the entire surface lay four (4) plies of Barrett "SPECIFICATION" Tarred Felt at right angles to the incline of the roof, lapping each sheet twenty-seven and one-half (27½) inches over preceding one. Each sheet shall be nailed with one (1) inch barbed roofing nails through flat tin discs, nine and one-half (9½) inches from the upper edge and nails shall be spaced not more than one (1) foot apart.

Third—Mop back on each sheet for a distance of twenty-five and one-half (25½) inches with BARRETT Steep Roofing Pitch. (Balance of paragraph remains the same.)

GENERAL—Change "eighty (80)" to "sixty (60)" pounds of Pitch. Change "period of Twenty (20)" to "period of fifteen (15)" years.



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15 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 4-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, constructed with S.I.S. Roofing and laid in accordance with the Barrett specification (for use over boards on steep surfaces), by a roofing contractor approved by Barrett. Roofing contractor shall furnish Barrett's Surety Bond Guaranty for fifteen (15) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—The roof deck shall be of seasoned lumber, smooth and free from loose boards, large cracks or knot holes, and free from loose material.

APPLICATION OF ROOFING—Note—The S. I. S. Roofing shall be cut in strips twelve (12) to eighteen (18) feet in length and shall be stacked flat in piles at least twenty-four (24) hours before using.

First—Lay one thickness of sheathing paper or unsaturated felt weighing not less than 5 lbs. per 100 sq. ft. lapping the sheets at least one inch.

Second—(For cold application—Barrett S. I. S. Cement)—Over the entire surface lay two (2) plies of BARRETT No. 15 Asphalt Felt at right angles to the incline of the roof, lapping each sheet nineteen (19) inches over preceding one. Each sheet shall be nailed two (2) inches from the upper edge with barbed roofing nails, through flat tin discs spacing the nails not more than eighteen (18) inches apart.

Second—(For hot application—Barrett ANCHOR Roofing Asphalt)—Over the entire surface lay two (2) plies of Barrett "SPECIFICATION" Felt or No. 15 Asphalt Felt at right angles to the incline of the roof, lapping each sheet nineteen (19) inches over preceding one. Each sheet shall be nailed two (2) inches from the upper edge with barbed roofing nails, through flat tin discs spacing the nails not more than eighteen (18) inches apart.

Third—Coat back on sheet for a distance of seventeen (17) inches with Barrett S. I. S. Cement or ANCHOR Roofing Asphalt. The Felt shall be firmly embedded into the coatings as applied. Care shall be taken that the coatings are even with lower edge of each overlying sheet, and that the finished Felt surface is free from drippage.

Fourth—Over the entire surface spread a uniform coating of Barrett S. I. S. Cement or ANCHOR Roofing Asphalt, into which shall be immediately rolled Barrett S. I. S. Roofing laid at right angles to the incline of the roof, lapping the sheets the full width of the nineteen (19) inch selvage. All sheets of Barrett S. I. S. Roofing shall be securely fastened in place with a double course of one (1) inch barbed roofing nails driven through flat tin discs, and placed along the selvage side of the sheet. Nailing courses should be staggered and nails spaced not more than twelve (12) inches apart. The lower nailing course shall be held back two (2) inches from the mineral surfacing.

(At the option of Barrett's inspector, where inclines exceed 4 inches to the foot, S. I. S. Roofing may be laid vertically or approximately parallel with the slope of the roof.)

Fifth—Spread over the entire surface of the nineteen (19) inch selvage a uniform coating of Barrett S. I. S. Cement or ANCHOR Roofing Asphalt into which shall be immediately rolled the following sheet of S. I. S. Roofing.

Sixth—All end laps shall be over-lapped at least six (6) inches. The underlying selvage portion of each end lap shall be nailed with four (4) nails through flat tin discs spaced four (4) inches apart starting one (1) inch from the lower edge of selvage. The six (6) inch lap shall be coated with Barrett ANCHOR Roofing Asphalt or S. I. S. Cement and the overlapping sheet thoroughly pressed down.

GENERAL—Care shall be taken during application that felt and S. I. S. Roofing are laid without wrinkles or buckles. Not less than thirty (30) pounds of ANCHOR Asphalt or two (2) gallons of S. I. S. Cement per coating shall be used for each one hundred (100) square feet of completed roofing.

Where steep roofs join flat roofs, the roofing on the flat surfaces shall be carried up the inclined surfaces not less than twenty-four (24) inches before the application of the steep roofing.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of fifteen (15) years from date of completion in accordance with Note No. 1.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs in the United States and Canada, where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification, and subject to Barrett inspection and approval under the following conditions:

(a) Where both flat and steep areas are involved on a single job, the steep roof area shall be roofed in conjunction with the flat roof area.

(b) That the flat roof area shall be covered with a Barrett Bonded Roof.

10 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 3-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, constructed with S.I.S. Roofing and laid in accordance with the Barrett specification (for use over boards on steep surfaces), by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for ten (10) years from date of completion, in accordance with Note No. 1 of said specification.

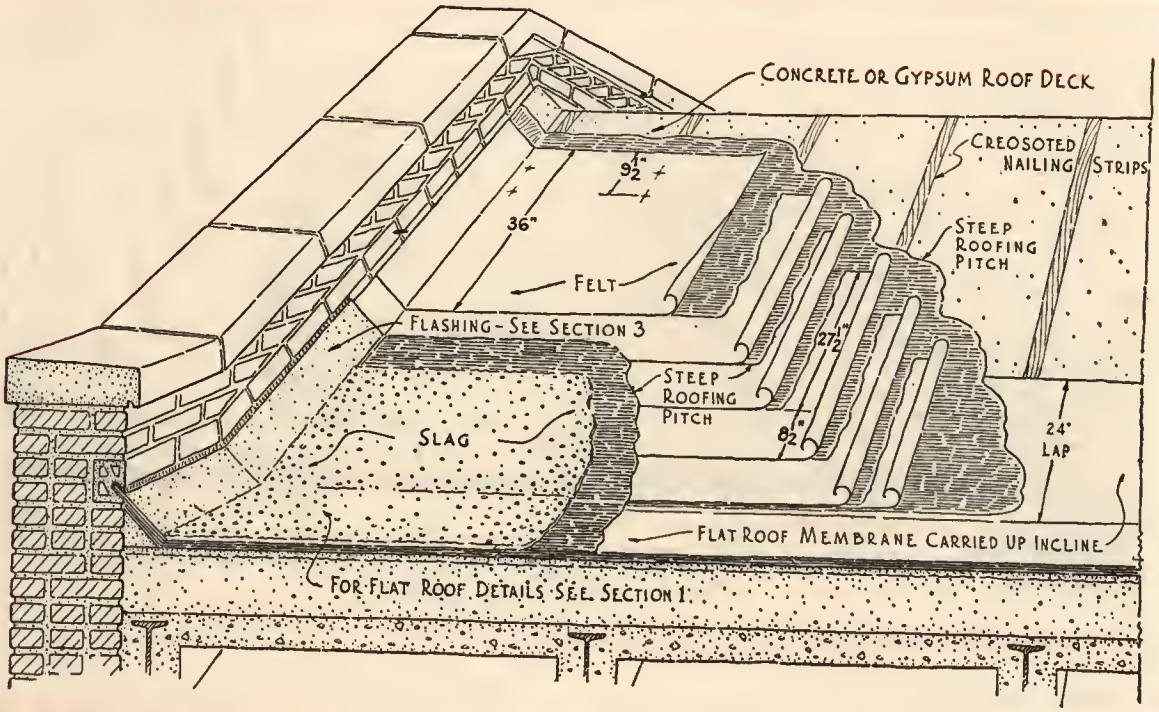
COMPLETE SPECIFICATIONS:

Exactly the same as for fifteen (15) year bond except for the following changes:

APPLICATION OF ROOFING—Omit first, second and third paragraphs and substitute the following: "Over the entire surface lay one (1) ply of BARRETT No. 30 Asphalt Felt as a base sheet lapping each sheet four (4) inches over preceding one and nailing along lapped edge with barbed roofing nails through flat tin discs spacing the nails not more than eighteen (18) inches apart."

GENERAL—Change "period of fifteen (15)" to "period of ten (10)" years.

POURED CONCRETE or POURED GYPSUM
Inclines over 2" and not exceeding 4" to 1'-0"



20 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 4-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, laid in accordance with the Barrett specification (for use over poured concrete or poured gypsum on steep surfaces) by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for twenty (20) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—The roof deck shall be smooth, firm, dry and free from loose material. The concrete or gypsum shall permit of nailing, or creosoted wooden nailing strips shall be provided. Where nailing strips are provided, they shall be laid parallel with the incline of the roof and shall be spaced not more than three (3) feet apart.

APPLICATION OF ROOFING—First—Where roof deck is of **poured concrete,** coat uniformly with BARRETT Steep Roofing Pitch.

Where roof deck is of **poured gypsum,** strip mop with continuous moppings of BARRETT Steep Roofing Pitch two (2) feet wide with six (6) inch spacing between moppings.

Second—Over the entire surface lay four (4) plies of Barrett "SPECIFICATION" Felt at right angles to incline of the roof, lapping each sheet twenty-seven and one-half (27½) inches over preceding one. Each sheet shall be nailed with one (1) inch nails through flat tin discs, nine and one-half (9½) inches from the upper edge, and nails shall be spaced not more than one (1) foot apart. Where nailing strips are used, Felt shall be nailed with two (2) nails through flat tin discs (at each nailing strip) placed seven and one-half (7½) inches and nine and one-half (9½) inches respectively from upper edge of each sheet.

Third—Mop back on each sheet the full distance of the twenty-seven and one-half (27½) inch lap with BARRETT Steep Roofing Pitch. The Felt shall follow and shall be firmly embedded into the hot moppings as applied. Care shall be taken that pitch moppings are even with lower edge of each overlying sheet and that the finished Felt surface is clean and free from Pitch drippage.

Fourth—Over the entire surface apply a uniform coating of BARRETT Steep Roofing Pitch, into which, while hot, firmly embed not less than two hundred and seventy-five (275) pounds of slag for each one hundred (100) square feet of finished roofing. The slag shall be from three-sixteenths ($\frac{3}{16}$) to one-half (½) inch in size, shall be dry and free from dirt, and shall be embedded into the surface mopping immediately. If roofing is applied during cool weather, or slag is damp, slag shall be heated and dried, so that it is warm when applied to the roof. The slag surfacing shall be continuous, and shall cover and be firmly embedded in the surface coating.

GENERAL—Care shall be taken during application that felt is laid without wrinkles or buckles. Not less than one hundred (100) pounds of Pitch shall be used for constructing the membrane and not less than sixty (60) pounds of Pitch shall be used for embedding the slag in constructing each one hundred (100) square feet of completed roof.

Note: BARRETT Steep Roof Pitch shall be heated in tubeless kettles, or kettles with tubes equipped with a thermostatic control unit.

The Pitch shall not be heated above 400° Fahrenheit and shall be applied to the roof between 350° and 375° F.

Where steep roofs join flat roofs, the roofing on the flat surfaces shall be carried up the inclined surfaces not less than twenty-four (24) inches before the application of the Steep Roofing.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of twenty (20) years from date of completion, see Note No. 1.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs in the United States and Canada, where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification, and subject to Barrett inspection and approval under the following conditions:

(a) That the steep roof area be roofed in conjunction with flat roof area.
(b) That the flat roof area shall be covered with a Barrett Bonded Roof.

15 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 3-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, laid in accordance with the Barrett specification, for use over poured concrete or poured gypsum on steep surfaces by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for fifteen (15) years from date of completion, in accordance with Note No. 1 of said specification.

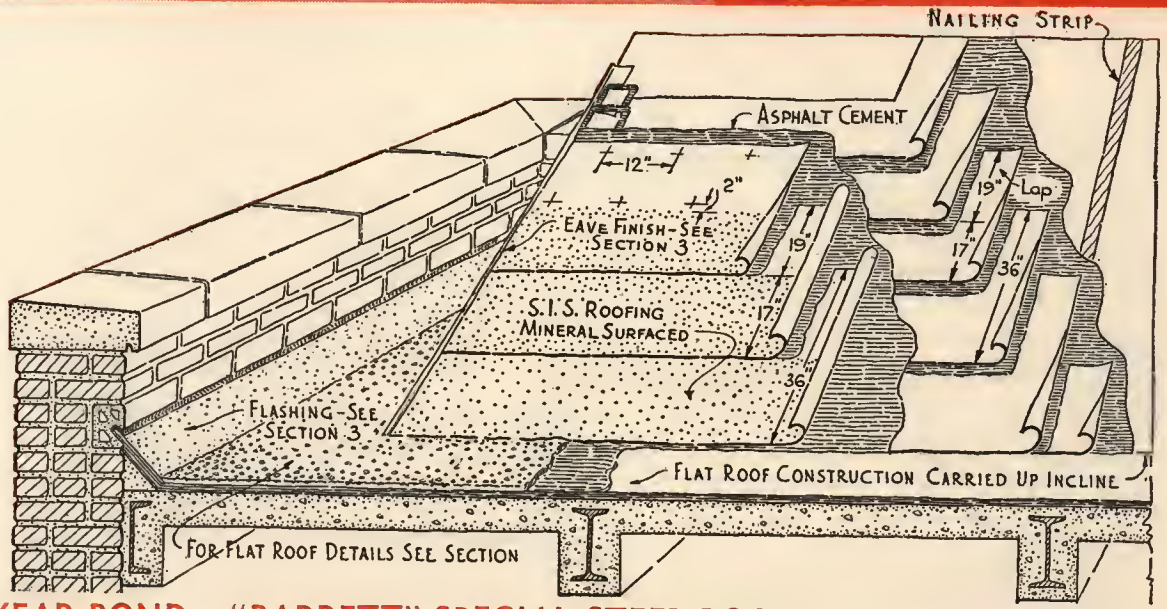
COMPLETE SPECIFICATIONS:

Same as for twenty (20) year bond except for following changes:

APPLICATION OF ROOFING—Second—Over the entire surface lay three (3) plies of Barrett "SPECIFICATION" Felt at right angles to the incline of the roof, lapping each sheet twenty-four and two-thirds (24 2/3) inches over preceding one. Balance of paragraph remains the same.

Third—Mop back on each sheet the full distance of the twenty-four and two-thirds (24 2/3) inch lap with BARRETT Steep Roofing Pitch. (Balance of paragraph remains the same.)

GENERAL—Change "one hundred (100)" to "eighty (80)" pounds of Pitch. Change "period of twenty (20)" to "period of fifteen (15)" years.



15 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 4-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, constructed with S.I.S. Roofing laid in accordance with the Barrett specification (for use over poured concrete or poured gypsum) by a roofing contractor approved by Barrett. Roofing contractor shall furnish Barrett's Surety Bond Guaranty for fifteen (15) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—The roof deck shall be smooth, firm, dry and free from loose material. The concrete or gypsum shall permit of nailing, or creosoted wooden nailing strips shall be provided. If nailing strips are provided, they shall be laid parallel with the incline of the roof and shall be spaced not more than three (3) feet apart.

APPLICATION OF ROOFING—Note—The S. I. S. Roofing shall be cut in strips twelve (12) to eighteen (18) feet in length and shall be stacked flat in piles at least twenty-four (24) hours before using.

First—The surface of the roof deck shall be given a priming coat of Barrett CRYSTAL Asphalt Primer. The priming coat shall be allowed to dry for not less than six (6) hours before the application of the roofing.

Second—Coat the entire surface uniformly with Barrett ANCHOR Roofing Asphalt or S. I. S. Cement.

Note—On poured gypsum decks prime coat and first application of S.I.S. Cement or mopping of asphalt shall be strip mopped with continuous moppings two (2) feet wide with six (6) inch spacing between moppings.

Third—(For cold application—Barrett S. I. S. Cement)—Over the entire surface lay two (2) plies of BARRETT No. 15 Asphalt Felt at right angles to the incline of the roof, lapping each sheet nineteen (19) inches over preceding one, coating with S. I. S. Cement the full nineteen inch (19") lap on each sheet so that in no place shall felt touch felt. Each sheet shall be nailed two (2) inches from the upper edge with barbed roofing nails, through flat tin discs, spacing the nails not more than eighteen (18) inches apart.

Third—(For hot application—Barrett ANCHOR Roofing Asphalt)—Over the entire surface lay two (2) plies of Barrett "SPECIFICATION" Felt or No. 15 Asphalt Felt at right angles to the incline of the roof, lapping each sheet nineteen (19) inches over preceding one, mopping with ANCHOR Roofing Asphalt the full nineteen inch (19") lap on each sheet so that in no place shall felt touch felt. Each sheet shall be nailed two (2) inches from the upper edge with barbed roofing nails, through flat tin discs, spacing the nails not more than eighteen (18) inches apart.

Fourth—Over the entire surface spread a uniform coating of Barrett S. I. S. Cement or ANCHOR Roofing Asphalt, into which shall be immediately rolled Barrett S. I. S. Roofing laid at right angles to incline of roof, lapping the sheets the full width of the nineteen (19) inch selvage. All sheets of S. I. S. Roofing shall be securely fastened in place with a double course of one (1) inch barbed roofing nails driven through flat tin discs, and placed along the selvage side of sheet. Nailing courses should be staggered and nails spaced not more than twelve (12) inches apart. Lower nailing course shall be held back two (2) inches from the mineral surfacing.

(At the option of Barrett's inspector, where inclines exceed 4 inches to the foot, S. I. S. Roofing may be laid vertically or approximately parallel with the slope of the roof.)

Fifth—Spread over the entire surface of the nineteen (19) inch selvage, a uniform coating of Barrett S. I. S. Cement or ANCHOR Roofing Asphalt into which shall be immediately rolled the following sheet of S. I. S. Roofing.

Sixth—All end laps shall be over-lapped at least six (6) inches. The underlying selvage portion of each end lap shall be nailed along end of sheet with four (4) nails through flat tin discs spaced evenly. The six (6) inch laps shall be coated with Barrett ANCHOR Roofing Asphalt or S. I. S. Cement and the overlapping sheet pressed down.

GENERAL—Care shall be taken during application that felt and S. I. S. Roofing are laid without wrinkles or buckles. Not less than thirty (30) pounds of ANCHOR Asphalt or two (2) gallons of S. I. S. Cement per coating shall be used for every one hundred (100) square feet of completed roofing. Where steep roofs join flat roofs, the roofing on the flat surfaces shall be carried up the inclined surfaces not less than twenty-four (24) inches before the application of the steep roofing.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of fifteen (15) years from date of completion.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs in the United States and Canada, where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification, and subject to Barrett inspection and approval under the following conditions:

(a) Where both flat and steep areas are involved on a single job, the steep roof area shall be roofed in conjunction with the flat roof area.

(b) That the flat roof area shall be covered with a Barrett Bonded Roof.

10 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 3-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, constructed with S.I.S. Roofing laid in accordance with the Barrett specification (for use over poured concrete or poured gypsum) by a roofing contractor approved by Barrett. Roofing contractor shall furnish Barrett's Surety Bond Guaranty for ten (10) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

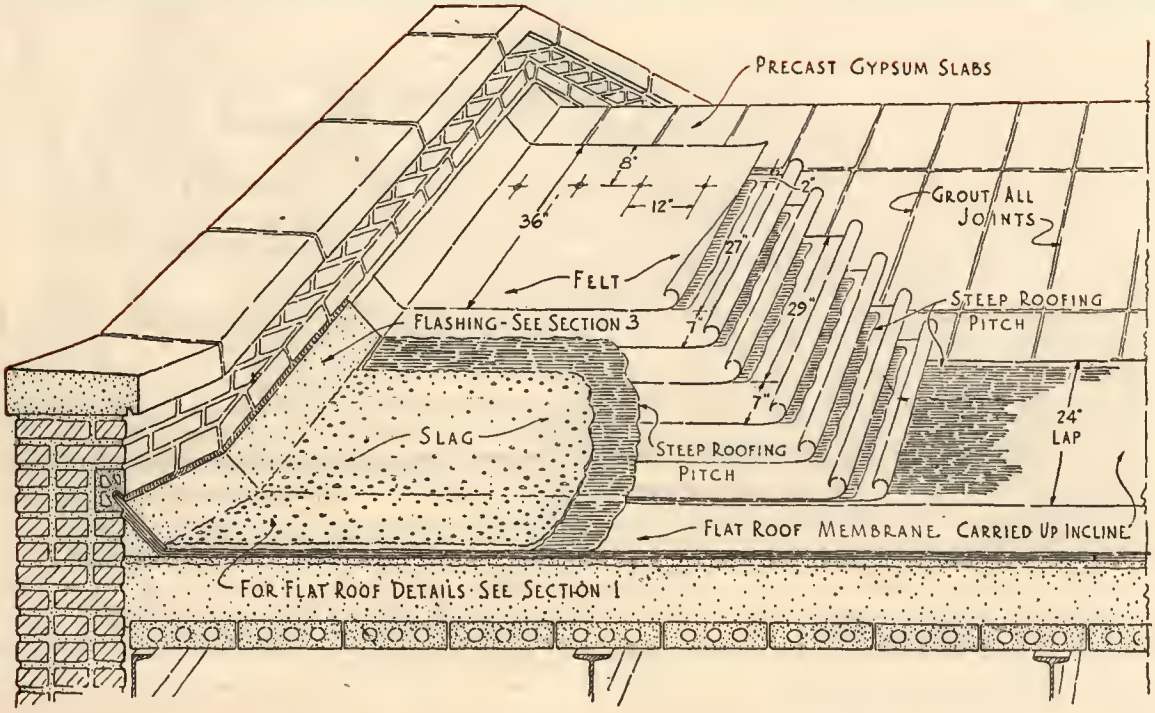
Same as for fifteen (15) year bond except for following changes:

APPLICATION OF ROOFING—Omit second and third paragraphs and replace with the following:

Second—Over the roof deck spread with a mop a uniform coating of Barrett ANCHOR Asphalt or S. I. S. Cement, into which, while hot, immediately embed one (1) ply of BARRETT No. 15 Asphalt Felt, laid at right angles to the incline of the roof, lapping each sheet six (6) inches over preceding one. The six (6) inch overlap shall be thoroughly cemented together with Barrett ANCHOR Asphalt or S. I. S. Cement. The Felt shall be nailed two (2) inches from the lower edge of each sheet, with barbed roofing nails through flat tin discs, spaced not more than eighteen (18) inches apart.

GENERAL—Change "period of fifteen (15)" to "period of ten (10)" years.

PRECAST CONCRETE, PRECAST GYPSUM SLABS or METAL BOUND GYPSUM PLANK
Inclines over 2" and not exceeding 4" to 1'-0"



20 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 5-PLY

For Precast Concrete Slab Decks, provision shall be made for Nailing Strips set parallel with incline of roof and spaced not more than three (3) feet apart.

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, laid in accordance with the Barrett specification (for use over precast concrete, precast gypsum slabs or metal bound gypsum plank over steep surfaces) by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for twenty (20) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—All joints between precast gypsum or precast concrete slabs shall be fully grouted. The roof deck shall be smooth, firm, dry and free from loose material.

APPLICATION OF ROOFING—First—Over the entire surface lay five (5) plies of Barrett "SPECIFICATION" Tarred Felt at right angles to the incline of the roof, lapping each sheet twenty-nine (29) inches over preceding one. Each sheet shall be nailed with one and one-half (1½) inch barbed roofing nails, through flat tin discs, eight (8) inches from the upper edge, nails to be spaced not more than one (1) foot apart.

Second—Mop back on each sheet for a distance of twenty-seven (27) inches with BARRETT Steep Roofing Pitch. The Felt shall follow and shall be firmly embedded into the hot moppings as applied. Care shall be taken that pitch moppings are even with lower edge of each overlying sheet, and that the finished Felt surface shall be free of drippage.

Third—Over the entire surface apply a uniform coating of BARRETT Steep Roofing Pitch, into which, while hot, firmly embed not less than two hundred and seventy-five (275) pounds of slag for each one hundred (100) square feet of finished roofing. The slag shall be from three-sixteenths ($\frac{3}{16}$) to one-half (½) inch in size, shall be dry and free from dirt, and shall be embedded into the surface mopping immediately. If roofing is applied during cool weather, or slag is damp, slag shall be heated and dried, so that it is warm when applied to the roof. The slag surfacing shall be continuous, and shall cover and shall be firmly embedded into the surface coating.

GENERAL—Care shall be taken during application that felt is laid without wrinkles or buckles. Not less than eighty (80) pounds of Pitch shall be used for constructing the membrane, and not less than sixty (60) pounds of Pitch shall be used for embedding the slag in constructing each one hundred (100) square feet of completed roof.

Note: BARRETT Steep Roof Pitch shall be heated in tubeless kettles, or kettles with tubes equipped with a thermostatic control unit.

The Pitch shall not be heated above 400° Fahrenheit and shall be applied to the roof between 350° and 375° F.

Where steep roofs join flat roofs, the roofing on the flat surfaces shall be carried up the inclined surfaces, not less than twenty-four (24) inches before the application of the steep roofing.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of twenty (20) years from date of completion, see Note No. 1.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs in the United States, where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification, and subject to Barrett inspection and approval under the following conditions:

(a) That the steep roof area shall be roofed in conjunction with the flat roof area.

(b) That the flat roof area shall be covered with a Barrett Bonded Roof.

15 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 4-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, laid in accordance with the Barrett specification for use over precast concrete, precast gypsum or metal bound gypsum plank over steep surfaces, by a roofing contractor approved by Barrett. The roofing contractor shall furnish Barrett's Surety Bond Guaranty for fifteen (15) years from the date of completion, in accordance with Note No. 1 of said specification.

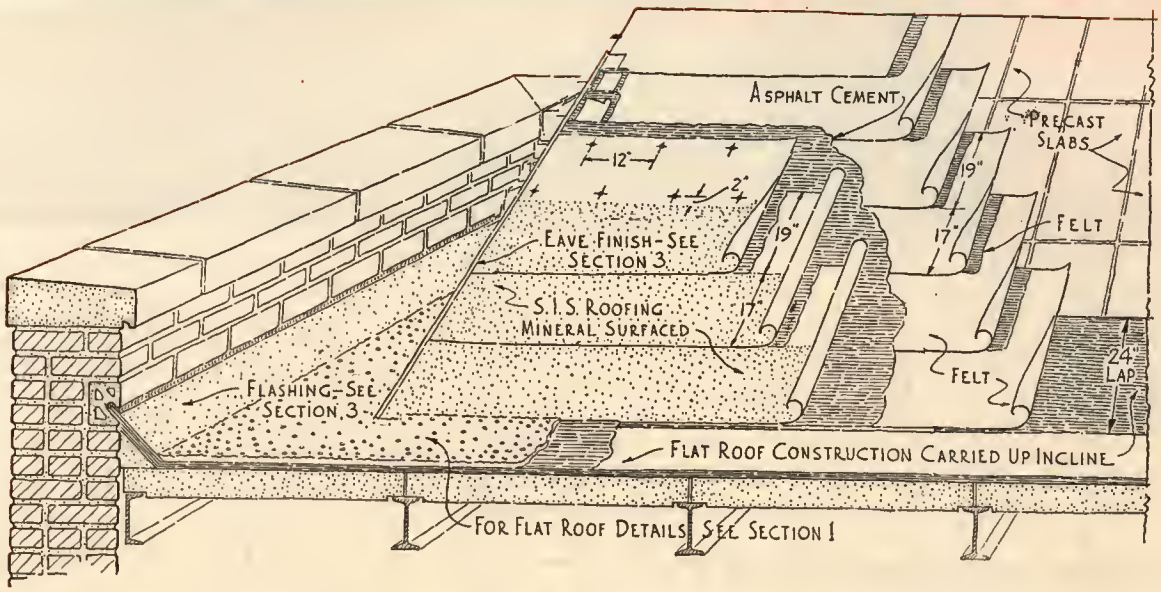
COMPLETE SPECIFICATIONS:

Same as for twenty (20) year bond except for the following changes:

APPLICATION OF ROOFING—First—Over the entire surface lay four (4) plies of Barrett "SPECIFICATION" Felt at right angles to the incline of the roof lapping each sheet twenty-seven and one-half (27½) inches over preceding one. Each sheet shall be nailed with one (1) inch barbed roofing nails through flat tin discs, nine and one-half (9½) inches from the upper edge and nails shall be spaced not more than one (1) foot apart.

Second—Mop back on each sheet for a distance of twenty-five and one-half (25½) inches with BARRETT Steep Roofing Pitch. (Balance of paragraph remains the same.)

GENERAL—Change "eighty (80)" to "sixty (60)" pounds of Pitch. Change "period of twenty (20)" to "period of fifteen (15)" years.



15 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 4-PLY

For Precast Concrete Slab Decks, provision shall be made for Nailing Strips set parallel with incline of roof and spaced not more than three (3) feet apart.

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, constructed with S.I.S. Roofing laid in accordance with the Barrett specification (for use over precast concrete, precast gypsum slabs or metal bound gypsum plank), by a roofing contractor approved by Barrett. Roofing contractor shall furnish Barrett's Surety Bond Guaranty for fifteen (15) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

PREPARATION OF DECK—All joints between precast gypsum or precast concrete slabs shall be properly grouted. The roof deck shall be smooth, firm, dry and free from loose material. The gypsum or concrete slabs shall permit of nailing or creosoted wooden nailing strips shall be provided. If nailing strips are provided, they shall be parallel with the incline of the roof and spaced not more than three (3) feet apart.

APPLICATION OF ROOFING—Note—The S. I. S. Roofing shall be cut in strips twelve (12) to eighteen (18) feet in length and shall be stacked flat in piles at least twenty-four (24) hours before using.

First—(For cold application—Barrett S. I. S. Cement)—Over the entire surface lay two (2) plies of BARRETT No. 15 Asphalt Felt at right angles to the incline of the roof, lapping each sheet nineteen (19) inches over preceding one. Each sheet shall be nailed two (2) inches from the upper edge with barbed roofing nails, through flat tin discs spacing the nails not more than eighteen (18) inches apart.

First—(For hot application—Barrett ANCHOR Roofing Asphalt)—Over the entire surface lay two (2) plies of Barrett "SPECIFICATION" Felt or No. 15 Asphalt Felt at right angles to the incline of the roof, lapping each sheet nineteen (19) inches over preceding one. Each sheet shall be nailed two (2) inches from the upper edge with barbed roofing nails, through flat tin discs spacing the nails not more than eighteen (18) inches apart.

Second—Coat back on each sheet for a distance of seventeen (17) inches with Barrett S. I. S. Cement or ANCHOR Roofing Asphalt. The Felt shall be firmly embedded into the coating as applied. The coatings should be even with lower edge of each overlying sheet, and the finished Felt surface free from drippage.

Third—Over the entire surface spread a uniform coating of Barrett S. I. S. Cement or ANCHOR Roofing Asphalt, into which shall be fmmediately rolled Barrett S. I. S. Roofing laid at right angles to the incline of the roof, lapping the sheets the full width of the nineteen (19) inch selvage. All sheets of Barrett S. I. S. Roofing shall be securely fastened in place with a double course of one and one-half (1½) inch barbed roofing nails driven through flat tin discs, and placed along the selvage side of the sheet. Nailing courses should be staggered and nails spaced not more than twelve (12) inches apart. The lower nailing course shall be held back two (2) inches from the mineral surfacing.

(At the option of Barrett's inspector, where inclines exceed 4 inches to the foot, S. I. S. Roofing may be laid vertically or approximately parallel with the slope of the roof.)

Fourth—Spread over the entire surface of the nineteen (19) inch selvage a uniform coating of Barrett S. I. S. Cement or ANCHOR Roofing Asphalt into which shall be immediately rolled the following sheet of Barrett S. I. S. Roofing.

Fifth—All end laps shall be over-lapped at least six (6) inches. The underlying selvage portion of each end lap shall be nailed with four (4) nails through flat tin discs spaced four (4) inches apart starting one (1) inch from the lower edge of selvage. The six (6) inch lap shall be coated with Barrett ANCHOR Roofing Asphalt or S. I. S. cement and the over-lapping sheet thoroughly pressed down.

GENERAL—Care shall be taken during application that felt and S. I. S. Roofing are laid without wrinkles or buckles. Not less than thirty (30) pounds of ANCHOR Asphalt or two (2) gallons of S. I. S. Cement per coating shall be used for each one hundred (100) square feet of completed roofing.

Where steep roofs join flat roofs, the roofing on the flat surfaces shall be carried up the inclined surfaces not less than twenty-four (24) inches before the application of the steep roofing.

The roof shall be applied by a roofing contractor approved by Barrett. He shall furnish Barrett's Surety Bond Guaranty issued by the Continental Casualty Company of Chicago, covering a period of fifteen (15) years from date of completion.

Note No. 1—Barrett will furnish its Guaranty Bond on jobs in the United States and Canada, where its inspection service is available, provided the roof is applied by a roofing contractor approved by Barrett in strict accordance with the above specification, and subject to Barrett inspection and approval under the following conditions:

(a) Where both flat and steep areas are involved in a single job, the steep area shall be roofed in conjunction with the flat roof area.

(b) That the flat roof shall be covered with a Barrett Bonded Roof.

10 YEAR BOND—"BARRETT" SPECIAL STEEP ROOF — 3-PLY

CONDENSED SPECIFICATIONS:

ROOFING—Shall be a BARRETT Special Steep Roof, constructed with S.I.S. Roofing laid in accordance with the Barrett specification (for use over boards on steep surfaces), by a roofing contractor approved by Barrett. Roofing contractor shall furnish Barrett's Surety Bond Guaranty for ten (10) years from date of completion, in accordance with Note No. 1 of said specification.

COMPLETE SPECIFICATIONS:

Same as for fifteen (15) year bond except for the following changes:

APPLICATION OF ROOFING—Omit first and second paragraphs and substitute the following: "Over the entire surface lay one (1) ply of BARRETT No. 30 Asphalt Felt as a base sheet lapping each sheet four (4) inches over preceding one and nailing along lapped edge with barbed roofing nails through flat tin discs spacing the nails not more than eighteen (18) inches apart."

GENERAL—Change "period of fifteen (15)" to "period of ten (10)" years.

ROOF CONSTRUCTION AND DRAINAGE DATA—Flat Roofs, Steep Roofs
NAILING REQUIREMENTS

RISE OR INCLINE OF ROOFS PER FOOT; INCREASED AREA PER SQUARE FOOT OF STEEP ROOFS OVER FLAT ROOFS

Classification	Incline			Inclined Area Per Square Foot Horizontal Area	Percentage Increase In Area Over Flat Roof
	Inch Per Foot Horizontal	Angle With Horizontal	Fractional Factor		
Flat Roofs	⅛	0°-36′		1.000	0.0
	¼	1°-12′		1.000	0.0
	⅜	1°-47′		1.000	0.0
	½	2°-23′	1/48	1.001	0.1
	⅝	2°-59′		1.001	0.1
	¾	3°-35′	1/32	1.002	0.2
	1	4°-46′	1/24	1.003	0.3
	1⅛	5°-21′		1.004	0.4
	1¼	5°-57′		1.005	0.5
	1½	7°-8′	1/16	1.008	0.8
	1¾	8°-18′		1.011	1.1
	2	9°-28′	1/12	1.014	1.4
Steep Roofs	2¼	10°-37′		1.017	1.7
	2½	11°-46′		1.021	2.1
	2¾	12°-54′		1.026	2.6
	3	14°-2′	1/8	1.031	3.1
	3¼	15°-9′		1.036	3.6
	3½	16°-16′		1.042	4.2
	3¾	17°-21′		1.048	4.8
	4	18°-26′	1/6	1.054	5.4
	4¼	19°-30′		1.061	6.1
	4½	20°-34′		1.068	6.8
	5	22°-37′		1.083	8.3
	6	26°-34′	1/4	1.118	11.6
	7	30°-16′		1.158	15.8
	8	33°-42′	1/3	1.202	20.2
	9	36°-52′		1.250	25.0
	10	39°-48′		1.302	30.2
	11	42°-31′		1.356	35.6
	12	45°-0′	1/2	1.414	41.4
Extra Steep Roofs	14	49°-24′		1.537	53.7
	16	53°-8′		1.667	66.7
	18	56°-19′		1.803	80.3
	20	59°-2′		1.943	94.3
	22	61°-23′		2.088	108.8
	24	63°-26′	1	2.235	123.5

DRAINAGE DATA LEADER PIPE CAPACITIES

ROOF AREA DRAINED BY ONE LEADER PIPE

Pipe Size (Ins.)	Pipe Area (Sq. Ins.)	Roof Area Drained (Sq. Ft.)
3	7.06	1,060
4	12.56	1,885
5	19.63	2,945
6	28.27	4,240
8	50.26	7,540

Table based on 150 square feet of roof surface drained per square inch of Leader Pipe area and on a maximum estimated rainfall intensity of 8 inches per hour. 150 square feet per square inch of Leader Pipe area is an average value for the United States and Canada; for localities of unusually high or low rainfall intensities, last column in table should be modified.

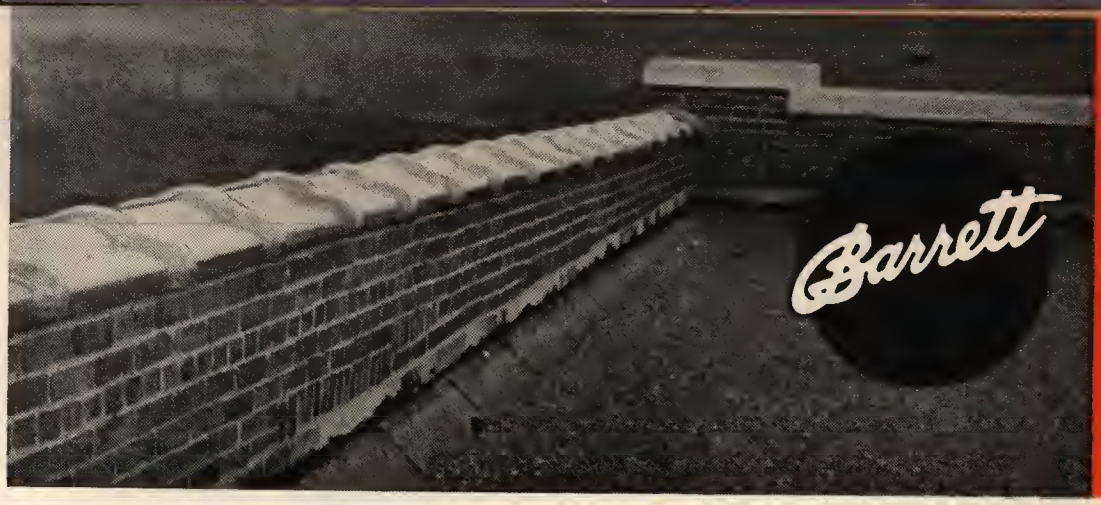
NAILING REQUIREMENTS

Nailing should preferably be done with seven-eighths (⅞) inch or one (1) inch roofing nails driven through flat tin discs one (1) inch or more in diameter. Standard large-headed roofing nails, the same as are generally packed with prepared roofing, may be used if flat tin discs and ordinary roofing nails are not available, but the latter are desirable.

In the application of felts, nails are to be spaced approximately 2" from the upper edge of each sheet, and each ply of felt nailed as follows, unless weather conditions require more frequent nailing:

Incline	Nail Spacing
Up to ½" per ft.	Not more than 10′ apart
Up to 1" per ft.	Not more than 8′ apart
Up to 1½" per ft.	Not more than 5′ apart
Up to 2" per ft.	Not more than 3′ apart
Up to 4" per ft.	Not more than 2′ apart
Over 4" per ft.	Not more than 1′ apart

For wood decks on such structures as freight houses, warehouses, ice houses or roundhouses, where under side of the roof deck is not to be sheathed or plastered and is subjected to wind pressure due to windows or doors which may be open during high winds, and on all parts of roof decks extending out beyond the bearing walls, the first two plies of felt shall be nailed every 2′ along the lower edge of each sheet, and the remaining plies shall be nailed every 2′, not more than 6" from the upper edge of each sheet.



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THE MOST VULNERABLE PART IN ANY ROOF

Purpose

The prevention of seepage or leaks at masonry walls of the modern building is a serious problem confronting every architect, engineer and builder.

These troubles are frequently traced to faulty flashing construction. Low spots where snow, ice, and rain water concentrate, are usually found along parapet walls, curbs, or other places where flashings are installed. Inadequate or faulty construction at these vital points opens the way to troublesome leaks and costly repairs.

Barrett Bonded Flashings

The Barrett system of flashing is considered a component part of the roof construction. The waterproof membrane is definitely tied in with the parapet wall by means of the flashing block. This part of the roof is reinforced, the added protection actually making it the strongest part of the roof. The flashing is flexible, and permits of movement occasioned by settlement of the deck, or by expansion and contraction in materials.

Eliminates Divided Responsibility

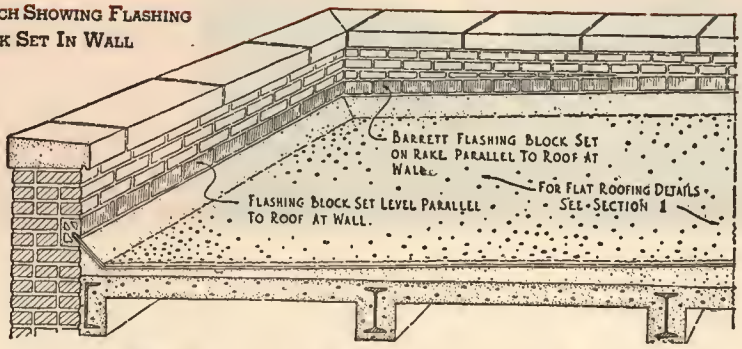
The Barrett system, used in conjunction with Barrett "SPECIFICATION" Roofs, definitely eliminates troublesome flashing leaks at parapets, curbs, chimneys, fire-walls, etc. The responsibility for the complete roof, including flashing construction, rests with the Barrett approved roofer. The flashing is installed by the roofing contractor at the same time he applies the roofing, and its performance is fully covered in the guaranty bond.

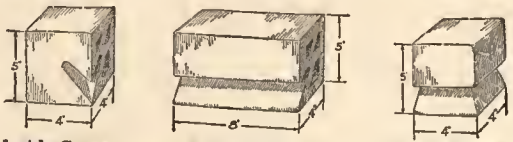
A Good Roof Deserves Good Flashings

Good flashings promote the serviceability of good roofs. The Barrett flashing system, developed after years of practical experience, is a worthy companion to Barrett "SPECIFICATION" Roofs. Time-tried under every conceivable condition, it is accepted generally as a standard type of construction for both flat and steep built-up roofs.

FLASHING BLOCK IN BRICK WALLS

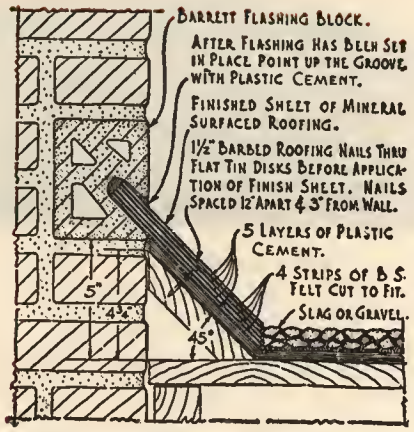
Sketch Showing Flashing Block Set In Wall





Inside Corner | Straight Flashing Block | Outside Corner

Styles of Blocks



Flashing Block Type for Brick Walls

20 YEAR BOND—BARRETT FLASHING FOR BRICK WALLS, TYPE "AA" —— 5-PLY

Note—This flashing shall be installed before gravel, slag, tile or other surfacing material is applied to the roof surface.

APPLICATION OF FLASHING—First—Before applying flashing material, the flashing groove shall be thoroughly cleaned of mortar or other foreign materials.

Second—The Felt and Pitch roofing shall be extended up the face of the cant to the wall line and cut off evenly at that point. The plies of Felt shall be solidly cemented together with Pitch and be free from wrinkles or buckles.

Third—Over the roofing, covering the cant, and up into the full depth of the flashing groove, apply a heavy uniform layer of Barrett Plastic ELASTIGUM Cement into which embed one (1) ply of flashing strip, cut the proper width from a roll of Barrett "SPECIFICATION" Felt. The sheets of the flashing strips shall be lapped one (1) inch and the strips shall extend into the full depth of the flashing groove. This operation shall be repeated until four (4) layers of Plastic ELASTIGUM Cement and four (4) plies of flashing strip have been applied. The fourth flashing strip shall be nailed every twelve (12) inches, three (3) inches from the wall with one and one-half (1½) inch barbed roofing nails through flat tin discs. Each flashing strip shall be set in separately (not folded) and shall break joints with the underlying ply.

Fourth—Over the entire surface of the flashing strips thus laid, apply a uniform trowelled coating of Plastic ELASTIGUM Cement. Care shall be taken so that a liberal amount of cement is placed along the opening of the flashing groove. Into the Plastic ELASTIGUM Cement embed immediately a layer of Barrett EVERLASTIC Mineral Surfaced Roofing of the proper width, extending into the full depth of the groove and down to the roofing. The strips of Mineral Surfaced Roofing shall be cut from across the roll so that the end of each strip shall have a two (2) inch selvage. The two (2) inch selvage shall be coated with Plastic ELASTIGUM Cement and shall be over-lapped by the following sheet of Mineral Surfaced Roofing and thoroughly pressed down. The flashing groove shall then be pointed up with Plastic ELASTIGUM Cement.

Note No. 1—IMPORTANT—No projections such as vent pipes, conductor lines or braces shall be constructed through the flashing cant. All such projections shall be placed through roof deck at a point not less than ten (10) inches from the intersection of cant with roof deck.

Note No. 2—Barrett will furnish its Guaranty Bond on jobs in the United States and Canada where its inspection service is available, provided the flashing is installed in strict accordance with the above specification and subject to Barrett inspection and approval under the following condition: That the flashing shall be installed during the application of a Barrett Bonded Roof.

SPECIFICATION FOR INSTALLATION WITH VARIOUS TYPES OF ROOF DECKS

Where insulation is used and terminates at cant, cant shall be so constructed that it will provide for a vertical offset equal in thickness to the insulation, and the base of the block shall be set five (5) inches above the surface of the insulation.

FOR MASONRY—Barrett Flashing Block shall be built into walls with the base of the block set five (5) inches above and parallel with the finished grade line of the roof at wall.

Blocks shall be laid in true alignment, set in Portland Cement Mortar, and joints shall be properly pointed. All end joints shall be solid mortar joints.

The flashing groove of the blocks shall be thoroughly cleaned of all surplus mortar.

Note—Special blocks are manufactured for use at right angle external and internal wall corners.

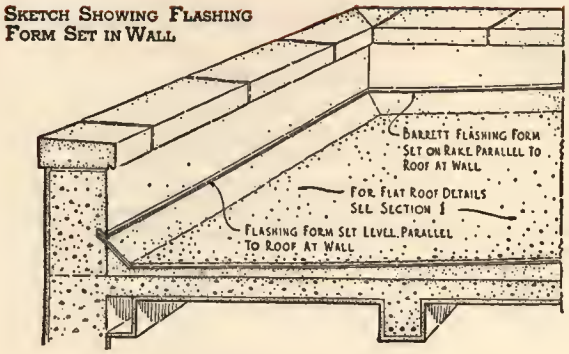
FOR CONCRETE OR GYPSUM ROOF DECK—At angle of roof deck and the walls in which flashing block has been installed, provide a concrete cant **that will permit of nailing,** the upper edge of which shall terminate one-quarter (¼) inch below the flashing groove. The face of the cant shall have an incline of forty-five (45) degrees the same as the flashing groove in the block. The distance from the innermost end of flashing groove to bottom of cant strip shall not exceed ten (10) inches.

FOR CARPENTRY, BOARD ROOF DECK—At angle of roof deck and the walls in which flashing block has been installed, provide a wood cant at least one (1) inch thick, the upper edge of which shall terminate one-quarter (¼) inch below the flashing groove. The face of the cant shall have an incline of forty-five (45) degrees, the same as the flashing groove in the block. The cant shall be securely fastened to the roof deck. The distance from the innermost end of flashing groove to bottom of cant strip shall not exceed ten (10) inches.

15 YEAR BOND—BARRETT FLASHING FOR BRICK WALLS, TYPE "A"——4-PLY

Same as above, except change the last half of paragraph headed "Third" as follows:

This operation shall be repeated until three (3) layers of Plastic ELASTIGUM Cement and three (3) plies of flashing strips have been applied. The third flashing strip shall be nailed every twelve (12) inches, three (3) inches from the wall with one and one-half (1½) inch barbed roofing nails through flat tin discs. Each flashing strip shall be set in separately (not folded) and shall break joints with the underlying ply.



Sketch Showing Flashing Form Set in Wall

Styles of Forms

20 YEAR BOND—BARRETT FLASHING FOR CONCRETE WALLS, TYPE "AA" —— 5-PLY

Note—This flashing shall be installed before gravel, slag, tile or other surfacing material is applied to the roof surface.

APPLICATION OF FLASHING—First—Before applying flashing material, the flashing groove shall be thoroughly cleaned of mortar or other foreign materials.

Second—The Felt and Pitch roofing shall be extended up the face of the cant to the wall line and cut off evenly at that point. The plies of Felt shall be solidly cemented together with Pitch and be free from wrinkles or buckles.

Third—Over the roofing, covering the cant, and up fnto the full depth of the flashfng groove, apply a heavy uniform layer of Barrett Plastic ELASTIGUM Cement into which embed one (1) ply of flashing strip, cut the proper width from a roll of Barrett "SPECIFICATION" Felt. The sheets of the flashing strips shall be lapped one (1) fnch and the strips shall extend fnto the full depth of the flashfng groove. Thfs operation shall be repeated until four (4) layers of Plastic ELASTIGUM Cement and four (4) plies of flashing strips have been applied. The fourth flashing strip shall be nailed every twelve (12) inches, three (3) fnches from the wall with one and one-half (1½) inch barbed roofing nails through flat tin discs. Each flashing strip shall be set in separately (not folded) and shall break joints with the underlying ply.

Fourth—Over the entire surface of the flashing strips thus laid, apply a uniform trowelled coating of Plastic ELASTIGUM Cement. Care shall be taken so that a liberal amount of cement fs placed along the opening of the flashing groove. Into the Plastic ELASTIGUM Cement embed fmmediately a layer of Barrett EVERLASTIC Mineral Surfaced Roofing of the proper width, extending into the full depth of the groove and down to the roofing. The strips of Mfneral Surfaced Roofing shall be cut from across the roll so that the end of each strfp shall have a two (2) fnch selvage. The two (2) inch selvage shall be coated with Plastic ELASTIGUM Cement and shall be over-lapped by the following sheet of Mineral Surfaced Roofing and thoroughly pressed down. The flashing groove shall then be pointed up with Plastic ELASTIGUM Cement.

Note No. 1—IMPORTANT—No projections such as vent pipes, conductor lines or braces shall be constructed through the flashing cant. All such projections shall be placed through roof deck at a point not less than ten (10) inches from the intersection of cant with roof deck.

Note No. 2—Barrett will furnish its Guaranty Bond on jobs in the United States and Canada where its inspection service is available, provided the flashing is installed in strict accordance with the above specification and subject to Barrett inspection and approval under the following condition: That the flashing shall be installed during the application of a Barrett Bonded Roof.

Flashing Form Type for Concrete Walls

SPECIFICATION FOR INSTALLATION WITH CONCRETE ROOF DECKS

FOR CONCRETE—Barrett Flashing Form shall be attached to the insfde of the wall form by means of metal strap brackets (so provided) spaced not more than two (2) feet apart and secured by one (1) fnch smooth wire nails.

Barrett Flashing Form shall be set so that the lower edge of the flashing groove fs five (5) inches above and parallel with the ffnished grade line of the roof at wall.

Where insulation is used, the base of the form shall be set five (5) fnches above the surface of the fnsulation.

Note—Special mitred flashing forms are manufactured for use at right angle external and fnternal wall corners.

At angle of roof deck and the wall in which flashing form has been installed, provide a concrete cant **that will permit of nailing,** the upper edge of which shall terminate one-quarter (¼) inch below the flashing groove. The face of the cant shall have an incline of forty-five (45) degrees the same as the flashing groove in the block. The distance from the innermost end of flashing groove to bottom of cant strip shall not exceed ten (10) fnches.

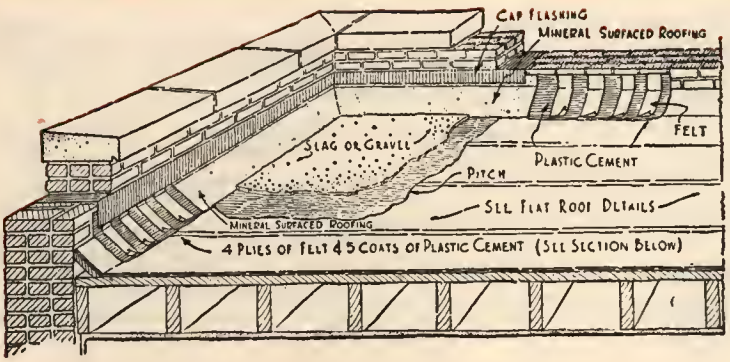
Where insulation is used and terminates at cant, cant shall be so constructed, that it will provide for a vertical offset equal in thickness to the insulation.

15 YEAR BOND—BARRETT FLASHING FOR CONCRETE WALLS, TYPE "A"—4-PLY

Same as above, except change the last half of paragraph headed "Third" as follows:

This operation shall be repeated until three (3) layers of Plastic ELASTIGUM Cement and three (3) plies of flashing strip have been applied. The thfrd flashing strip shall be nailed every twelve (12) inches, three (3) inches from the wall with one and one-half (1½) inch barbed roofing nails through flat tin discs. Each flashing strip shall be set in separately (not folded) and shall break joints with the underlying ply.

ALTERNATE TYPE "AA" AND TYPE "A" FLASHINGS
Bituminous Base and Metal Counter-Flashing Construction



BARRETT BITUMINOUS BASE FLASHINGS WITH METAL COUNTER-FLASHING

SPECIFICATIONS

Note—Flashing shall be installed before gravel, slag, tile or other surfacing material is applied to the roof surface.

BASE FLASHING

TYPE "AA"—The felt and pitch roofing shall be extended up the face of a cant, placed five (5) inches above roof line and extending to the roof deck on an angle of 45°, up to the wall line and cut off evenly at that point. The membrane shall be laid evenly and without wrinkles or buckles.

Over the roofing membrane covering the cant, apply a heavy uniform layer of Barrett Plastic ELASTIGUM Cement into which embed one (1) ply of flashing strips cut the proper width from a roll of Barrett "SPECIFICATION" Felt. The sheets of the flashing strips shall be lapped one (1) inch and the strips shall extend on to the vertical wall for a distance of one (1) inch above the top of the cant.

This operation shall be repeated until four (4) layers of Plastic ELASTIGUM Cement and four (4) plies of flashing strips have been applied, each flashing strip stepped above the preceding strip, and on the wall, so that the last strip is immediately below where the metal counter-flashing enters the wall. Each flashing strip shall be set in separately and shall break joints with the underlying strip. The strips shall then be nailed to the cant, using one and one-half (1½) inch barbed roofing nails through flat tin discs spaced twelve (12) inches on center.

Over the entire surface of the flashing strips thus laid, apply a uniform trowel coat of Plastic ELASTIGUM Cement into which immediately embed a layer of Barrett EVERLASTIC Mineral Surfaced Roofing of the proper width, extending from the base of the cant to immediately below where the metal counter-flashing enters the wall. The Mineral Surfaced Roofing shall be set in place firmly so that there are no buckles or loose sections. The strips of Mineral Surfaced Roofing shall be cut from across the roll so that the end of each strip shall have a two (2) inch selvage. The two (2) inch selvage shall be coated with Plastic ELASTIGUM Cement and shall be overlapped by the following sheet of Mineral Surfaced Roofing and thoroughly pressed down.

The base flashing shall then be nailed on eight (8) inch to twelve (12) inch centers at a point approximately two (2) inches below where the metal counter-flashing enters the wall, or in the mortar joints immediately below the joint into which the counter-flashing is set.

TYPE "A"—Same as Type "AA" above, except change third paragraph as follows:

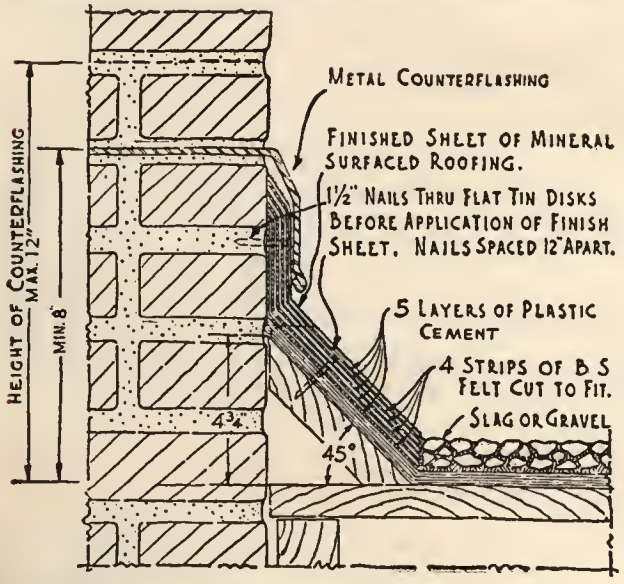
This operation shall be repeated until three (3) layers of Plastic ELASTIGUM Cement and three (3) plies of flashing strips have been applied, each flashing strip stepped above the preceding strip, and on the wall, so that the last strip is immediately below where the metal counter-flashing enters the wall. Each flashing strip shall be set in separately and shall break joints with the underlying strip. The strips shall then be nailed to the cant, using one and one-half (1½) inch barbed roofing nails through flat tin discs spaced twelve (12) inches on center.

METAL COUNTER-FLASHING

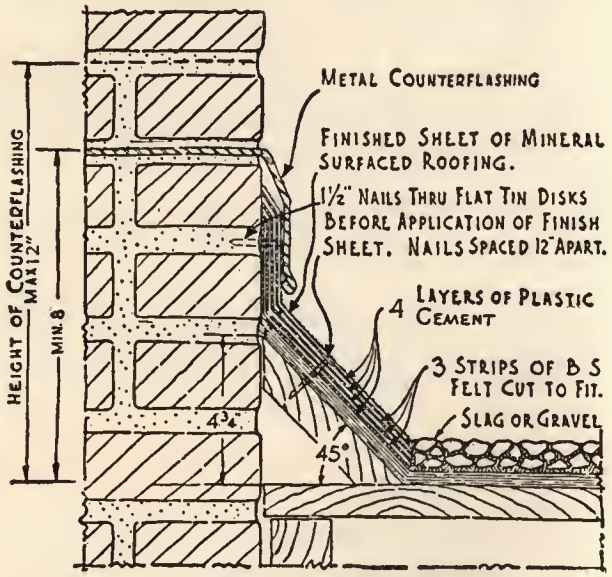
The metal counter-flashing shall overlap the bituminous base flashing to the junction of wall and cant surface, so that all flashing strips and nails are completely counter-flashed with the metal cap.

General—No projections such as vent pipes, conductor lines or braces shall be constructed through the flashing cant. All such projections shall be placed through roof deck at a point not less than ten (10) inches from the intersection of cant with roof deck, and shall be properly flashed.

Note—When at Barrett's option guaranty bonds are issued on these types of construction, such bonds will cover the bituminous base flashing only, exclusive of all metal work or any through wall counter-flashing.

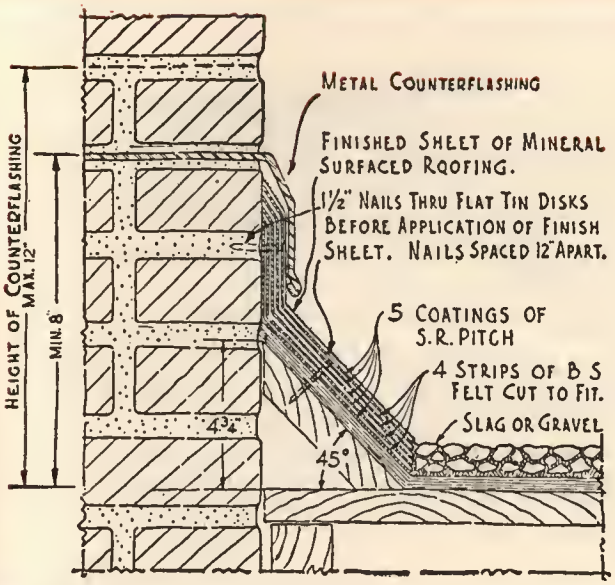


ALTERNATE TYPE "AA" FLASHING

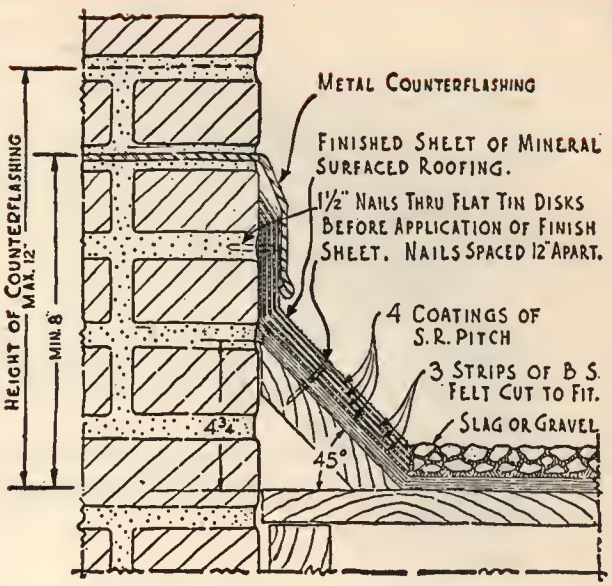


ALTERNATE TYPE "A" FLASHING

For hot application flashing, Steep Roof Pitch may be substituted for Plastic ELASTIGUM Cement as specified above.



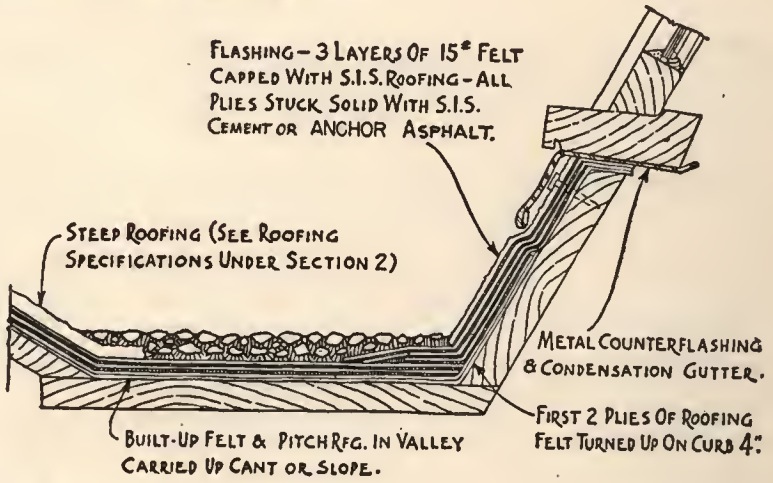
ALTERNATE TYPE BITUMINOUS BASE FLASHING
(FOR TYPE "AA" ROOFS.)

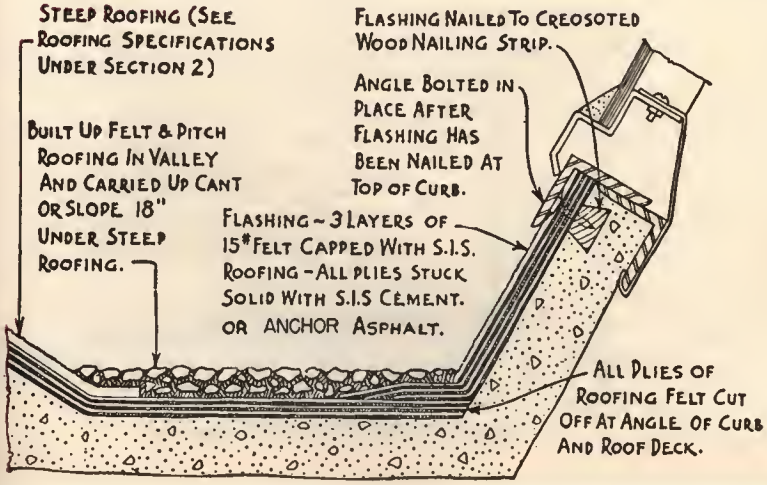


ALTERNATE TYPE BITUMINOUS BASE FLASHING
(FOR TYPE "A" ROOFS.)

FOR SPECIFICATION FORM SEE PAGE 32.

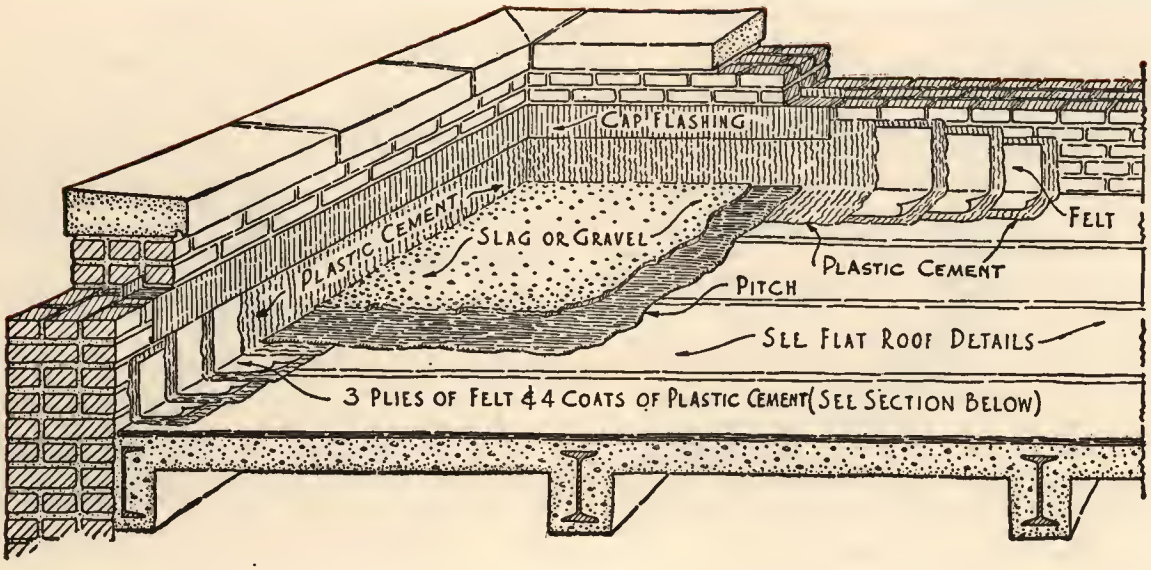
RIGHT—S. I. S. ROOFING FOR FLASHING CONSTRUCTION OVER WOOD CURB OR CANT





LEFT—S. I. S. ROOFING FOR FLASHING CONSTRUCTION OVER CONCRETE CURB OR CANT

BITUMINOUS BASE FLASHINGS
For Brick or Concrete Walls



10 YEAR—BARRETT BITUMINOUS FLASHING FOR BRICK OR CONCRETE WALLS — 3-PLY

Note—If the roofing is laid over a board deck, the first two (2) plies of Felt shall be turned up against perpendicular surfaces at least four (4) inches. If the roofing is laid over a concrete deck, all plies shall be cut off evenly at the angle of the roof deck and parapet walls.

APPLICATION OF FLASHING—First—After all plies of roofing have been laid and preceding the application of the slag or gravel surface, apply a uniform trowelled coating of Barrett Plastic ELASTIGUM Cement for a distance of ten (10) inches up the parapet wall and six (6) inches out on the roofing into which shall be immediately embedded a ten (10) inch strip of BARRETT No. 15 Asphalt Felt extending up the wall six (6) inches and out on the roofing four (4) inches.

Second—This strip shall be coated with Plastic ELASTIGUM Cement. Then follow with a second strip of BARRETT No. 15 Asphalt Felt thirteen (13) inches wide extending eight (8) inches up the wall and five (5) inches out on the roof.

Third—This strip shall be coated with Plastic ELASTIGUM Cement into which embed a third strip of BARRETT No. 15 Asphalt Felt sixteen (16) inches wide, extending ten (10) inches up the wall and six (6) inches out on the roof.

Fourth—This strip shall be coated uniformly with Plastic ELASTIGUM Cement. Care shall be taken so that the top edge of the felt strips shall be pressed firmly against the masonry wall and the Plastic Cement feathered against it.

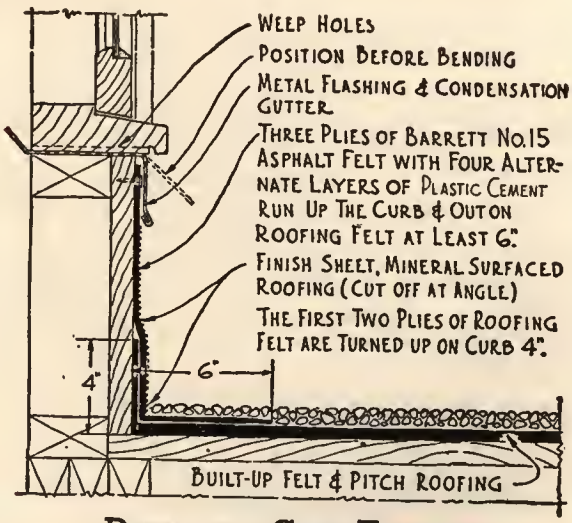
Felt strips shall not exceed ten (10) feet in length and shall be lapped at least one (1) inch and all joints broken so that each is covered by at least two (2) thicknesses of felt.

Where a cant is used, the width of the first sheet of felt installed shall be such that at least four (4) inches shall extend above top of the cant. Each succeeding strip shall follow the proportions, as specified above.

Note No. 1—Barrett will give its ten (10) year guaranty on jobs in the United States and Canada where its inspection service is available, provided the flashing is installed in strict accordance with the above specification and subject to Barrett inspection and approval under the following condition: That the flashing shall be installed during the application of a Barrett Bonded Roof.

Architect's Note—When Barrett's guarantee is issued on this type of construction, such guarantee will cover the bituminous base flashing only, exclusive of all metal work or any through wall counter-flashing. **The use of a metal counter-flashing with this type of installation is optional with Architect and if desired should be covered in specifications.**

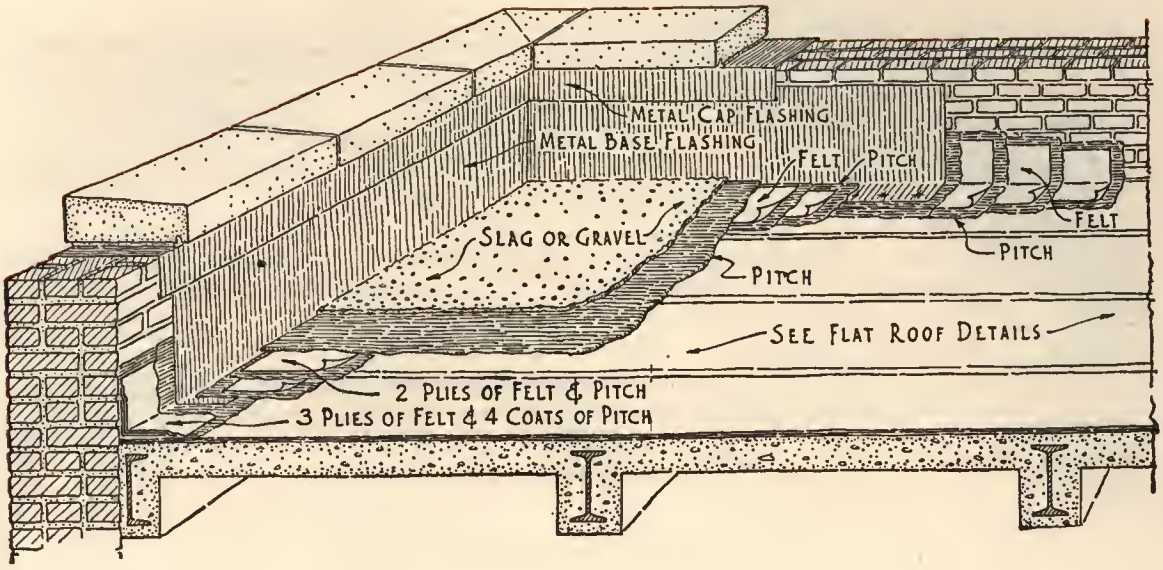
Where metal counter flashing is provided with this type of installation, and where specified, cap sheet of Barrett EVERLASTIC Mineral Surfaced Roofing may be applied after Plastic Cement flashing has been installed in place. Cap sheet shall be cut off at roof line. End laps shall be at least two (2) inches, with under lap well fastened and coated with Plastic ELASTIGUM Cement.



DETAIL FOR CURB FLASHING

METAL CAP AND BASE FLASHING
For Masonry Walls

8a/2



SPECIFICATIONS FOR FLASHINGS

Note—Architect or engineer shall specify and describe kind of metal to be used for flashing.

Metal flashings shall be installed at all parapet walls, curbs, pent houses and other vertical surfaces as shown on plans.

CAP FLASHINGS—(1)—All cap flashings shall be set into brick walls for a distance of four (4) inches and turned up one (1) inch behind the first course of brick and down the face of the wall overlapping the base flashing at least two (2) inches. End laps shall be at least two (2) inches and soldered.

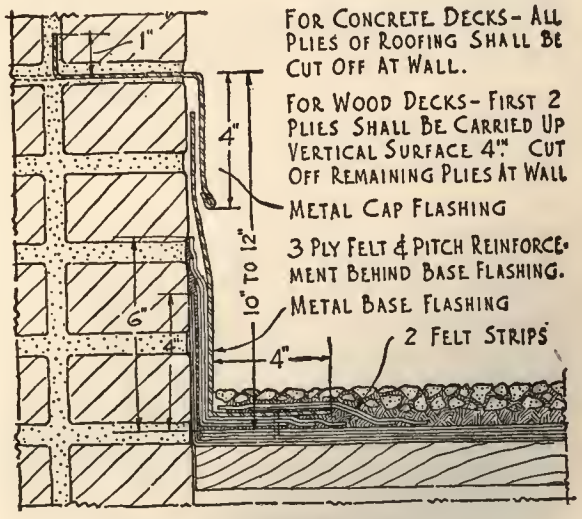
(2) Alternate Specification—Architect's Note—All cap flashings shall be set into brick walls and shall extend from inside face of wall to within one (1) inch of outside face, and down inside face of wall overlapping the base flashing at least two (2) inches. End laps shall be at least two (2) inches and soldered.

FELT AND PITCH REINFORCEMENT—After all plies of roofing have been laid, the roofing contractor shall set in separately, at the angle of the roof deck and vertical surface, three (3) plies of tarred felt cemented together with coal tar pitch. These plies shall extend out on the roofing at least four (4) inches and up the vertical surface six (6) inches. The last ply shall be coated with coal tar pitch. For roofing guaranteed for fifteen (15) years or less, a felt and pitch reinforcement of two (2) plies is sufficient.

BASE FLASHINGS—First—Over the felt and pitch reinforcement thus applied, the metal base flashing shall be set, extending out on the roof four (4) inches and up the vertical surface not less than ten (10) inches, nor more than twelve (12) inches. The base flashing shall be nailed to the roof deck with barbed roofing nails spaced not more than three (3) inches on centers on a line not exceeding three-quarters (¾) of an inch from the outer edge of the metal. **If concrete roof deck does not permit of nailing, a creosoted wood nailing strip at least one (1) inch thick, with two (2) inch face and three (3) inch base, shall be installed, centered on a line three (3) inches from the vertical surface.**

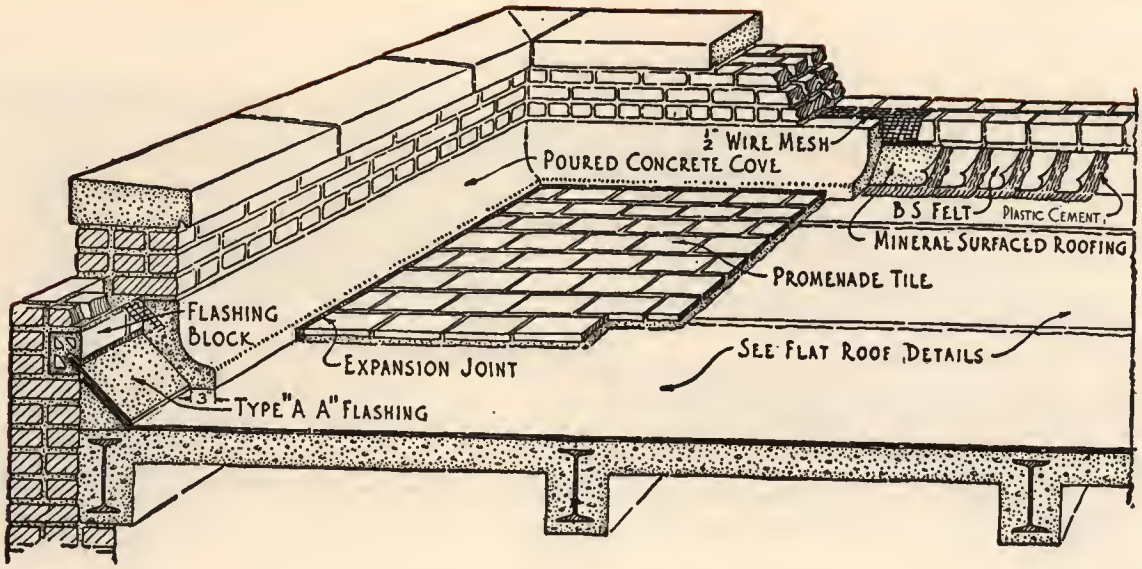
Second—End laps shall be locked and soldered unless otherwise specified.

Third—The four (4) inches of metal on the roof shall be given a prime coat of Barrett EVERJET Paint. It shall then be coated with Coal Tar Pitch into which shall be immediately embedded a strip of tarred felt four (4) inches wide centered over the nailing course. The first strip shall be coated with Coal Tar Pitch into which shall be immediately embedded a second strip of tarred felt six (6) inches wide completely covering the first.

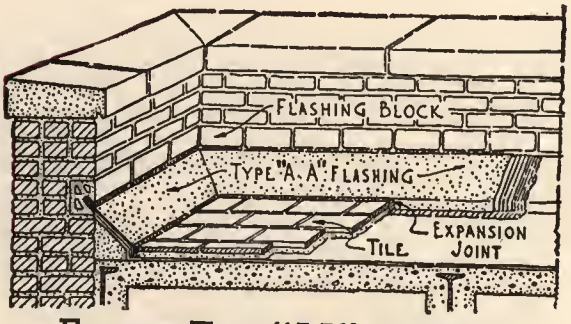


DETAIL FOR METAL CAP AND BASE FLASHING

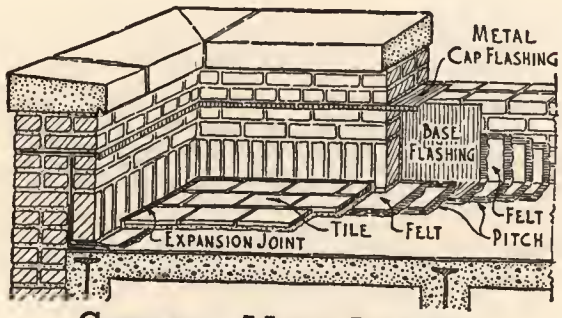
FLASHING AND EXPANSION JOINT DETAILS FOR PROMENADE TILE ROOFS



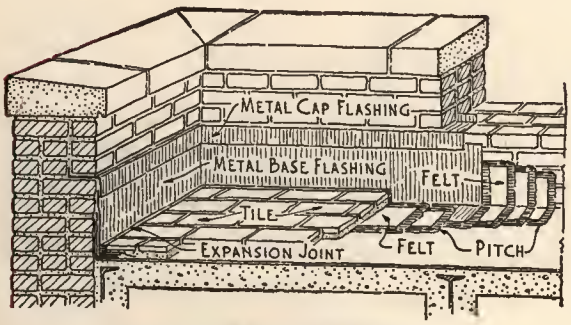
CONCEALED TYPE "AA" FLASHING



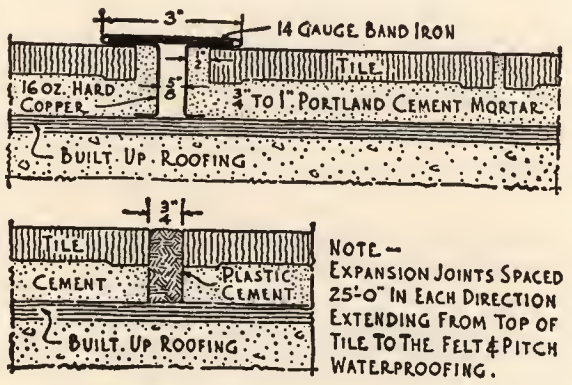
EXPOSED TYPE "AA" FLASHING



CONCEALED METAL FLASHING



EXPOSED METAL FLASHING



NOTE — EXPANSION JOINTS SPACED 25'-0" IN EACH DIRECTION EXTENDING FROM TOP OF TILE TO THE FELT & PITCH WATERPROOFING.

TYPES OF EXPANSION JOINTS

SPECIFICATIONS FOR SPANDREL BEAMS, PARAPET WALLS, ETC.

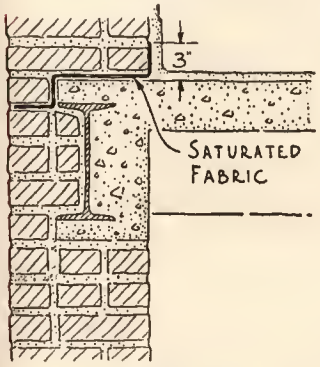
8a/2

At all spandrels, as detailed, provide and install waterproofing course consisting of two (2) plies of BARRETT Pitch Saturated Waterproofing Fabric, and three (3) full trowel coatings of BARRETT Plastic P B Cement, applied alternately. Waterproofing course shall be continuous, shall extend to within one-half (½) inch of outside edge of wall, and shall be turned up and cemented to inside walls to a height of at least three (3) inches. All end laps shall be not less than three (3) inches, and each succeeding layer shall break joints with underlying layer.

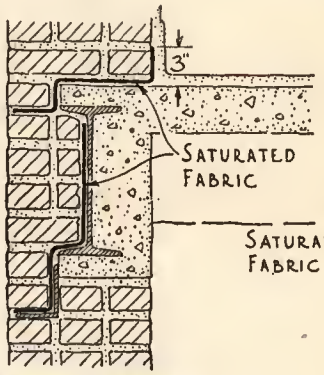
The fabric shall be applied without wrinkles or buckles and all trowel coatings shall be smooth and full. Care shall be taken not to injure the waterproofing course either during application or after completion.

Note No. 1 —All surfaces on which the waterproofing course is to be installed shall be smooth, dry and free from loose materials.

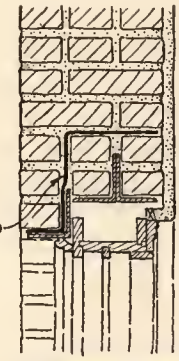
Note No. 2 —Method to be followed (whether counter or base and counter) shall be clearly indicated on plans and in specifications prepared by architect.



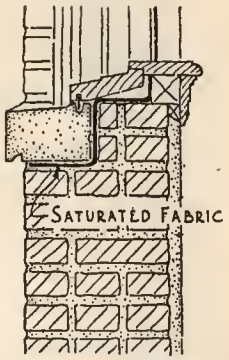
SPANDREL FLASHING COUNTER TYPE



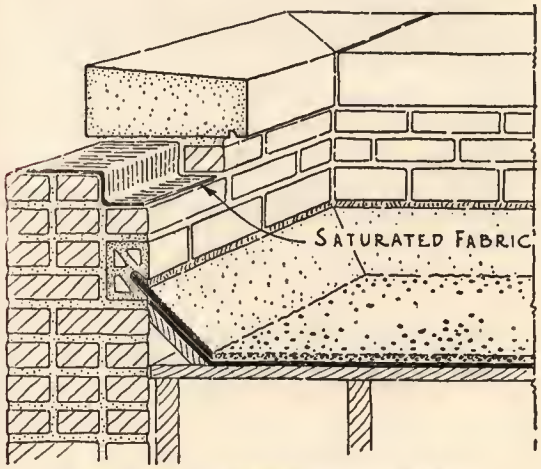
SPANDREL FLASHING BASE & COUNTER TYPE



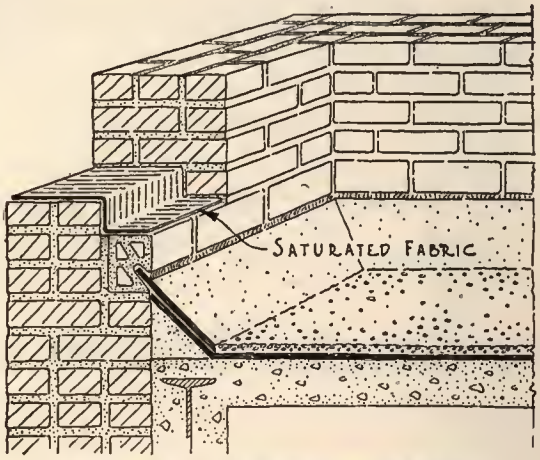
WINDOW HEAD FLASHING



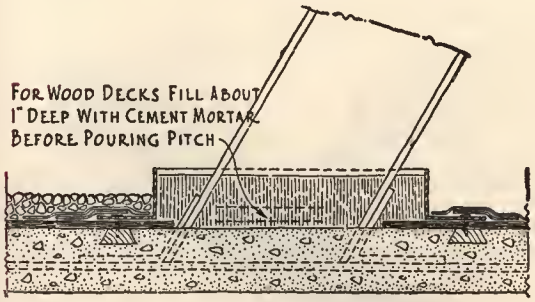
WINDOW SILL FLASHING



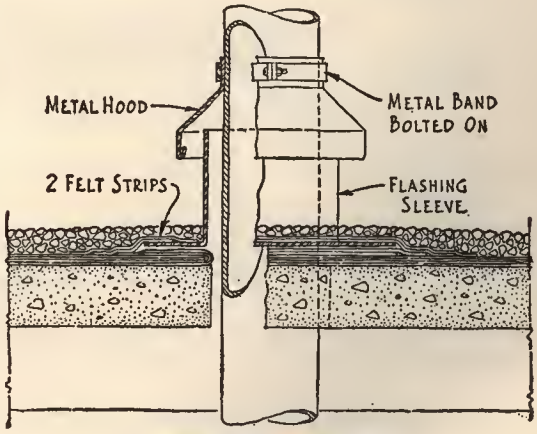
THRU WALL FLASHING LOW PARAPET



THRU WALL FLASHING HIGH PARAPET

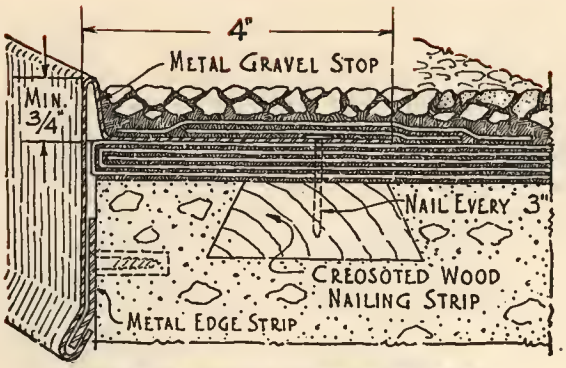


PITCH POCKETS FOR SIGN SUPPORTS, ETC.



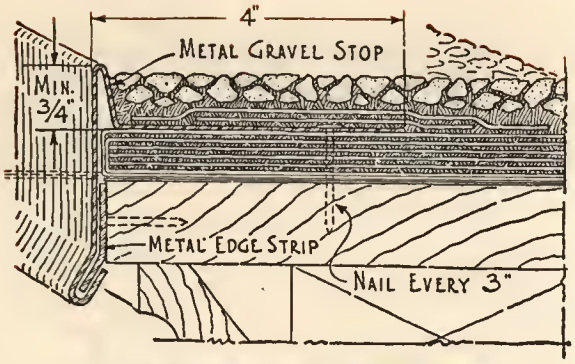
FLASHING FOR STACKS

METHOD OF FINISHING EAVES AND EDGES
For Flat and Steep Roof Construction



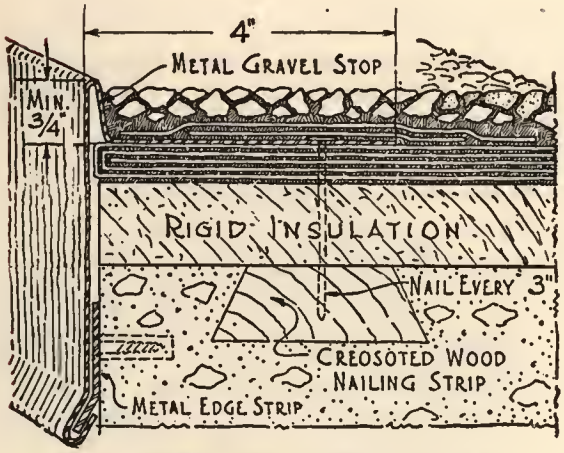
METAL EAVE FOR CONCRETE DECK

Note—First two plies of Felt in roofing turned over succeeding plies and back 12"

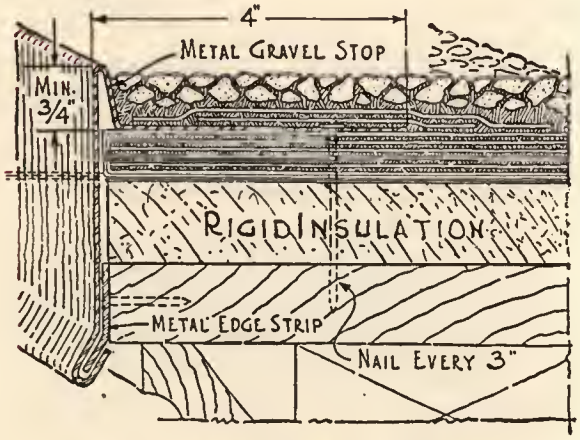


METAL EAVE FOR WOOD DECK

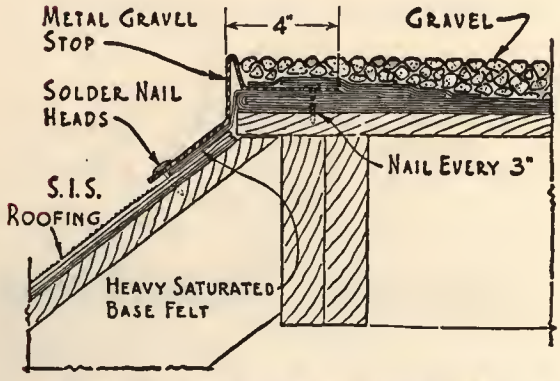
Note—First two plies of Felt in roofing turned over succeeding plies and back 12"



METAL EAVE FOR CONCRETE DECK
SHOWING NAILING THRU INSULATION

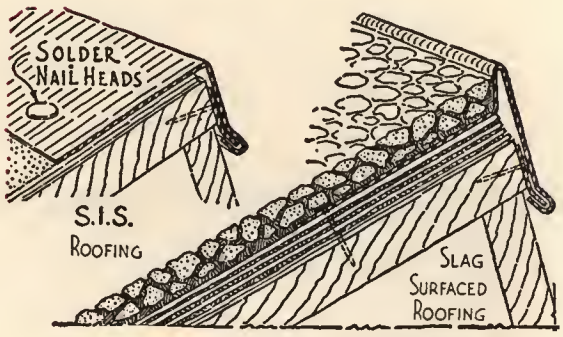


METAL EAVE FOR WOOD DECK
SHOWING NAILING THRU INSULATION

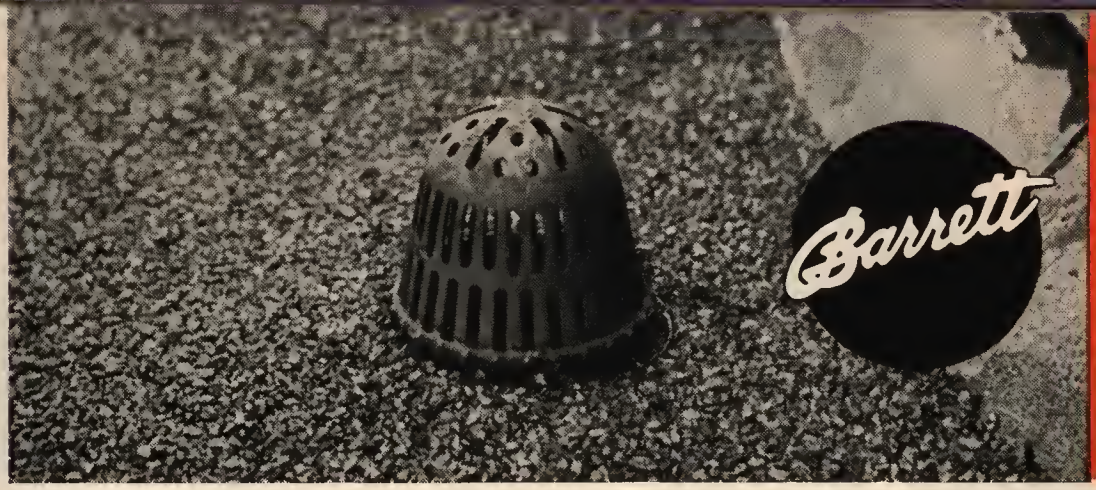


Note—First two plies of Felt in roofing turned over succeeding plies and back 12"

DETAIL FOR FLAT & STEEP ROOF CONNECTION



METAL RIDGE FOR SAWTOOTH SKYLIGHT



ROOF DRAINS SHOULD BE PERMANENT

In all types of roof construction, it is consistent that roof drains be at least as permanent as the roof coverings they serve. They should be easy to install, should effectively function under all prevailing conditions, and should provide against clogging of drainage outlets by leaves or debris deposited on the roof proper.

The Barrett-Holt Roof Connection

The Barrett-Holt Roof Connection meets the demand for a completely assembled, long-lived and dependable roof drain fixture. The connection is made up in a variety of types to meet the particular conditions involved. It consists of a roof fitting with roof locking attachment; a component flashing flange; and an expansion joint. The types furnished for use in connection with inside leader lines are equipped with a cast metal tile or gravel stop; a strainer plate; and serviceable cast metal strainer.

The flashing flange furnished as a component part of the Barrett-Holt Roof Connection assures a dependable connection between the leader head unit and the roof covering. The expansion joint makes possible a flexible, yet water and gas-tight joint between the connection and the pipe or fixture joined to it. The changes resulting from shrinkage, settlement, and expansion or contraction are thereby properly provided for without danger of broken joints or troublesome leaks.

They are used: (1) As a roof leader connection where inside leader or conductor pipe is installed; (2) As a roof vent connection where soil or waste vent pipe is installed; (3) As a connection where any pipe, flag-pole, tank support or similar fixture is carried through the roof deck of a building.

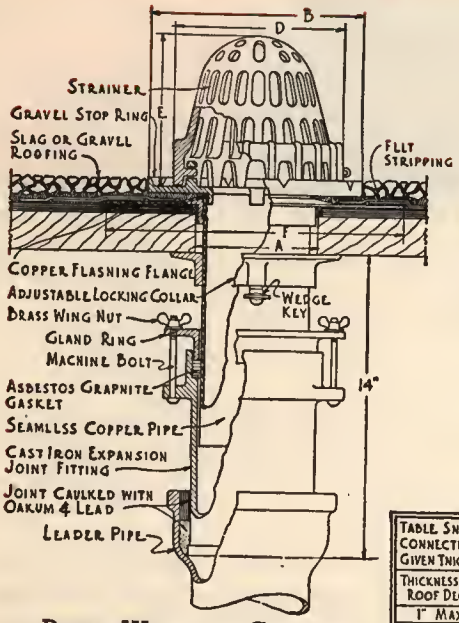
Used More Than Thirty Years

More than thirty years of use under exacting conditions have proved the Barrett-Holt Roof Connection to be the most dependable device of its kind on the market. It simplifies specification procedure—a type to meet each need can be specified in a few words. It is easy to install, and allowances covering extra parts or assembly costs are not necessary.

The Barrett-Holt Roof Connections described are standard, and are recommended for use on all types of flat and steep roof construction, in accordance with the specifications outlined.

BARRETT-HOLT ROOF LEADER CONNECTIONS FOR INTERIOR DRAINAGE
For Roofs Having Ample Working Space Below the Roof Deck

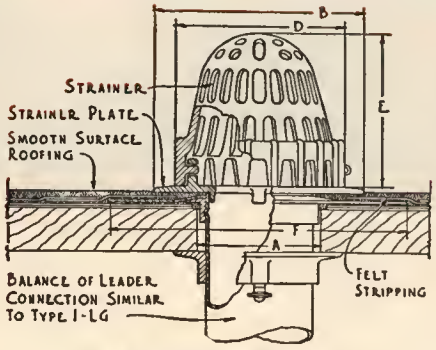
FOR FLAT ROOF DECKS



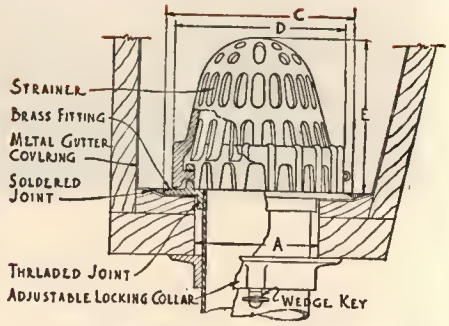
DECK, WOOD OR GYPSUM SLAG OR GRAVEL SURFACE TYPE 1-LG

TABLE SHOWING LENGTH OF CONNECTION REQUIRED FOR GIVEN THICKNESS OF ROOF DECK	
THICKNESS OF ROOF DECK	LENGTH OF CONNECTION
1" MAX.	10"
3" "	12"
5" "	14"
7" "	16"
9" "	18"

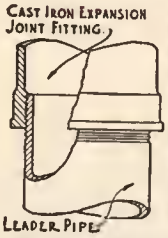
NOTE - WHEN SCREW THREAD PIPE IS TO BE USED IN BUILDINGS CONSTRUCTED OF STEEL, CONCRETE, BRICK, STONE OR SIMILAR NON-SHRINKABLE MATERIAL, AND THE EXPANSION AND CONTRACTION OF THE LEADER PIPE WILL NOT EXCEED 1", A CONNECTION 2" SHORTER MAY BE USED. THE MINIMUM LENGTH OF THE CONNECTION IS 10"



DECK, WOOD OR GYPSUM SMOOTH SURFACE TYPE 1-LS



DECK, WOOD OR GYPSUM METAL COVERED GUTTERS TYPE 1-LM



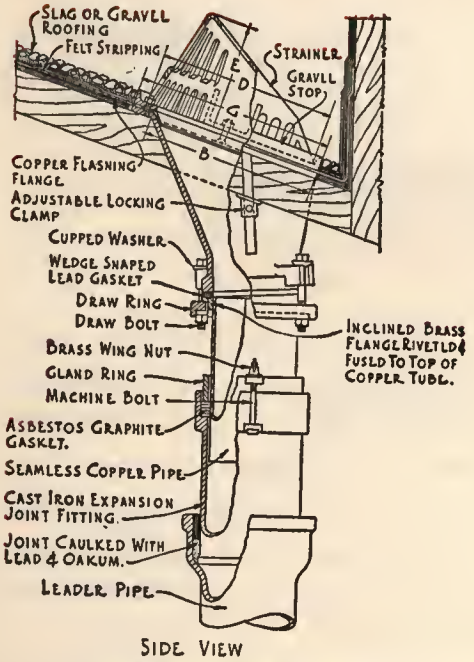
FOR THREADED PIPE

SIZE OF PIPE	A	B	C	D	E	F
3"	4"	8"	7"	6 3/4"	6 5/8"	12"x12"
4"	5"	8"	7"	6 3/4"	6 5/8"	12"x12"
5"	6"	10 3/8"	9 3/4"	9 1/2"	8 1/2"	14"x14"
6"	7"	10 3/8"	9 3/4"	9 1/2"	8 1/2"	16"x16"
8"	9"	11 3/8"	11"	10 1/2"	9 1/2"	18"x18"
10"	11"	14 1/4"	13 1/2"	13"	11"	20"x20"

DIMENSION TABLE

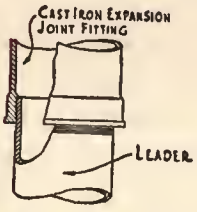
NOTE: In place of copper flashing flanges and seamless pipe as detailed, lead flanges and tubing may be furnished.

FOR STEEP ROOF DECKS

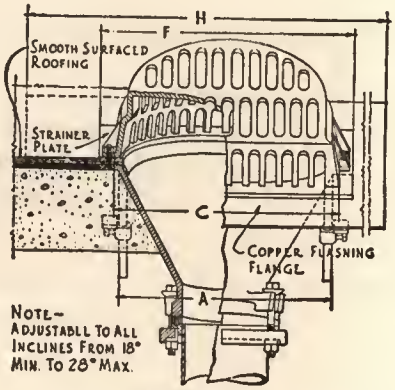


SIDE VIEW

DECK, WOOD OR GYPSUM STEEP SLAG OR GRAVEL SURFACE TYPE 2-LG



FOR THREADED PIPE



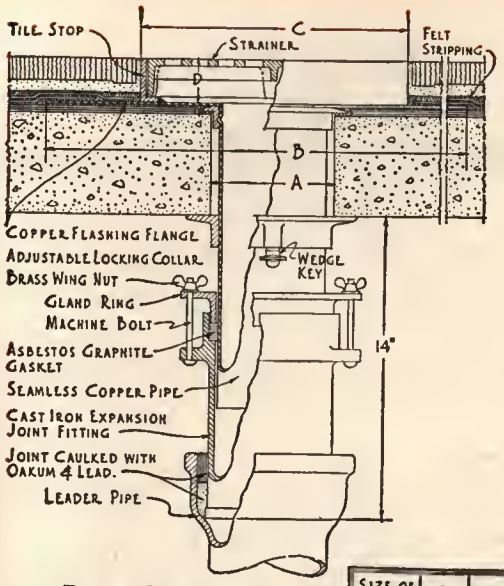
FRONT VIEW

DECK, CONCRETE STEEP, SMOOTH SURFACE TYPE 2-LS

SIZE OF PIPE	A	B	C	D	E	F	G	H
3"	9 7/8"	6 3/4"	10 5/8"	7 5/8"	4 3/8"	10 3/8"	7 5/8"	18"x18"
4"	10 3/8"	8 3/8"	11 3/8"	8 5/8"	5 3/8"	12 1/4"	9 5/8"	20"x20"
5"	11 3/8"	9 1/8"	12 1/2"	9 5/8"	5 1/2"	13 5/8"	10 1/2"	22"x22"
6"	12 3/4"	10 3/8"	13 3/4"	10"	5 5/8"	14 1/4"	11 3/8"	24"x24"
8"	THIS CONNECTION ON SPECIAL ORDER.							

DIMENSION TABLE

Used on inclined roofs ranging from 12° to 42° and having interior drainage. Range of variation of the standard connection is from 18° to 28°. For lesser inclines ranging from 12° to 18°, or greater inclines from 28° to 42°, special fittings are furnished.



DECK, CONCRETE TILE OR SIMILAR SURFACE TYPE 1-LT

SIZE OF PIPE	A	B	C	D
3"	4"	18"x18"	10⅜"	¾" TO 3½" UNIT OF VARIATION ¼"
4"	5"	18"x18"	10⅜"	
5"	6"	18"x18"	10⅜"	
6"	7"	18"x18"	10⅜"	
8"	9"	ON SPECIAL ORDER ONLY		
10"	11"			

SPECIFICATION FOR INSTALLING BARRETT-HOLT LEADER CONNECTIONS, TYPES 1-LG, 1-LS, 1-LM AND 1-LT

8a/2

PREPARATION OF DECK—The opening through the roof deck shall be of proper size to receive the Roof Leader Connection and shall be concentric with leader pipe.

Barrett-Holt Roof Leader Connection, Type ..... shall be installed at all drainage outlets and shall be of proper size and length to connect to ..... inch leader pipe as shown on Drawing No. .....

Barrett-Holt Roof Leader Connections shall be installed and connected complete in strict accordance with directions of the manufacturer.

FOR WOOD OR PRECAST GYPSUM DECKS (Types 1-LG, 1-LS and 1-LM)—Where built-up roofing is used as a roof covering, two (2) plies of Felt thoroughly embedded in hot bitumen shall be applied over the entire copper flashing flange, the outer edge of the first ply to extend beyond the flange not less than three (3) inches and of the second ply not less than six (6) inches before application of finished roof surfacing.

IMPORTANT—The copper flashing flange being an integral part of the Types 1-LG, 1-LS and 1-LM Connections, shall in no case be removed. If the flange is bent, it shall be straightened and made smooth before it is set in place. The flashing flange shall be secured to the roof deck with nails wherever possible.

FOR CONCRETE DECKS (Type 1-LT)—Before the application of the cement bed or the finished surfacing material, two (2) plies of Felt thoroughly embedded in hot bitumen shall be applied over the entire copper flashing flange, the outer edge of the first ply to extend beyond the flange not less than three (3) inches and of the second ply not less than six (6) inches.

SPECIFICATIONS FOR INSTALLING BARRETT-HOLT LEADER CONNECTIONS, TYPES 2-LG AND 2-LS

PREPARATION OF SURFACES—The opening through the roof deck shall be of proper size to receive the Roof Leader Connection, and shall be concentric with leader pipe.

INSTALLATION OF LEADER CONNECTIONS—First—Barrett-Holt Roof Leader Connection, Type ..... shall be installed at all drainage outlets and shall be of proper size and length to connect to ..... inch leader pipe as shown on Drawing No. .....

Second—Barrett-Holt Roof Leader Connection shall be adjusted to fit the roof incline and draw-bolts tightened to obtain a water-tight joint. The Connection shall be set in place so that the lower surface of the iron flange shall be flush with the finished surface of the roof deck. The adjustable locking clamps shall be brought up tightly against the under-side of the roof deck and firmly fastened with the set screws so that the Connection is made integral with the roof deck.

Third—At each drainage point a section of the valley roofing not less than three (3) feet wide shall be carried up the inclined surface of the roof deck not less than two (2) feet. Roofing shall terminate at the outer edge of the iron flange of the Connection.

Fourth—After all roofing Felt has been laid and before the finished wearing surface is applied, the surface of the iron flange of the Connection shall be thoroughly cleaned and the copper flashing flange embedded in Plastic ELASTIGUM Cement. If the flange is bent it shall be straightened and made smooth before being set in place. Flashing flange shall be nailed wherever possible. Iron gravel stop ring or strainer plate shall be set in Plastic ELASTIGUM Cement and firmly drawn down by brass nuts.

Fifth—The cast iron strainer shall be fastened in place (if a brass or aluminum strainer is desired, it shall be specified).

Sixth—The copper Flashing Flange shall be thoroughly mopped with hot bitumen into which, while hot, the steep roofing shall be applied and brought up to the gravel stop or strainer plate.

Seventh—The valley roofing shall be laid and brought up to the gravel stop or strainer plate.

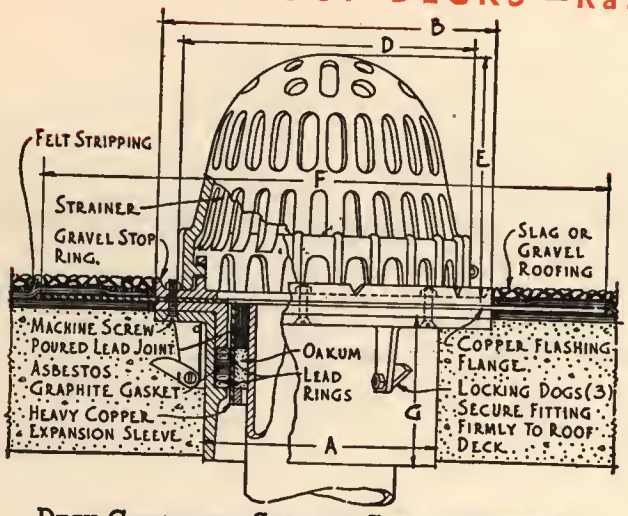
Eighth—The gland ring, gasket and expansion joint fitting shall be set in place and the last length of leader pipe cut to proper length and placed in position. The lower end of the expansion joint fitting shall be not less than fourteen (14) inches from the bottom of the veins on the side of the roof bowl.

Ninth—The gasket and gland ring shall be brought down into the expansion joint fitting, bolted and tightened sufficiently by the wing nuts to obtain a water-tight connection. The joint between the expansion joint and the leader pipe shall then be made.

NOTE: In place of copper flashing flanges and seamless pipe as detailed, lead flanges and tubing may be furnished.

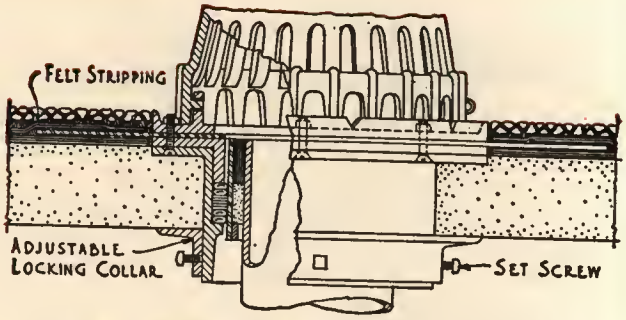
BARRETT-HOLT LEADER CONNECTIONS FOR INTERIOR DRAINAGE
For Roofs Having Restricted Working Space Below the Roof Deck

FOR FLAT ROOF DECKS—Raised Strainer

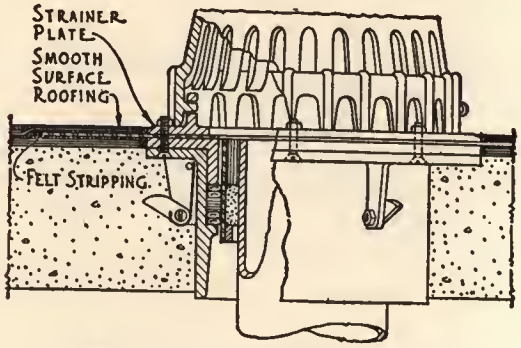


DECK CONCRETE—SLAG OR GRAVEL SURFACE
TYPE 6-LG

SIZE OF PIPE	A	B & C	D	E	F	G
3"	6¼"	10¾"	9½"	8½"	16"x16"	4½"
4"	7¼"	10¾"	9½"	8½"	18"x18"	4½"
5"	8¼"	11¾"	10½"	9½"	20"x20"	4½"
6"	9¼"	11¾"	10½"	9½"	20"x20"	4½"
8"	11¼"	14¼"	13"	11"	24"x24"	4½"

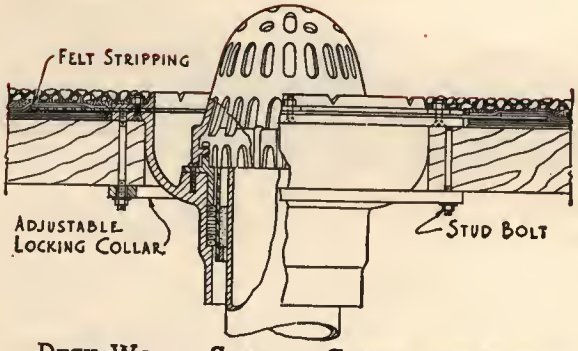


DECK CONCRETE—SLAG OR GRAVEL SURFACE
TYPE 6-LG



DECK CONCRETE—SMOOTH SURFACE
TYPE 6-LS

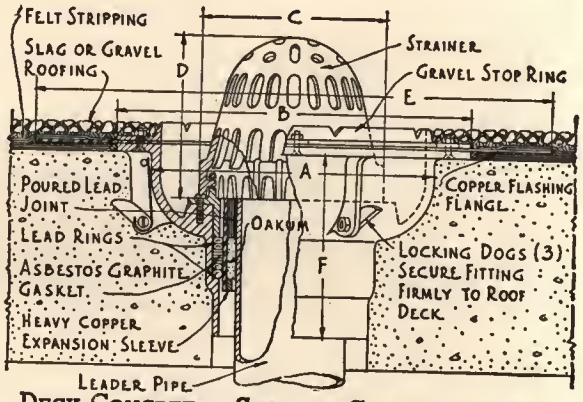
FOR FLAT ROOF DECKS
Sump Type Strainer



DECK WOOD—SLAG OR GRAVEL SURFACE
TYPE 5-LG

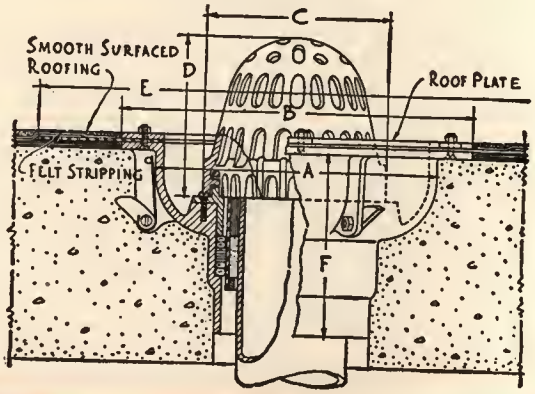
NOTE—
STUD BOLTS AND ADJUSTABLE LOCKING COLLAR USED ONLY FOR WOOD OR GYPSUM ROOF DECKS.

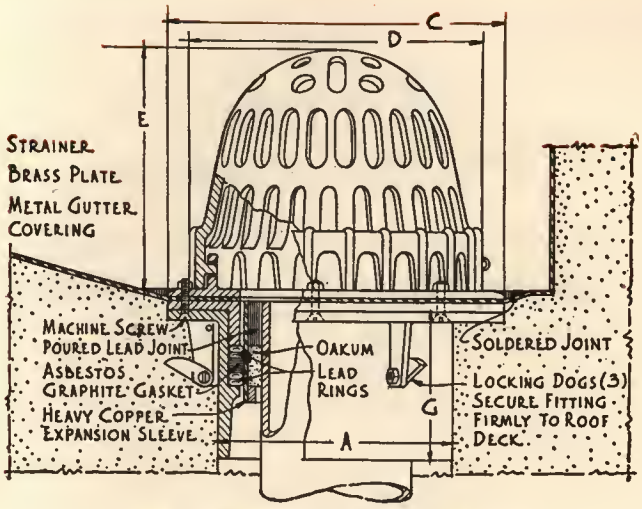
SIZE OF PIPE	A	B	C	D	E	F
3"	10¼"	12⅝"	6¾"	6⅛"	20"x20"	7"
4"	12¼"	14⅝"	9½"	8½"	24"x24"	7"
5"	12¼"	14⅝"	9½"	8½"	24"x24"	7"
6"	13¼"	15⅝"	10½"	9½"	24"x24"	7"
8"	15¼"	17⅝"	13"	11"	26"x26"	7"



DECK CONCRETE—SLAG OR GRAVEL SURFACE
TYPE 5-LG

At Right:
DECK, CONCRETE
—SMOOTH
SURFACE
TYPE 5-LS





DECK CONCRETE—METAL COVERED
TYPE 6-LM

SPECIFICATIONS FOR INSTALLING BARRETT-HOLT LEADER CONNECTIONS, TYPES 6-LG, 6-LS AND 6-LM

8a
2

The opening through the roof deck shall be of proper size to receive the Roof Leader Connection and shall be concentric with the leader pipe.

Barrett-Holt Roof Leader Connection Type ..... shall be installed at all drainage outlets and shall be of proper size and length to connect to ..... inch leader pipe as shown on Drawing No. .....

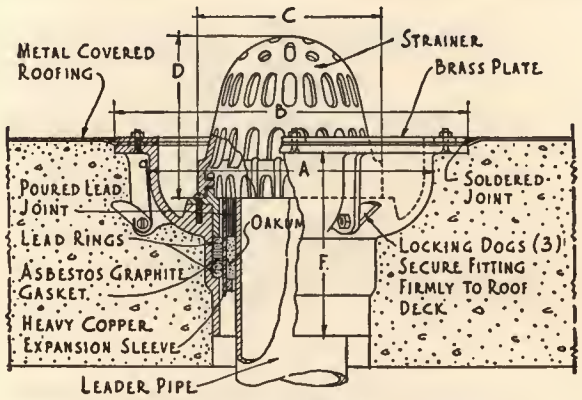
Barrett-Holt Roof Leader Connections shall be installed and connected complete in strict accordance with directions of the manufacturer.

Where built-up roofing is used as a roof covering, two (2) plies of Felt thoroughly embedded in hot bitumen shall be applied over the entire copper flashing flange, the outer edge of the first ply to extend beyond the flange not less than three (3) inches and of the second ply not less than six (6) inches before application of finished surfacing.

These types are used as leader connections on flat roofs having interior drainage, except roofs covered with tile or a similar material, and where working space below the roof deck is restricted.

Note—Where gypsum or wood roof deck exceeds three and one-half (3½) inches in thickness, Types 6-LG, 6-LS and 6-LM Connections are equipped with threaded stud bolts which hold the adjustable locking collar in place.

NOTE: In place of copper flashing flanges and seamless pipe as detailed, lead flanges and tubing may be furnished.



DECK CONCRETE—METAL COVERED
TYPE 5-LM

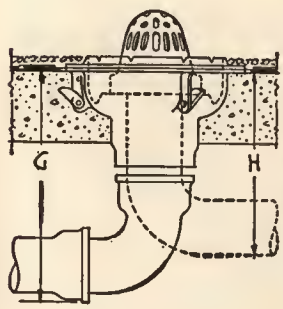


TABLE OF MIN. DIMENSIONS		
SIZE OF PIPE	G	H
3"	17¾"	11½"
4"	18¼"	12"
5"	18¾"	12½"
6"	19¼"	13"
8"	20"	13½"

SPECIFICATIONS FOR INSTALLING BARRETT-HOLT LEADER CONNECTIONS, TYPES 5-LG, 5-LS AND 5-LM

PREPARATION OF SURFACES—The opening through the roof deck shall be of proper size to receive the Roof Leader Connection and shall be concentric with the leader pipe.

INSTALLATION OF LEADER CONNECTIONS—First—Barrett-Holt Roof Leader Connection Type ..... shall be installed at all drainage outlets and shall be of proper size and length to connect to ..... inch leader pipe as shown on Drawing No. .....

Second—Barrett-Holt Roof Leader Connections shall be installed and connected complete in strict accordance with directions of the manufacturer.

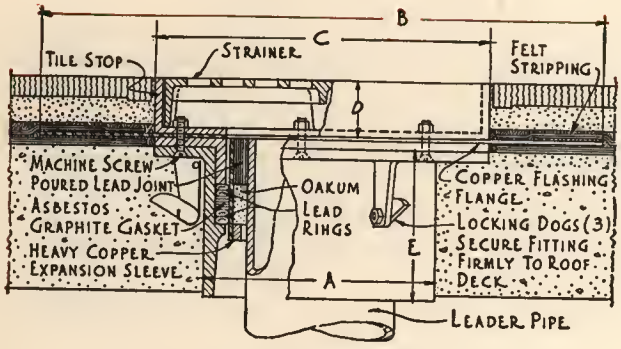
Note—Where built-up roofing is used as a roof covering, two (2) plies of felt thoroughly embedded in hot bitumen shall be applied over the entire copper flashing flange, the outer edge of the first ply to extend beyond the flange not less than three (3) inches and of the second ply not less than six (6) inches.

When used in connection with gypsum or wood roof decks, types 5-LG, 5-LS and 5-LM Connections are equipped with threaded stud bolts which hold the adjustable locking collar in place.

NOTE: In place of copper flashing flanges and seamless pipe as detailed, lead flanges and tubing may be furnished.

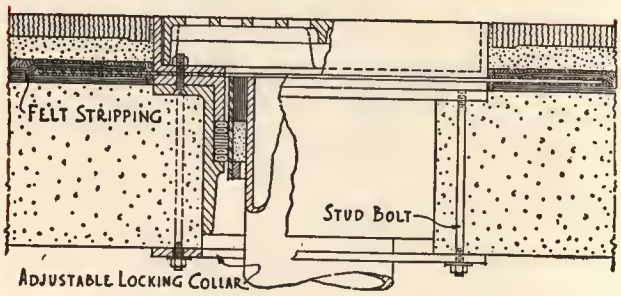
BARRETT-HOLT ROOF LEADER AND VENT CONNECTIONS
For Flat Roofs

FLAT ROOF LEADER CONNECTIONS—Flat Type Strainer
Tile Surfaced Roofs



CONCRETE DECK
TILE OR SIMILAR SURFACE
TYPE 6-LT

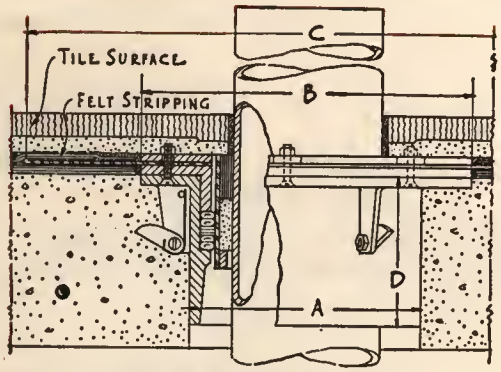
NOTE—
STUD BOLTS AND ADJUSTABLE LOCKING COLLAR USED ONLY FOR WOOD OR GYPSUM ROOF DECKS.



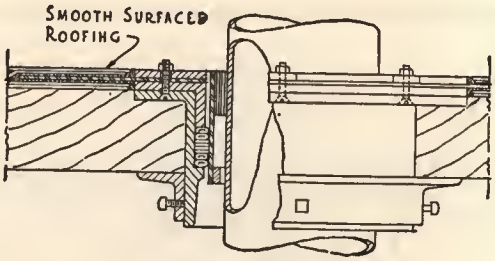
POURED GYPSUM DECK
TILE OR SIMILAR SURFACE
TYPE 6-LT

NOTE: In place of copper flashing flanges and seamless pipe as detailed, lead flanges and tubing may be furnished.

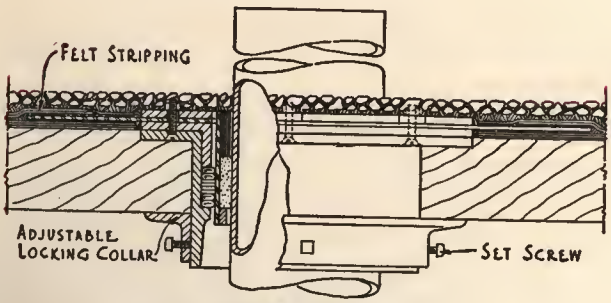
FLAT ROOF VENT CONNECTIONS



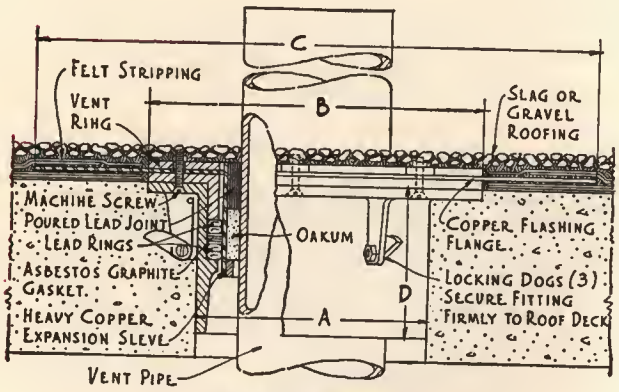
DECK, CONCRETE
TILE OR SIMILAR SURFACE
TYPE 6-VT



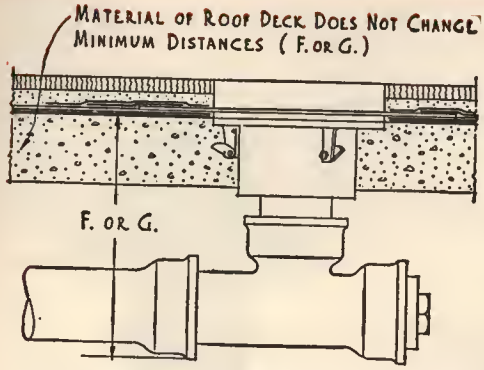
DECK, WOOD
SMOOTH SURFACE
TYPE 6-VS



DECK, WOOD
SLAG OR GRAVEL SURFACE
TYPE 6-VG



DECK, CONCRETE
SLAG OR GRAVEL SURFACE
TYPE 6-VG



F – Refers to Cast Iron Soil Pipe
G – Refers to Wrought Iron or Steel Screw Pipe.

Size of Pipe	A	B	C	D	E	F	G
3"	6¼"	20"x20"	10½"	1" To 3½" Unit of Variation ¼"	4½"	15¼"	13½"
4"	7¼"	20"x20"	10½"		4½"	15¾"	14¼"
5"	8¼"	20"x20"	10½"		4½"	16¼"	14¾"
6"	9¼"	20"x20"	10½"		4½"	16¾"	15¼"
8"	11¼"	24x24	Spec.		4½"	17¾"	17¾"

Dimension Table

SPECIFICATIONS FOR INSTALLING BARRETT-HOLT LEADER CONNECTIONS TYPE 6-LT

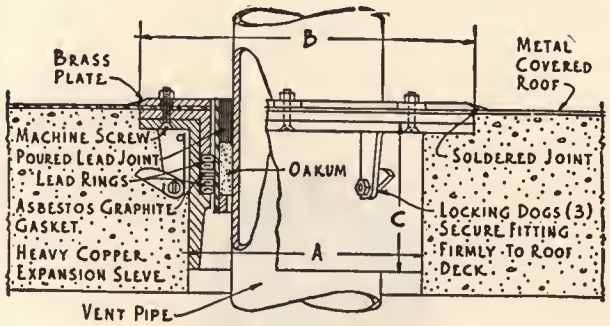
8a 2

The opening through the roof deck shall be of proper size to receive the Roof Leader Connection and shall be concentric with leader pipe.

Barrett-Holt Roof Leader Connection Type ..... shall be installed at all drainage outlets and shall be of proper size and length to connect to ..... inch leader pipe as shown on Drawing No. .....

Barrett-Holt Roof Leader Connections shall be installed and connected complete in strict accordance with directions of the manufacturer.

Before the application of the cement bed or the finished surfacing material, two (2) plies of Felt thoroughly embedded in hot bitumen shall be applied over the entire copper flashing flange, the outer edge of the first ply to extend beyond the flange not less than three (3) inches and of the second ply not less than six (6) inches.



Deck, Concrete
Metal Covered Roofs, Type 6-VM

NOTE: In place of copper flashing flanges and seamless pipe as detailed, lead flanges and tubing may be furnished.

Size of Pipe	A	B	C	D
3"	6¼"	8¾"	16"x16"	4½"
4"	7¼"	9¾"	18"x18"	4½"
5"	8¼"	10¾"	20"x20"	4½"
6"	9¼"	11¾"	20"x20"	e 4½"
8"	11¼"	14⅜"	24"x24"	4½"

Dimension Table

SPECIFICATIONS FOR TYPES 6-VG, 6-VS, 6-VT AND 6-VM

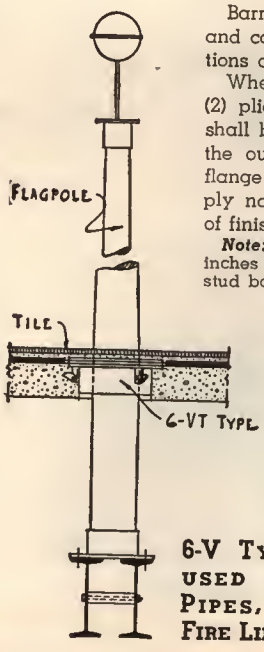
The opening through roof deck shall be of proper size to receive Roof Vent Connection and shall be concentric with vent pipe.

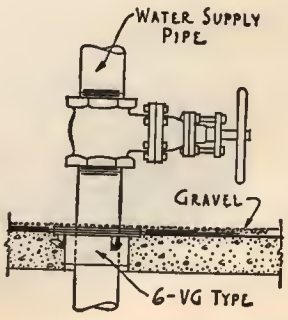
Barrett-Holt Roof Vent Connection Type ..... shall be installed at all vent openings and shall be of proper size to connect with .... inch vent pipe as shown on Drawing No. .....

Barrett-Holt Roof Vent Connections shall be installed and connected complete in strict accordance with directions of manufacturer.

Where built-up roofing is used as a roof covering, two (2) plies of Felt thoroughly embedded in hot bitumen shall be applied over the entire copper flashing flange, the outer edge of the first ply to extend beyond the flange not less than three (3) inches and of the second ply not less than six (6) inches before the application of finished surfacing.

Note: Where gypsum or wood roof decks exceed 3½ inches in thickness, connections are equipped with threaded stud bolts which hold adjustable locking collar in place.

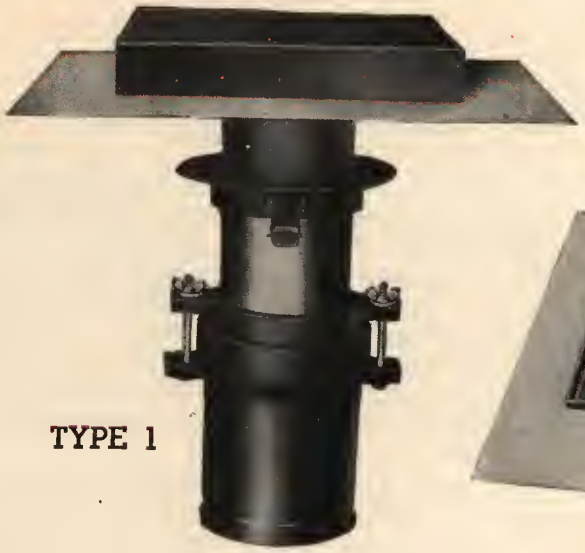




6-V Types can be used for Water Pipes, Flagpoles, Fire Lines, Etc.

BARRETT-HOLT ROOF LEADER AND VENT CONNECTIONS

FOR ROOFS HAVING AMPLE WORKING SPACE BELOW DECK



TYPE 1

Flat Strainer for Flat Roof, Tile or Similar Surface
(see pages 40 and 41)

TYPE 2

Projected Strainer for Steep Roof, Slag or Mineral or Metal Surface
(see pages 40 and 41)

TYPE 1

Projected Strainer for Flat Roof, Slag or Gravel or Metal Surface
(see pages 40 and 41)

FOR ROOFS HAVING RESTRICTED WORKING SPACE BELOW DECK

TYPE 5

Sump Type Strainer for Flat Roof, Slag or Gravel or Metal Surface
(see pages 42 and 43)

TYPE 6

Projected Strainer for Flat Roof, Slag or Gravel or Metal Surface
(see pages 42 and 43)

TYPE 6

Flat Strainer for Flat Roof, Tile Surface
(see pages 44 and 45)

TYPE 6

Vent Connection for Flat Roof, Slag or Gravel or Metal Surface
(see pages 44 and 45)

MEMBRANE WATERPROOFING

Waterproofing in some form is essential to the life and stability of many structures. Just what this form should be is not exactly determinable by mathematical calculation. However, with a careful study of conditions, with the knowledge of definite factors and with the help of past experience, a form of waterproofing may be devised for the specific conditions encountered. Proper waterproofing materials, intelligently selected and skillfully applied, are vital factors in making structures watertight.

For most satisfactory results the use of the membrane method of waterproofing is recommended. This method correctly followed protects and prolongs the life of the structure. It provides an elastic and continuous waterproofing blanket composed of alternate layers of felt or fabric and waterproofing bitumen.

The membrane system is used on structures exposed to hydrostatic pressure or conditions of excessive dampness or moisture, particularly those below ground surface, such as foundations of buildings, tunnels, subways, or other sub-construction. It is equally adaptable to the waterproofing of reservoirs, bridges, retaining walls, etc., and should be applied to the surface exposed to such pressure.

DAMP-PROOFING—NOT UNDER HYDROSTATIC PRESSURE

Damp-proofing is designed to prevent the penetration of moisture or dampness and may be distinguished from waterproofing in that constant "heads" or hydrostatic pressures are not involved.

Damp-proofing generally concerns walls or surfaces exposed to moisture above grade, and substructure surfaces where dampness—and not hydrostatic pressure—exists. The materials or methods employed should provide for the primary function of damp-proofing systems, that of keeping walls dry, and should prevent discoloration. Damp-proofings may be applied to exterior or interior surfaces—depending on conditions.

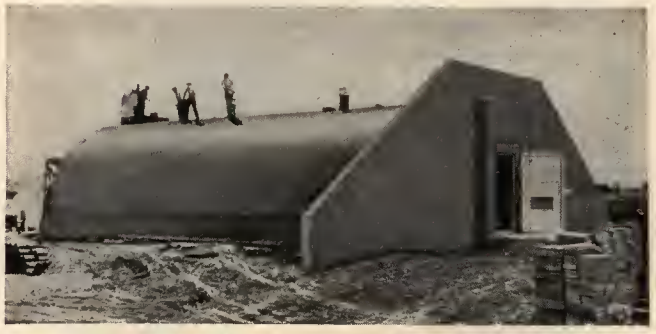
Cracks or other structural failure resulting from settlement, ground movement, or other cause, may result in leakage regardless of the efficacy of the damp-proofing method employed.

Plaster Bonding

Damp-proof coatings, when applied to the interior and used as a plaster bond should be continuous and should provide for a firm bond between the wall surface and the succeeding coats of plaster or other interior wall finish. Several methods covering such treatment are included in this section.

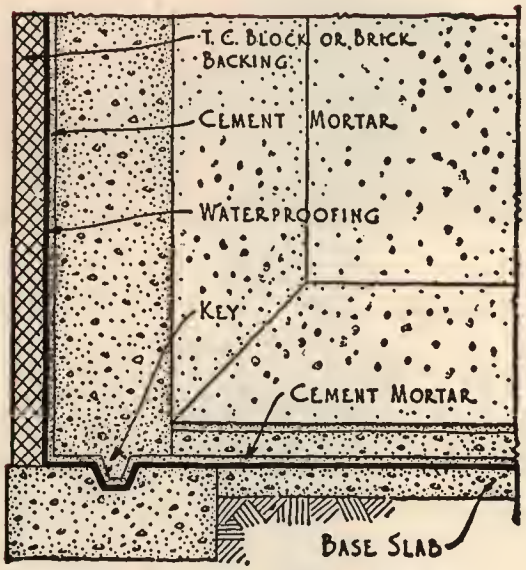
SPECIFICATIONS AND WORKMANSHIP

The specifications for Waterproofing and Damp-proofing in the following pages have been developed out of extensive research and practical experience. The materials specified are manufactured expressly for the purposes recommended. The application methods described are accepted as standard practice. Best results may be secured by following the specification procedure outlined and by employing experienced contractors in the execution of the work. Barrett Approved Waterproofing Contractors are skilled in the arts of waterproofing and damp-proofing. Their employment and adherence to the specifications outlined assure satisfactory results. Waterproofing or damp-proofing, however, is not effective in the case of structural failure caused by settlement, etc.

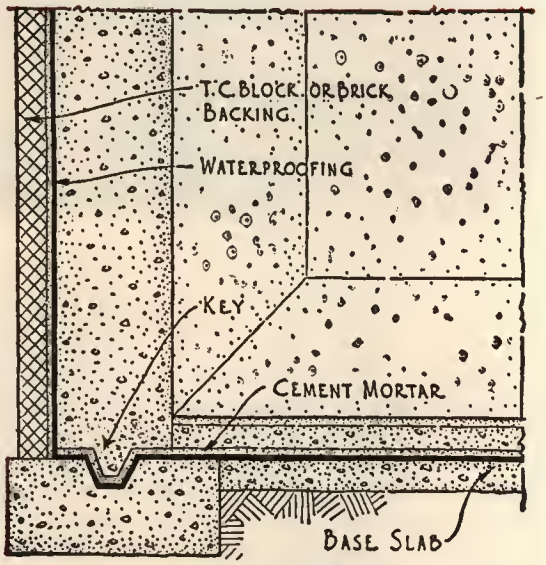


APPLYING MEMBRANE WATERPROOFING

MEMBRANE METHOD OF SUBSTRUCTURE WATERPROOFING



WATERPROOFING DETAIL FOR OUTSIDE WALLS, FOOTINGS, ETC.
- INSIDE APPLICATION -

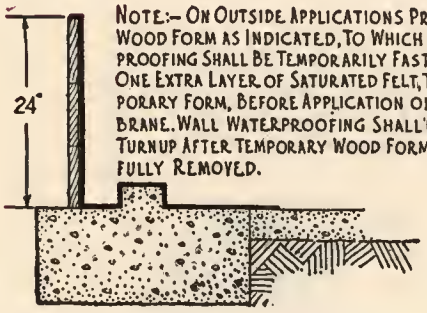


WATERPROOFING DETAIL FOR OUTSIDE WALLS, FOOTINGS, ETC.
- OUTSIDE APPLICATION -

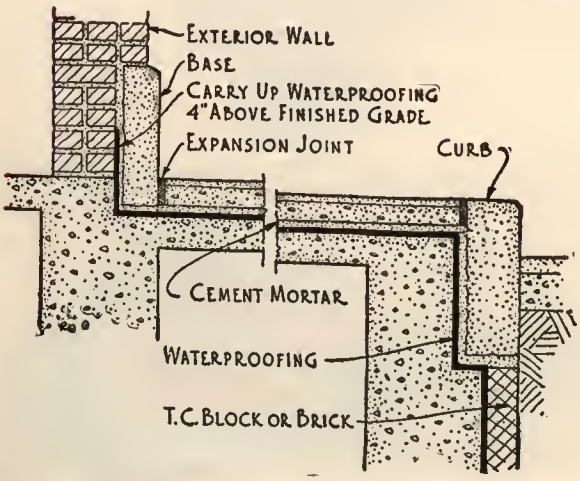
NOTE:-
ON INSIDE APPLICATIONS WATERPROOFING MEMBRANE, AS SPECIFIED, IS APPLIED DIRECTLY TO THE TILE OR BRICK BACKING AS INDICATED

IMPORTANT -
ALL MASONRY SHALL BE DESIGNED TO WITHSTAND THE MAXIMUM HYDROSTATIC PRESSURE.

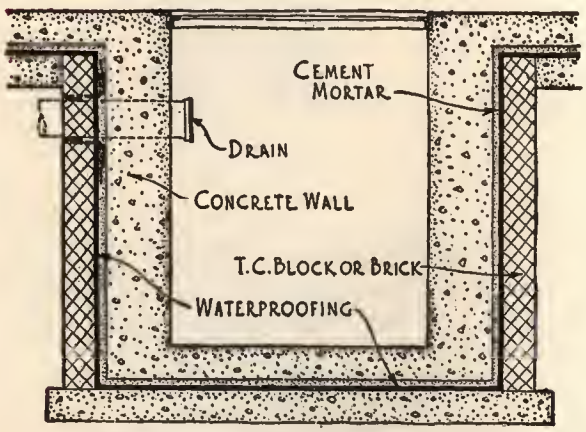
SEE PAGE 51 FOR WATERPROOFING SPECIFICATIONS



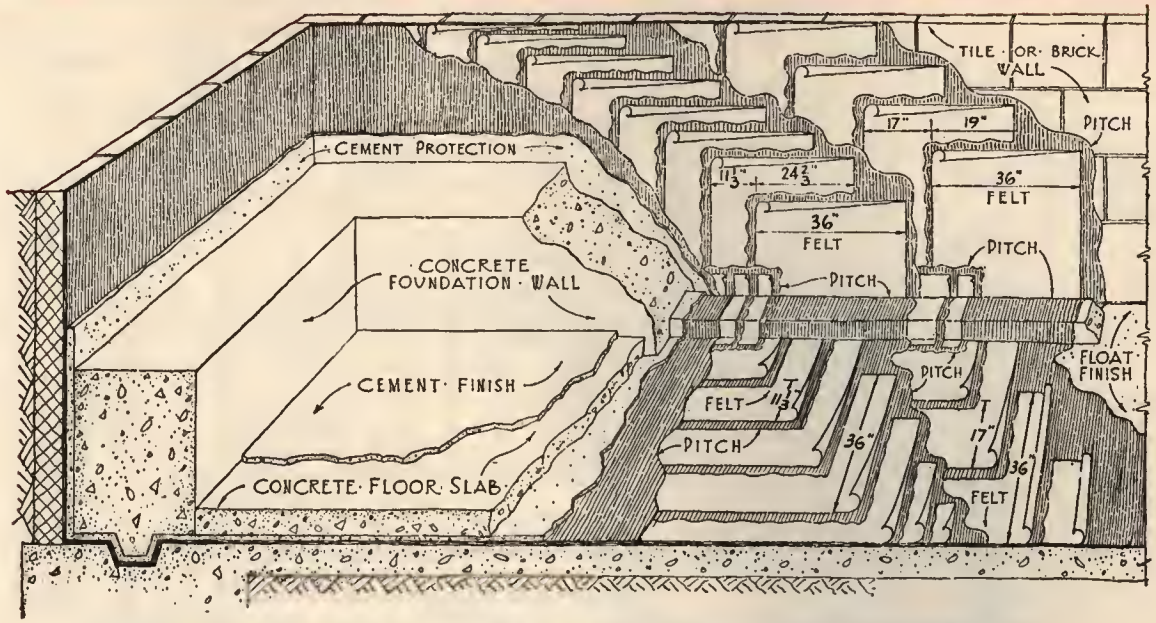
NOTE:- ON OUTSIDE APPLICATIONS PROVIDE TEMPORARY WOOD FORM AS INDICATED, TO WHICH THE FLOOR WATERPROOFING SHALL BE TEMPORARILY FASTENED. PROVIDE ONE EXTRA LAYER OF SATURATED FELT, TACKED DRY TO TEMPORARY FORM, BEFORE APPLICATION OF SPECIFIED MEMBRANE. WALL WATERPROOFING SHALL OVERLAP MEMBRANE TURNUP AFTER TEMPORARY WOOD FORMS HAVE BEEN CAREFULLY REMOVED.



WATERPROOFING DETAIL FOR VAULTS & TUNNELS



WATERPROOFING DETAIL FOR SUMPS & PITS



DETAIL FOR SUBSTRUCTURE WATERPROOFING—5 PLY CONSTRUCTION

IMPORTANT—All Masonry Shall Be Designed to Withstand Maximum Hydrostatic Pressure

SPECIFICATIONS FOR WATERPROOFING AND DAMP-PROOFING

Note—The waterproofing shall be applied by a waterproofing contractor approved by Barrett, who has had experience in successfully applying this type of built-up waterproofing on sub-grade construction, and who can refer to work of a similar nature that he has executed in a satisfactory manner.

PREPARATION OF SURFACES—All surfaces on which the waterproofing is to be applied shall be firm, smooth and dry, and free from loose materials, and shall be covered by a membrane of continuous waterproofing consisting of ..... plies of BARRETT Tarred Felt and ..... moppings of BARRETT Waterproofing Pitch.

APPLICATION OF WATERPROOFING—First—Coat the entire surface on which the waterproofing is to be applied with BARRETT Waterproofing Pitch into which, while hot, embed a layer of BARRETT Tarred Felt, as specified, following this with alternating moppings of Pitch and layers of Felt until ..... moppings of Pitch and ..... layers of Felt have been applied. Each layer of Felt shall be thoroughly rubbed into the hot Pitch, and the entire surface shall be immediately mopped with Pitch to insure thorough embedding of the Felt. The Felt shall be laid without wrinkles or buckles, and the finished membrane shall be free from pockets or blisters.

Second—Not less than .....* pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing, and the Pitch shall not be heated above three hundred and fifty (350) degrees Fahrenheit.

Third—At wall angles and footings and places where the waterproofing may be subjected to unusual strain, there shall be applied not less than two (2) extra reinforcing layers of Felt and alternating moppings of Pitch.

Fourth—Where laps are left to be connected, they shall be not less than ten (10) inches wide, and shall be temporarily protected by one-half (½) inch troweled course of Portland Cement Mortar. When connections with laps are made, laps shall be carefully cleaned, dry, and mopped with Pitch before proceeding with the work.

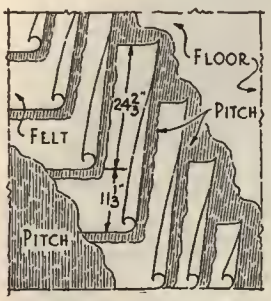
Fifth—Care shall be taken not to injure the waterproofing membrane either during application or after completion, and all finished work shall be approved before construction of permanent protective finish or wall.

Sixth—The waterproofing shall be immediately protected by tile, brick, concrete or similar material as specified.

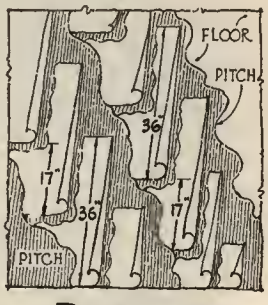
* **Architect's Note**—For five (5) ply construction six (6) alternating moppings of Pitch shall be required, and not less than one hundred and eighty (180) pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing.

For four (4) ply construction five (5) alternating moppings of Pitch shall be required, and not less than one hundred and fifty (150) pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing.

For three (3) ply construction four (4) alternating moppings of Pitch, shall be required, and not less than one hundred and twenty (120) pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing.

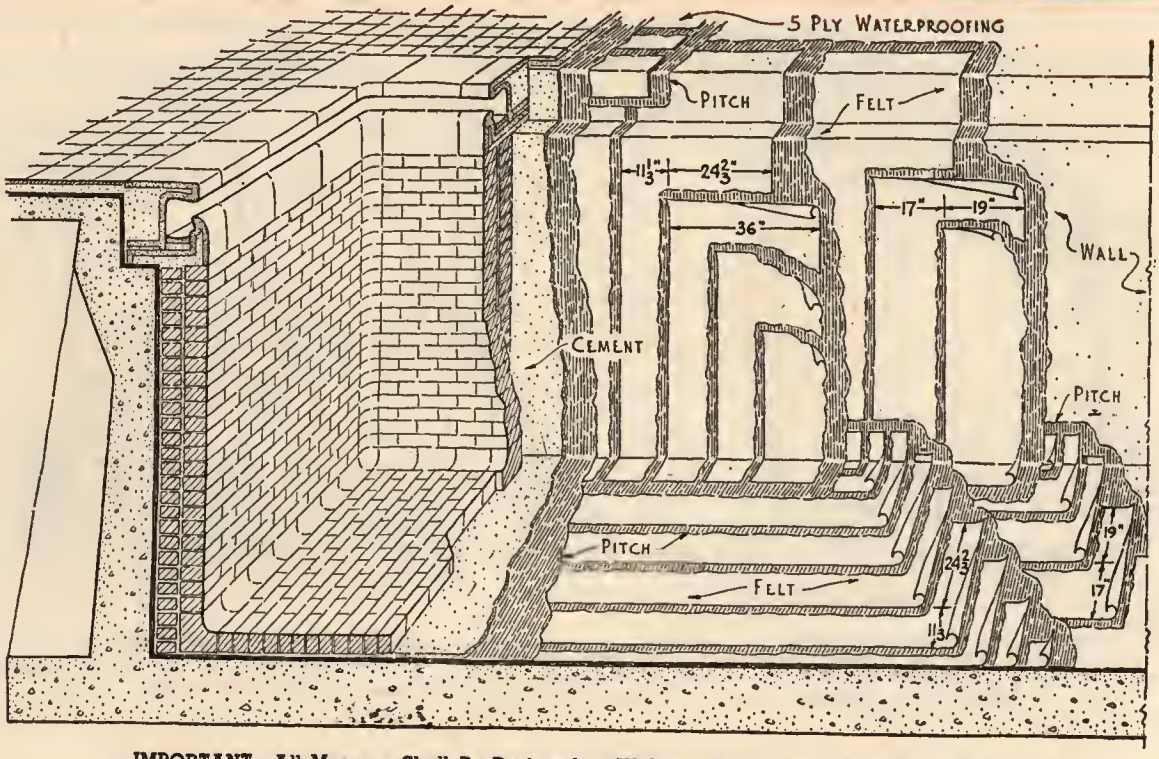


DETAIL FOR 3 PLY CONSTRUCTION



DETAIL FOR 4 PLY CONSTRUCTION

MEMBRANE METHOD FOR WATERPROOFING SWIMMING POOLS, SHOWER ROOMS, ETC.



IMPORTANT—All Masonry Shall Be Designed to Withstand Maximum Hydrostatic Pressure

SPECIFICATIONS FOR MEMBRANE METHOD FOR WATERPROOFING SWIMMING POOLS, SHOWER ROOMS, ETC.

Note—The waterproofing shall be applied by a waterproofing contractor approved by Barrett, who has had experience in successfully applying this type of built-up waterproofing on swimming pool construction and who can refer to work of a similar nature that he has executed in a satisfactory manner.

PREPARATION OF SURFACES—All surfaces on which the waterproofing is to be applied shall be firm, smooth and dry, and free from loose materials, and shall be covered by a membrane of continuous waterproofing consisting of five (5) plies of BARRETT Tarred Felt, as specified, and six (6) moppings of BARRETT Waterproofing Pitch.

APPLICATION OF WATERPROOFING—First—Coat the entire surface on which the waterproofing is to be applied with BARRETT Waterproofing Pitch into which, while hot, lay two (2) plies of BARRETT Tarred Felt, lapping each sheet nineteen (19) inches over preceding one, mopping with BARRETT Waterproofing Pitch the full nineteen (19) inch lap on each sheet, so that in no place shall Felt touch Felt.

Second—Coat the entire surface uniformly with BARRETT Waterproofing Pitch into which, while hot, lay three (3) plies of BARRETT Tarred Felt, lapping each sheet twenty-four and two-thirds (24⅔) inches over preceding one, mopping with BARRETT Waterproofing Pitch the full twenty-four and two-thirds (24⅔) inch lap on each sheet, so that in no place shall Felt touch Felt. All Felt shall be thoroughly and smoothly embedded into the hot Pitch, shall be laid without wrinkles or buckles, and the finished membrane shall be free from pockets or blisters.

Third—Coat the entire surface with a heavy, uniform mopping of BARRETT Waterproofing Pitch.

Fourth—Not less than one hundred and eighty (180) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing and the Pitch shall not be heated above three hundred and fifty (350) degrees Fahrenheit.

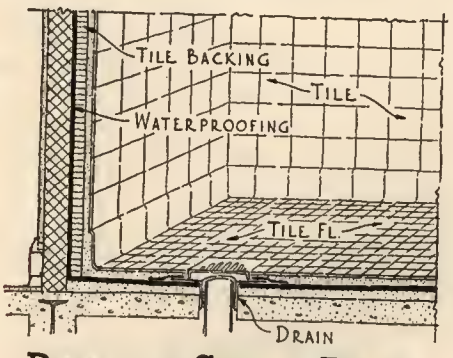
Fifth—At wall angles and footings and places where the waterproofing may be subjected to unusual strain, there shall be applied not less than two (2) extra reinforcing layers of Felt and alternating moppings of Pitch.

Sixth—Where laps are left to be connected, they shall be not less than ten (10) inches wide and shall be temporarily protected by one-half (½) inch troweled course of Portland Cement Mortar. When connections with laps are made, laps shall be carefully cleaned, dried, and mopped with Pitch before proceeding with the work.

Seventh—Care shall be taken not to injure the waterproofing membrane either during application or after completion, and all finished work shall be approved before construction of permanent protective finish.

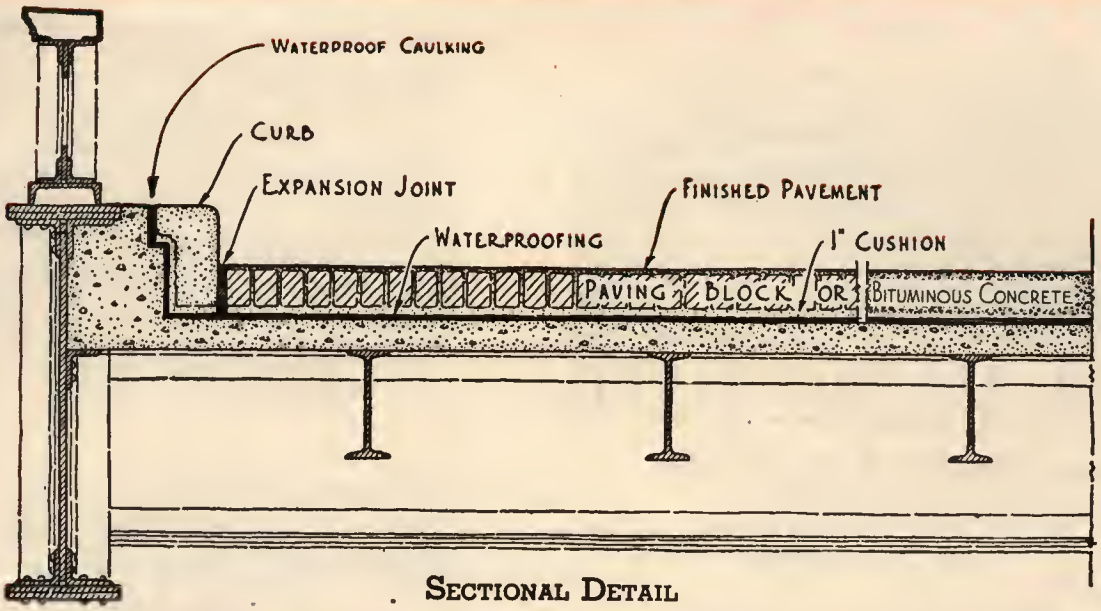
Eighth—The waterproofing shall be immediately protected by tile, brick, concrete or similar material (as specified) and a continuous course of at least one-half (½) inch of Portland Cement Mortar, one (1) to two (2) mix, applied directly over the waterproofing membrane before such finished course is installed.

Note—Where swimming pool is provided with steam coil or hot water inlet, all such pipes shall be thoroughly insulated.



DETAIL FOR SHOWER ROOM

8a/2



SECTIONAL DETAIL

This specification covers application for waterproofing membrane of pitch and felt. For alternate types and details, see page 52.

SPECIFICATIONS FOR MEMBRANE METHOD FOR WATERPROOFING ELEVATED HIGHWAYS OR BRIDGES, RAMPS, ETC.

Note—The waterproofing shall be applied by a waterproofing contractor approved by Barrett, who has had experience in successfully applying this type of Built-Up Waterproofing, and who can refer to work of a similar nature that he has executed in a satisfactory manner.

PREPARATION OF SURFACES—All surfaces on which the waterproofing is to be applied shall be firm, smooth, dry, and free from loose materials, and shall be covered by a membrane of continuous waterproofing consisting of ..... plies of BARRETT Tarred Felt, as specified and ..... moppings of BARRETT Waterproofing Pitch.

APPLICATION OF WATERPROOFING—First—Coat the entire surface on which the waterproofing is to be applied, with BARRETT Waterproofing Pitch, into which, while hot, embed a layer of BARRETT Tarred Felt, following this with alternating moppings of Pitch and layers of Felt until .....moppings of Pitch and ..... layers of Felt have been applied. Each layer of Felt shall be thoroughly rubbed into the hot Pitch, and the entire surface shall be immediately mopped with Pitch to insure thorough embedment of the Felt. The Felt shall be laid without wrinkles or buckles, and the finished membrane shall be free from pockets or blisters.

Second—Spread over the entire surface a heavy, uniform coating of BARRETT Waterproofing Pitch.

Third—Not less than .....* pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing, and the Pitch shall not be heated above three hundred and fifty (350) degrees Fahrenheit.

Fourth—At wall angles, curbs, deflection joints, and places where the waterproofing may be subjected to unusual strain, there shall be applied not less than two (2) extra reinforcing layers of Felt and alternating moppings of Pitch.

Fifth—Where laps are left to be connected, they shall be not less than ten (10) inches wide and shall be temporarily protected by one-half (½) inch troweled course of Portland Cement Mortar. When connections with laps are made, laps shall be carefully cleaned, dried, and mopped with Pitch before proceeding with the work.

Sixth—Felt and Pitch membrane shall be carried up curbs, walls, and areas around columns, pipes, etc., not less than four (4) inches above the finished wearing surface.

Seventh—Care shall be taken not to injure the waterproofing membrane either during application or after completion, and all finished work shall be approved before construction of permanent finished wearing surface.

Eighth—The finished wearing surface as specified shall be immediately installed over the waterproofing membrane.

Note No. 1—Expansion joints shall be provided throughout the finished wearing surface. All such expansion joints shall extend from the top of the finished wearing surface through to the waterproofing membrane.

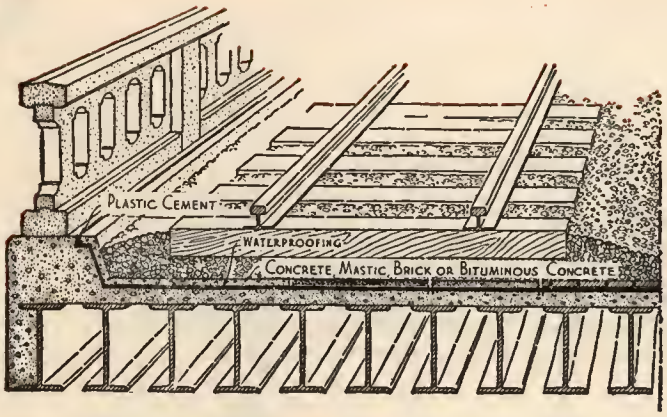
Note No. 2—Where outlets or scuppers are provided as indicated on drawings, they shall be placed level with the waterproofing course and properly Felt-stripped.

Architect's Note—For five (5) ply construction, Felt shall be laid after the two (2), two (2) and one (1) method, with alternate moppings of Waterproofing Pitch throughout. Not less than one hundred and eighty (180) pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed Waterproofing.

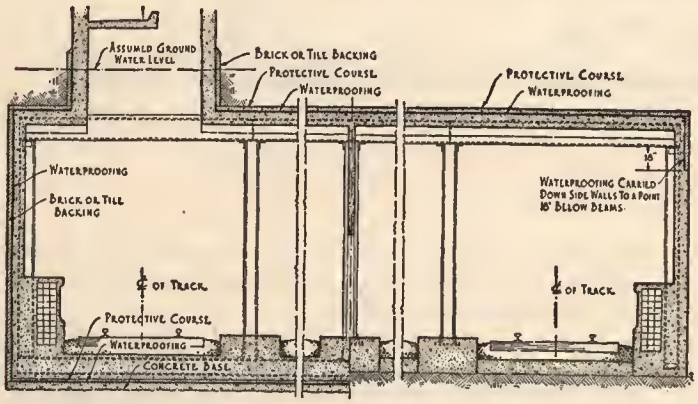
For four (4) ply construction not less than one hundred and fifty (150) pounds of Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed Waterproofing.

West Side Elevated Express Highway, New York, N. Y.
750,000 sq. ft. of Barrett waterproofing

MEMBRANE METHOD FOR WATERPROOFING
Solid Deck Railroad Bridges and Underground Subways



TYPICAL RAILROAD BRIDGE SECTION

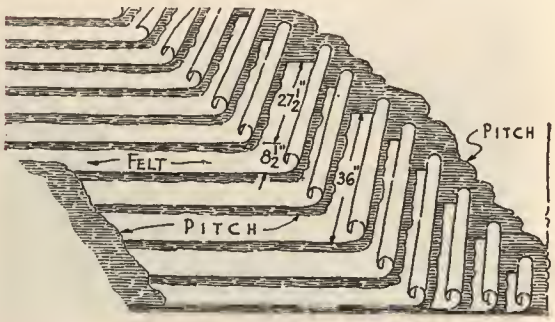


½ SECTION SHOWING PROTECTION AGAINST WATER PRESSURE

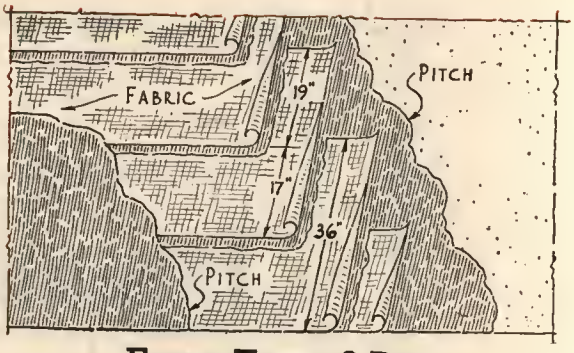
½ SECTION SHOWING PROTECTION AGAINST SURFACE WATER

TYPICAL SUBWAY SECTIONS

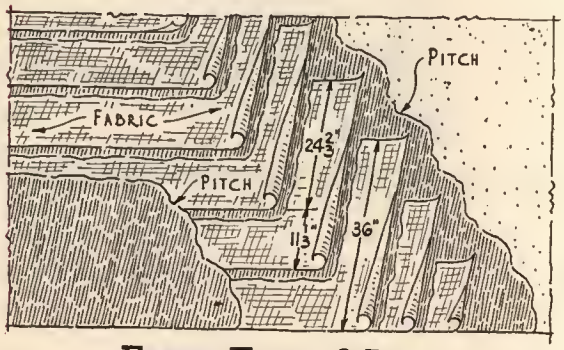
The following illustrations show various methods of waterproofing structures of this type. For specification form, refer to page 51. For Flashing Details, see page 53.



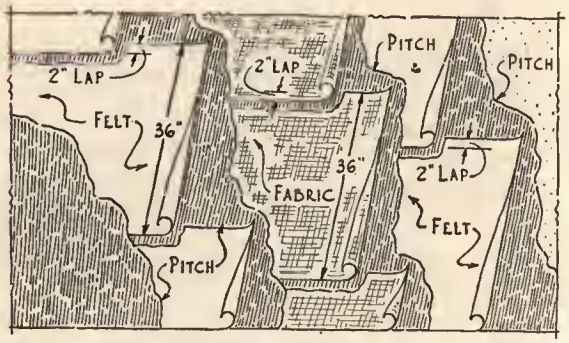
FELT AND PITCH TYPE—4 PLY



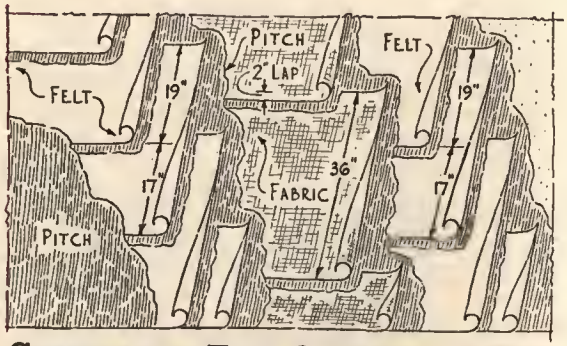
FABRIC TYPE—2 PLY



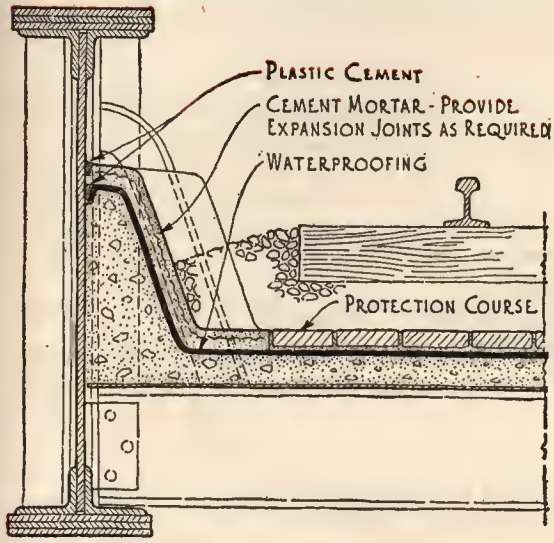
FABRIC TYPE—3 PLY



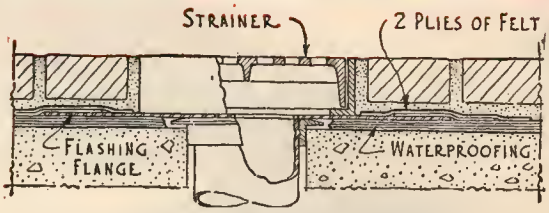
COMBINATION FELT & FABRIC—3 PLY



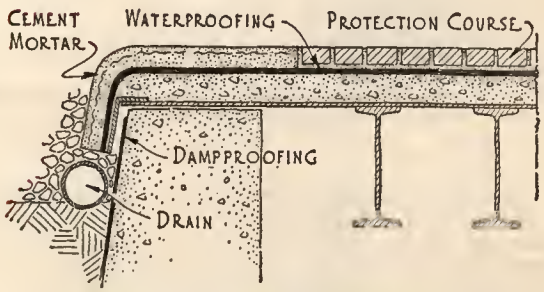
COMBINATION FELT & FABRIC—5 PLY



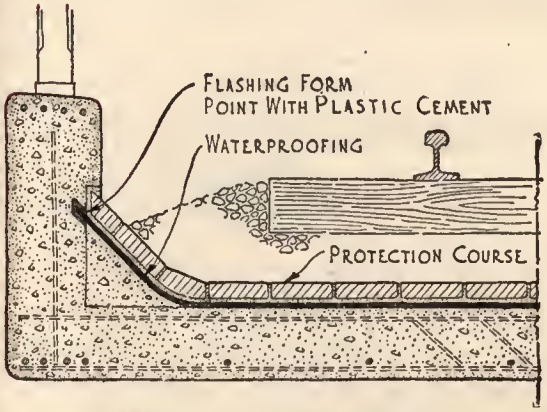
METHOD OF FLASHING AT STEEL GIRDERS



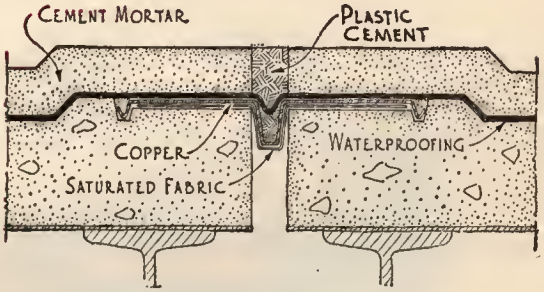
DETAIL OF DECK DRAIN



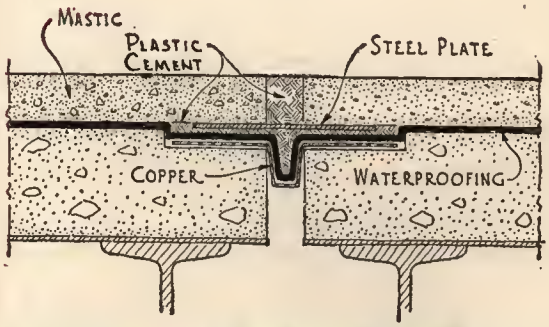
DETAIL OF WATERPROOFING AT EXPANSION END



METHOD OF FLASHING AT CONCRETE CURBS



DETAIL OF EXPANSION JOINT CONCRETE PROTECTION COURSE



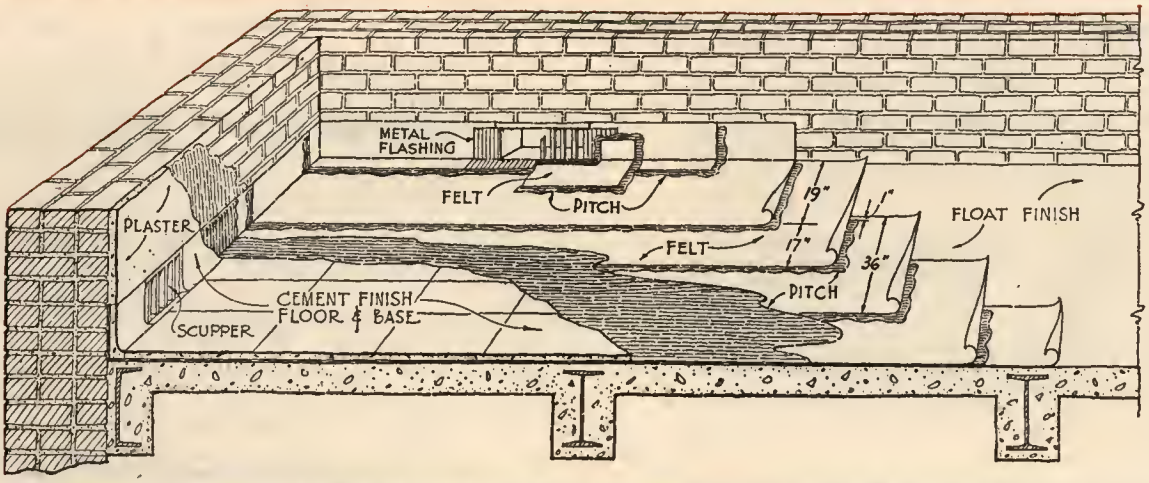
DETAIL OF EXPANSION JOINT MASTIC PROTECTION COURSE

The membrane method of waterproofing is recommended for use on solid deck railroad bridges or other bridges, ramps, highways, etc.

The types detailed conform to methods recommended by the American Railway Engineering Association, and incorporate the use of BARRETT Waterproofing Pitch and Tarred Felt and/or Waterproofing Fabric.

Architect or Engineer shall clearly indicate type to be used and specifications shall follow A.R.E.A. standards or form as outlined on page 51.

MEMBRANE METHOD FOR WATERPROOFING SUPERSTRUCTURE CONCRETE OR WOOD FLOORS



This System of Waterproofing is Designed for the Purpose of Providing a Factor of Safety Against Water Damage From Operation of Sprinkling System, or in Case of Fire, Washing of Floors, etc.

SPECIFICATION FOR CONCRETE FLOORS

First—Over the entire surface lay two (2) plies of BARRETT Tarred Felt, as specified, lapping each sheet nineteen (19) inches over preceding one, mopping with BARRETT Waterproofing Pitch to within one (1) inch of upper edge, after which spread over the entire surface a heavy, uniform coating of waterproofing pitch.

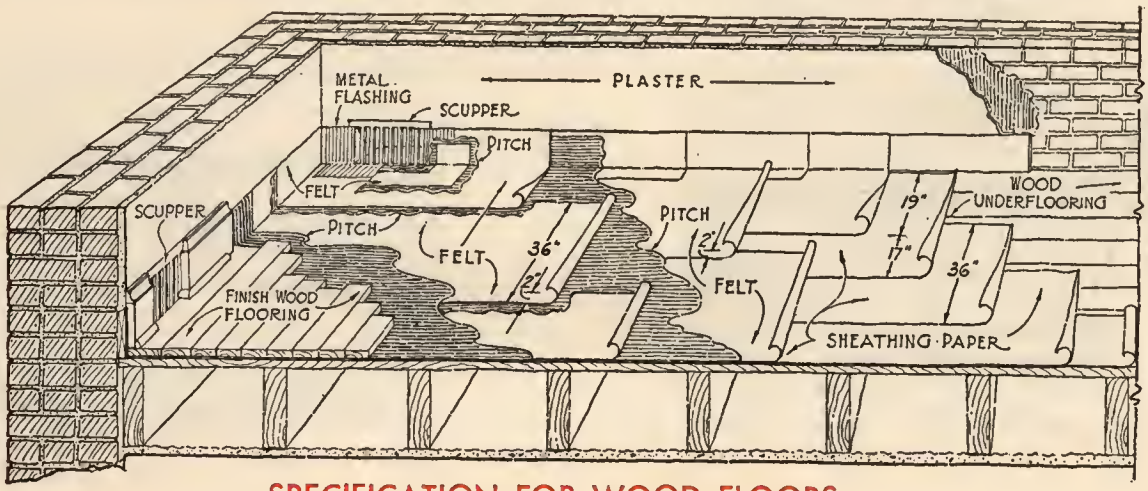
Second—Not less than sixty (60) pounds of Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing, and the Pitch shall not be heated above four hundred (400) degrees Fahrenheit.

Third—At places where the waterproofing may be subjected to unusual strain, there shall be applied not less than two (2) extra reinforcing layers of Felt and alternating moppings of Pitch.

Fourth—Felt and Pitch membrane shall be carried up walls and areas around columns, pipes, etc., not less than three (3) inches above the finished flooring, and shall be properly fastened in place and protected.

Fifth—Care shall be taken not to injure the waterproofing membrane either during application or after completion, and all finished work shall be approved before construction of permanent finished flooring.

Sixth—The waterproofing shall be immediately protected by the application of the finished flooring as specified.



SPECIFICATION FOR WOOD FLOORS

First—Over the entire surface lay two (2) thicknesses of sheathing paper or unsaturated felt, weighing not less than five (5) pounds per one hundred (100) square feet, lapping each sheet nineteen (19) inches over the preceding one, and nail as often as is necessary to hold in place.

Second—Over the entire surface lay one (1) ply of BARRETT Tarred Felt as specified, lapping each sheet two (2) inches over preceding one and nail as often as is necessary to hold in place.

Third—Coat the entire surface uniformly with BARRETT Waterproofing Pitch, after which over the entire surface lay one (1) ply of BARRETT Tarred Felt, lapping each sheet two (2) inches over preceding one, and mopping the two (2) inch lap on each sheet with BARRETT Waterproofing Pitch, so that at no place shall Felt touch Felt. Care shall be taken that all layers of Felt break joints with underlying layers.

Fourth—Over the entire surface spread a heavy, uniform coating of BARRETT Waterproofing Pitch, into which, while hot, embed floor plank.

Fifth—Not less than sixty (60) pounds of BARRETT Waterproofing Pitch shall be used for constructing each one hundred (100) square feet of completed waterproofing, and the pitch shall not be heated above four hundred (400) degrees Fahrenheit.

Sixth—(Same as paragraph "Third" above).

Seventh—(Same as paragraph "Fourth" above).

Eighth—(Same as paragraph "Fifth" above).

Ninth—The waterproofing shall be immediately protected by the application of the finished flooring as specified. Each plank shall be set in permanent position before nailing to prevent the nails from tearing the waterproofing membrane, and in no case shall the nails penetrate the flooring upon which the waterproofing rests.

SPECIFICATION FOR DAMP-PROOF PITCH COATING

CONDENSED SPECIFICATION

All exterior surfaces and footings, of foundation walls, retaining walls and abutments shall be damp-proofed by the application of one (1) prime coat of CARBOSOTA Creosote Oil and two (2) moppings of Barrett "SPECIFICATION" Pitch (as approved), both applied in strict accordance with the specifications published by Barrett.

COMPLETE SPECIFICATION

PREPARATION OF SURFACES—All surfaces to be damp-proofed shall be dry and clean and free from dirt, dust or foreign materials. All voids, cracks or open joints in the masonry shall be properly pointed up with Portland Cement Mortar before application of the damp-proofing materials.

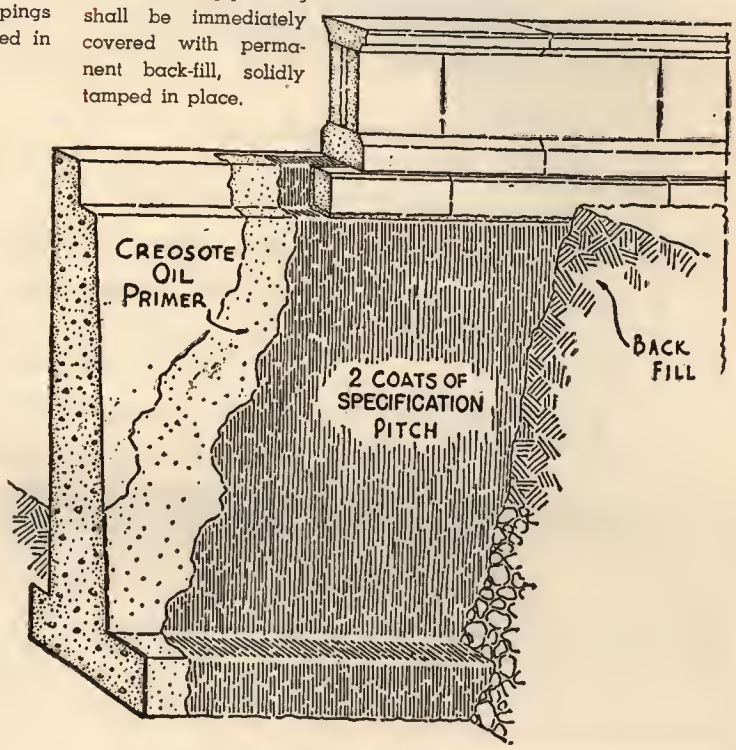
APPLICATION OF DAMP-PROOFING—First—Apply over the entire surface to be damp-proofed, a uniform priming coat of Barrett CARBOSOTA Creosote Oil.

Second—The prime coat of CARBOSOTA Creosote Oil shall be allowed to sufficiently penetrate the masonry, and before thoroughly dry, apply a uniform mop coating of Barrett "SPECIFICATION" Pitch (as approved). The Pitch shall be applied in such manner as will obtain a heavy, continuous coating of Pitch over the entire surface, filling all cracks, voids and crevices and upon completion shall present a dry, glossy appearance.

Third—After the entire surface has been completely covered with the first mopping, follow immediately with second heavy, uniform mopping of "SPECIFICATION" Pitch.

Fourth—Not less than one (1) gallon of CARBOSOTA Creosote Oil and eighty (80) pounds of Pitch shall be used for each one hundred (100) square feet of completed damp-proofing and the Pitch shall not be heated above three hundred and fifty (350) degrees Fahreinheit.

Fifth—Damp-proofing shall be immediately covered with permanent back-fill, solidly tamped in place.



PITCH COATING METHOD

SPECIFICATION USING DAMP-RESISTANT "HYDRONON" FOUNDATION COATING

CONDENSED SPECIFICATION

All exterior surfaces and footings of foundation walls, retaining walls and abutments shall be thoroughly coated with two coats of Barrett HYDRONON Foundation Coating, applied in strict accordance with the specifications published by Barrett.

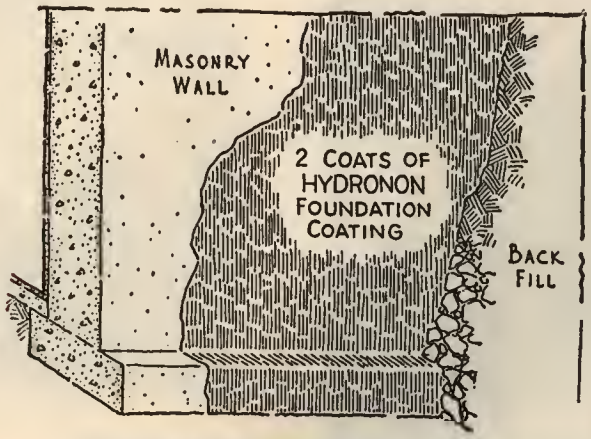
COMPLETE SPECIFICATION

PREPARATION OF SURFACES—All masonry surfaces to which HYDRONON Foundation Coating is to be applied shall be thoroughly dry and free of all dirt, grease, excess cement mortar or other foreign matter that might interfere with its adhesion and penetration. Any open areas in the concrete caused by segregation of coarse aggregates shall be filled in. Rubblestone construction shall be brought to an even surface with cement mortar. All holes and voids in masonry construction shall be carefully filled with Portland Cement Mortar, and all joints struck flush.

APPLICATION—First—The exterior surfaces and footings of foundation walls, retaining walls and abutments, shall be completely covered with two (2) coats of Barrett HYDRONON Foundation Coating applied either by brush or by spray.

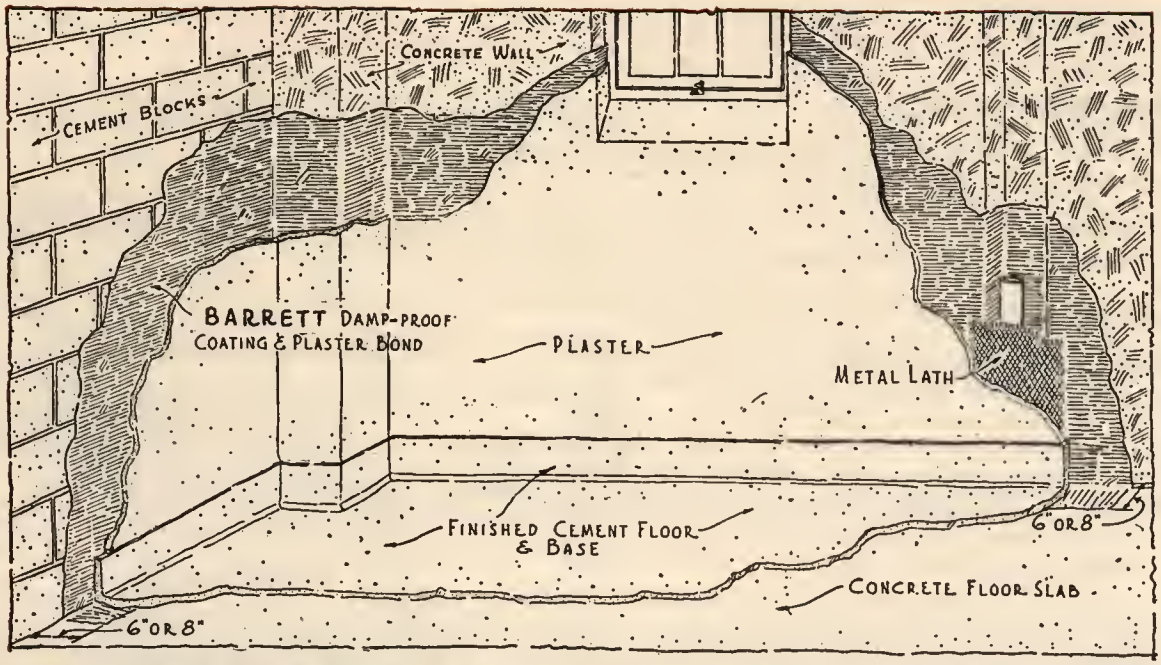
Second—The coating shall be applied thoroughly and evenly from the footings to the soil or grade level so that all surfaces present a uniform black appearance. The second coat shall be brushed or sprayed at right-angles to the first coat so as to assure thorough coverage of the entire surface with a continuous impervious film without holidays, pinholes or spots.

Third—Twenty-four (24) hours shall elapse between the first and second coats. Back-filling of the soil, where required, shall be commenced not more than seven (7) days nor less than one (1) day after the final application of HYDRONON Foundation Coating.



HYDRONON FOUNDATION COATING

DAMP-RESISTANT PLASTER BONDS FOR BASEMENTS NOT UNDER HYDROSTATIC PRESSURE



***Note*—The materials and methods referred to here provide for remedial treatment of damp basements and for a plaster bonding agent where plaster finish is desired. Where water seepage is involved, indicating the presence of water under pressure, outside waterproofing treatment, as referred to on pages 48 and 49 is recommended.**

SPECIFICATION FOR DAMP-RESISTANT PLASTER BONDS

Masonry—All holes and voids in the wall surfaces to be treated shall be carefully filled with Portland Cement Mortar and all joints struck flush. The walls shall be thorcughly dry and free from oil, grease, excess cement mortar or other foreign matter that might interfere with the bonding and penetrating properties of the coating.

Application—The interior surfaces of all exterior walls, including reveals of doors and windows, column coverings and pipe chases, shall be coated with two thorough applications of BARRETT Damp-proof Coating and Plaster Bond (No. 10 Liquid, No. 20 Semi-Mastic) or one trowel coat of No. 30 Plastic Plaster Bond.

(In the case of Hollow Tile walls only one coating of No. 10 Liquid or No. 20 Semi-Mastic shall be required.)

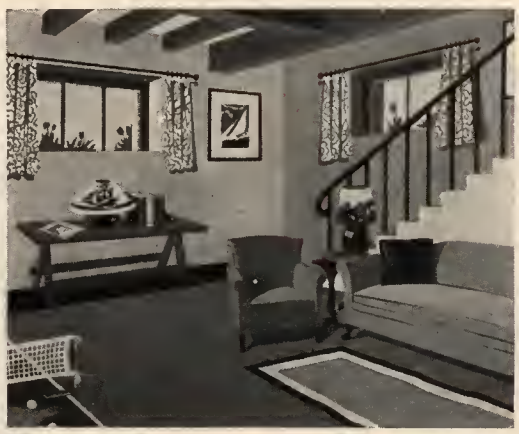
No. 10 Liquid shall be applied by brush or by compressed air spray. No. 20 Semi-Mastic shall be applied by heavy brush, mop or squeegee. No. 30 Plastic shall be applied by trowel to an average thickness of one-sixteenth ($\frac{1}{16}$) inch.

The coating shall be applied thoroughly and evenly until the surface presents a uniform black appearance, care being taken to completely coat all joints, crevices, cut-outs, wall chases and recesses, so as to form a continuous impervious film without holidays, pinholes or brown spots.

The coating shall be applied before any pipes or metal work are installed and shall completely cover the inside surfaces of all walls, as above, being carried out six (6) to eight (8) inches on rough floor slabs.

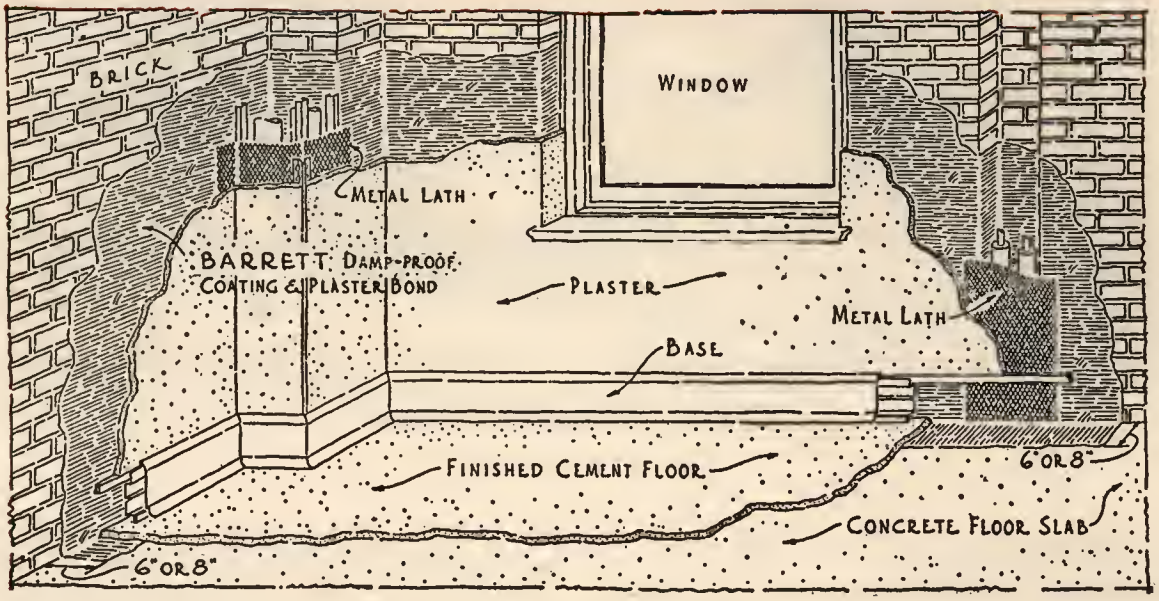
Plastering—The rough or scratch coat of wall plaster shall be applied directly to the plaster bond, but not less than twenty-four (24) hours nor more than seven (7) days after the latter has been applied.

Note: Do not use BARRETT Plaster Bond Coatings on ceilings. Where these materials are to be used in conjunction with stucco or Portland Cement Mortar wall finishes, special application instructions shall be obtained either from the Architect or from Barrett.



Above: **Finished Basement**

Left: **Plastic Method** *Right:* **Paint Method**



CONDENSED SPECIFICATION

The interior surfaces of all exterior brick walls, above grade, shall be damp-proofed with suitable BARRETT Damp-proof Coating and Plaster Bond (No. 10 Liquid, No. 20 Semi-Mastic or No. 30 Plastic) applied strictly in accordance with specifications published by Barrett.

COMPLETE SPECIFICATION

MASONRY—All holes and voids in the wall surfaces to be damp-proofed shall be carefully filled with Portland Cement Mortar and all joints struck flush. The walls shall be thoroughly dry, and free from oil, grease, excess cement mortar or other foreign matter that might interfere with the bonding and penetrating properties of the damp-proof coating.

SPECIFICATION FOR LIQUID OR SEMI-MASTIC METHOD

APPLICATION OF DAMP-PROOFING—First—The interior surfaces of all exterior masonry walls, including reveals of doors and windows, column coverings and pipe chases, shall be damp-proofed with two (2) thorough applications of BARRETT Damp-proof Coating and Plaster Bond No. 10 Liquid applied by brush or by compressed air spray (or with two (2) thorough applications of BARRETT Damp-proof Coating and Plaster Bond No. 20 Semi-Mastic, applied by heavy brush, mop or squeegee).

Second—The first coat shall be applied thoroughly and evenly until the surface presents a uniform black appearance, care being taken to completely coat all joints, crevices, cut-outs, wall chases and recesses, so as to form a continuous, impervious film without holidays, pinholes or brown spots.

Third—After the first coat of damp-proofing has been applied, at least twelve (12) hours shall elapse before application of the final coat.

Note: In the case of Hollow Tile walls only one coating of No. 10 Liquid or No. 20 Semi-Mastic shall be required.

SPECIFICATION FOR PLASTIC METHOD

APPLICATION OF DAMP-PROOFING—First—The interior surfaces of all exterior masonry walls, including reveals of doors and windows, column coverings and pipe chases, shall be damp-proofed with one (1) thorough and uniform trowel coat, of an average thickness of one-sixteenth ($\frac{1}{16}$) inch, using BARRETT Damp-proof Coating and Plaster Bond No. 30 Plastic.

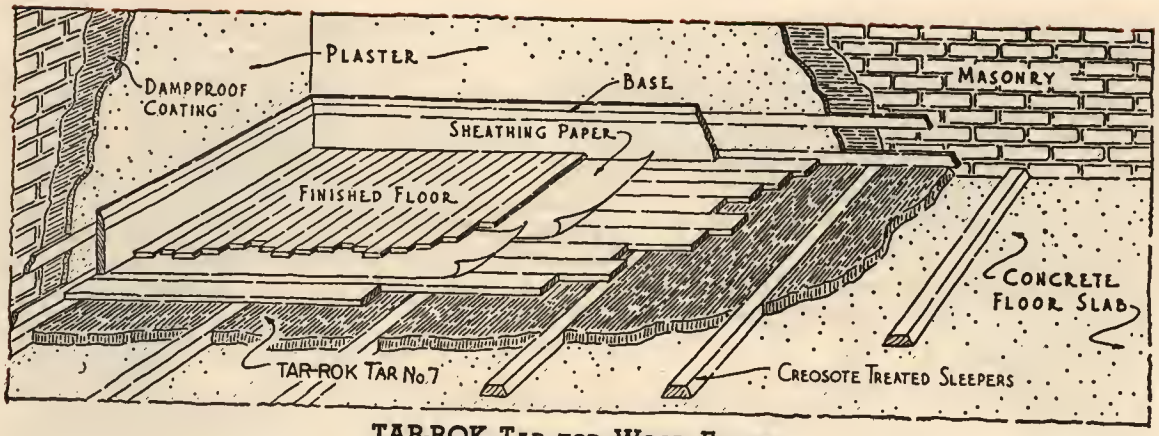
Second—The single coat of Plastic Damp-proofing shall be applied evenly and carefully, being thoroughly worked into all joints, crevices, cracks between mortar and brick, cutouts, wall chases and recesses, so as to form a continuous, impervious coating without holidays, pinholes or brown spots.

GENERAL—The damp-proofing shall be applied before any pipes or metal work are installed, and it shall completely cover the inside surfaces of all walls, as above, being carried out six (6) to eight (8) inches on rough floor slabs.

PLASTERING—The rough or scratch coat of wall plaster shall be applied directly to the final coat of damp-proofing material, but not less than twenty-four (24) hours nor more than seven (7) days after the latter has been applied.

Note: Do not use BARRETT Damp-proof Coatings on ceilings. Where these materials are to be used in conjunction with stucco or Portland Cement Mortar wall finishes, special application instructions shall be obtained either from the Architect or from Barrett.

DAMP-RESISTANT AND WOOD PRESERVATIVE METHODS FOR FLOORS
NOT UNDER HYDROSTATIC PRESSURE



TAR-ROK TAR FOR WOOD FLOORS

SPECIFICATION USING "TAR-ROK" TAR

CONCRETE FLOOR BASE—The concrete floor base shall be dry and leveled off to the proper grade.

WOOD SLEEPERS—All wood sleepers used in floor construction shall be given one preservative coating of CARBOSOTA Creosote Oil applied either by brush or by immersion, to permit thorough penetration into the wood. The wood sleepers shall then be fastened to the concrete floor base or slabs in the manner prescribed by the Architect.

APPLICATION—First—A damp-resistant course of TAR-ROK Tar shall be laid directly on the concrete floor base or slab to a thickness sufficient to bring it flush with the top edge of the sleepers after leveling with a straightedge.

Second—The damp-resistant course shall consist of fine dry sand, thoroughly mixed with BARRETT Sub-Floor Tar No. 7 in the proportion of not less than twenty-five (25) nor more than thirty (30) gallons of Tar to each cubic yard of sand. The sand shall be thoroughly dried before mixing; and both sand and Sub-Floor Tar shall be heated sufficiently to permit their mixing freely. Neither the sand nor the Tar shall be more than two hundred and twenty-five (225) degrees Fahrenheit when mixed together. If a thick white smoke arises from the mixture indicating that it is overheated, five (5) gallons more of the Tar shall be added to each cubic yard of sand.

Third—This mixture shall then be spread evenly to a thickness one-quarter (¼) to one-half (½) inch higher than the top level of the wood sleepers so that it will compact to a damp-resistant layer exactly flush with the tops of the sleepers.

Fourth—The wood floor base or the finished cement floor shall then be laid directly on the damp-resistant course and the flooring operation completed as prescribed by the Architect.

SPECIFICATION USING "HYDRONON" FOUNDATION COATING

CONCRETE FLOOR BASE—First—The concrete floor base shall be dry and leveled off to the proper grade.

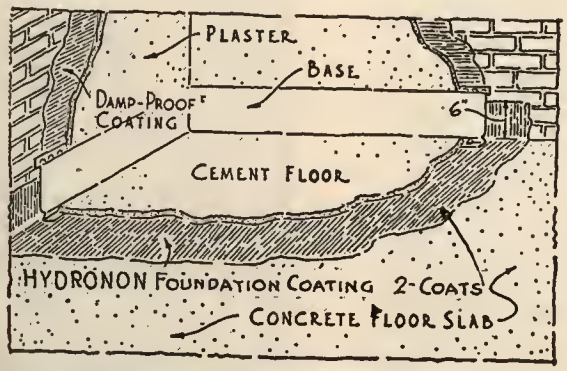
Second—Concrete shall be allowed to set for at least three (3) days before the damp-resistant coating is applied. Where high, early strength cements are used for floors which are to be loaded within twenty-four (24) to forty-eight (48) hours, the coating may be applied after the concrete has set for at least twenty-four (24) hours.

APPLICATION—First—All floors shall be covered by the application of two (2) coats of Barrett HYDRONON Foundation Coating to the concrete floor base; and the finished cement floor or wood subfloor laid therein.

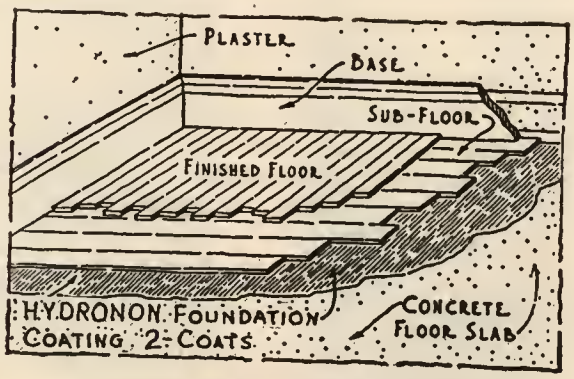
Second—The HYDRONON Foundation Coating shall be applied by brush in two (2) thorough and even coats directly over the concrete floor base until the entire surface presents a uniform black appearance. The second coat shall be brushed at right angles to the first so as to insure thorough coverage of the entire surface with a continuous, impervious film without breaks. Both coats shall be carried up on the surrounding walls, columns, etc., for a distance of at least six (6) inches.

Third—Twenty-four (24) hours shall elapse between the application of the first and second coats.

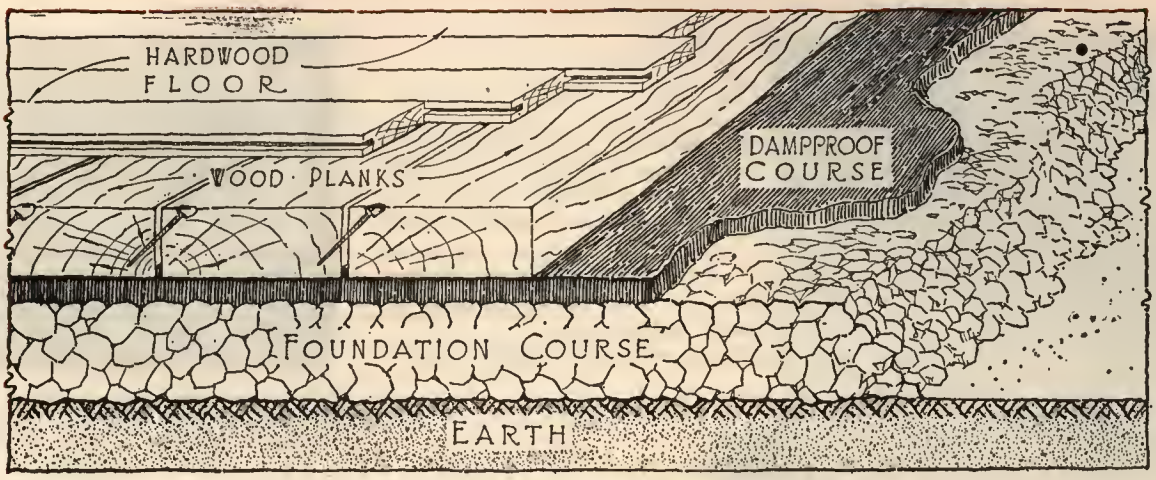
Fourth—Within twelve (12) hours after the application of the final coat, the finished cement floor or the wood subfloor shall be laid as prescribed by the Architect.



HYDRONON FOUNDATION COATING FOR CEMENT FLOORS



HYDRONON FOUNDATION COATING FOR WOOD FLOORS



APPLICATION OVER EARTH

SPECIFICATION FOR APPLICATION OVER EARTH

GRADING—The general contractor for the building shall level off the earth to proper grade to receive the foundation course, and if any filling is necessary it shall be properly puddled and rammed.

FOUNDATION COURSE—The foundation course shall consist of four (4) inch thickness of screened gravel or crushed stone, not any of which shall exceed two and one-half (2½) inches in longest dimension or be less than one-quarter (¼) inch in size, mixed with sufficient Barrett TAR-ROK Tar No. 5 (as specified) so that it will compact under a roller after being spread evenly in place. It shall then be rolled until the stones do not creep under the roller. The Tar for this course may be heated to not more than two hundred (200) degrees Fahrenheit, and in cold weather the stone shall be slightly warmed if necessary, so that the Tar will mix with the stone and the stone spread evenly. The roller used for this work shall weigh not less than three hundred (300) pounds to each foot in length. Sub-Floor Tar used in foundation course shall be approximately (See Note No. 1):

Six (6) gallons for each cubic yard of two and one-half (2½) inches to one (1) inch crushed stone;

Nine (9) gallons for each cubic yard of two and one-half (2½) inches to one-quarter (¼) inch crushed stone;

Seven (7) gallons for each cubic yard of coarse-screened gravel;

Ten (10) gallons for each cubic yard of fine-screened gravel.

Note No. 1—Only sufficient TAR-ROK Tar should be used so that the stone or gravel will properly compact and provide a suitable surface for spreading the damp-proof course.

DAMP-RESISTANT COURSE—The course shall consist of a fine sand thoroughly mixed with Barrett TAR-ROK Tar No. 7 in the proportion of not less than twenty-five (25) nor more than thirty (30) gallons of Tar to each cubic yard of sand. The sand shall be thoroughly dry before mixing, and both sand and Tar shall be heated sufficiently to make them mix freely, but neither sand nor Tar shall be hotter than two hundred and twenty-five (225) degrees Fahrenheit when being mixed together. If a thick, white smoke arises from the mixture, indicating it is overheated, five (5) gallons more Tar to each yard of sand shall be required. This mixture shall be spread evenly one and one-quarter (1¼) to one and one-half (1½) inches thick (so it will compact to one (1) inch) over the foundation, leveled with straight-edge, and followed closely with plank.

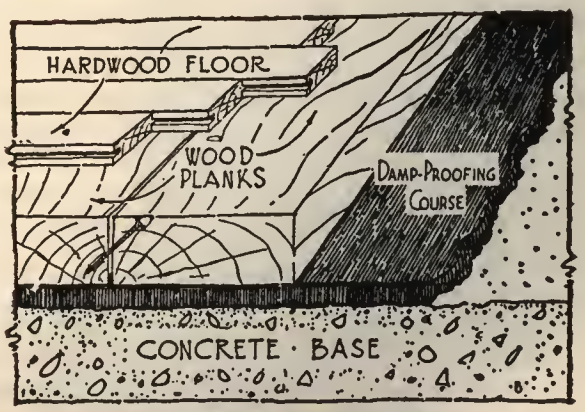
The plank shall be laid on this soft mixture, and bedded on it by hammering until the proper stability is obtained and the plank brought to a proper level and toe-nailed. If after hammering, any plank is below the proper level, the plank shall be taken up and more of the mixture spread on. (The plank and finished flooring shall be furnished and laid by other contractors.)

SPECIFICATION FOR APPLICATION OVER CONCRETE

GRADING—The general contractor for the building shall level off the concrete to proper grade to receive the TAR-ROK Tar.

DAMP-RESISTANT COURSE—The course shall consist of a fine sand thoroughly mixed with Barrett TAR-ROK Tar No. 7 in the proportion of not less than twenty-five (25) nor more than thirty (30) gallons of Tar to each cubic yard of sand. The sand shall be thoroughly dry before mixing, and both sand and Tar shall be heated sufficiently to make them mix freely, but neither sand nor Tar shall be hotter than two hundred and twenty-five (225) degrees Fahrenheit when being mixed together. If a thick, white smoke arises from the mixture, indicating it is overheated, five (5) gallons more Tar to each yard of sand shall be required. This mixture shall be spread evenly one and one-quarter (1¼) inches to one and one-half (1½) inches thick (so it will compact to one (1) inch) over the foundation, leveled with a straight-edge, and followed closely with dry, well-seasoned plank.

The plank shall be laid on this soft mixture, and bedded on it by hammering until the proper stability is obtained and the plank brought to a proper level and toe-nailed. If after hammering, any plank is below the proper level, the plank shall be taken up and more of the mixture spread on. (The plank and finished flooring shall be furnished and laid by other contractors.)



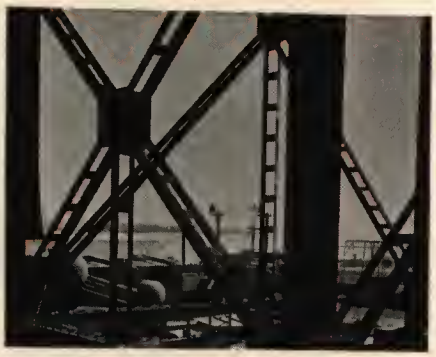
APPLICATION OVER CONCRETE

METAL PROTECTION
EVERJET Paint

Metal is best protected against corrosion by a maintenance-free paint surfacing. EVERJET Paint, a refined pitch-base coating, provides the required resistance to rust. This glossy black paint is processed uniformly from selected tars and has a high degree of elasticity. It expands and contracts with movement of the surface to which applied, and will not peel under extremes of temperature.

EVERJET Paint resists chemical attack from ordinary gas fumes, smoke and alkaline solutions present in masonry. When applied according to directions, it adheres to all clean surfaces whether metal, wood, glass, concrete or other masonry.

In built-up roofing, EVERJET Paint is used for priming metal flashing flanges, painting vent connections and other surfaces.



Where structural steel is to be encased in concrete or brick, EVERJET Paint provides necessary protection against alkaline solutions from masonry.

EVERJET Paint comes ready for application by brush . . . may be applied by spray.

APPLICATION: Furnished in brushing consistency. For spray application, BARRETT Paint Thinner may be used (less than 10% by volume). The surface to be painted must be dry, clean, and free of rust, grease or scale. On structural steel, sheet or plate iron, a coating of red lead is desirable. Two coats are applied over all metal surfaces. Allow 24 hours drying time between coats. With air pressure (about 65 lbs.) the covering capacity on a generally smooth surface approximates 400 sq. ft. per gal.

COVERAGE:

Surface	Coat	Approx. coverage (one coat)
Metal	First	300 sq. ft. per gal.
Metal	Second	500 sq. ft. per gal.
Light structural steel	First	2 to 4 tons per gal.
Wood	First	100 sq. ft. per gal.
Wood	Second	300 sq. ft. per gal.

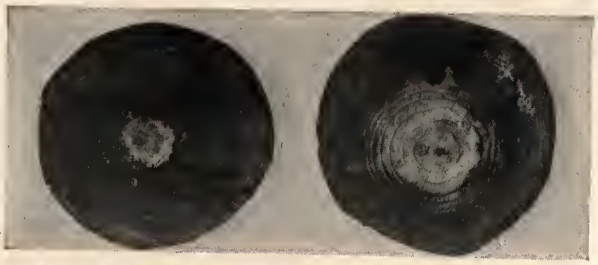
WOOD PRESERVATION
with CARBOSOTA Wood Preservative

Wood constructions, especially when in contact with ground, water, or with foundations of concrete or masonry are protected from decay and termites by treating with CARBOSOTA Wood Preservative. This toxic coal tar creosote oil retards shrinkage, swelling and checking. It remains crystal-free at 5° C. Insoluble in water, it will not leach from the wood. It is applied by non-pressure or surface treatment and penetrates the wood deeply because of its low viscosity.

In built-up roofing, CARBOSOTA Wood Preservative provides lasting protection for wood nailing strips, eaves, edgings or flashing cants.

APPLICATION: Brushed or sprayed in two coats—one coat when dipped. With open tank process the wood is subjected to a hot treatment followed by a cold or cooling treatment.

COVERAGE: The quantity required varies with the dimensions of the lumber to be treated: between 10 gal. per 1000 ft. BM for 12" x 12" timber, and 60 gal. per 1000 ft. BM for 1" x 4" boards. Specific coverages may be obtained on request from the nearest Barrett office.

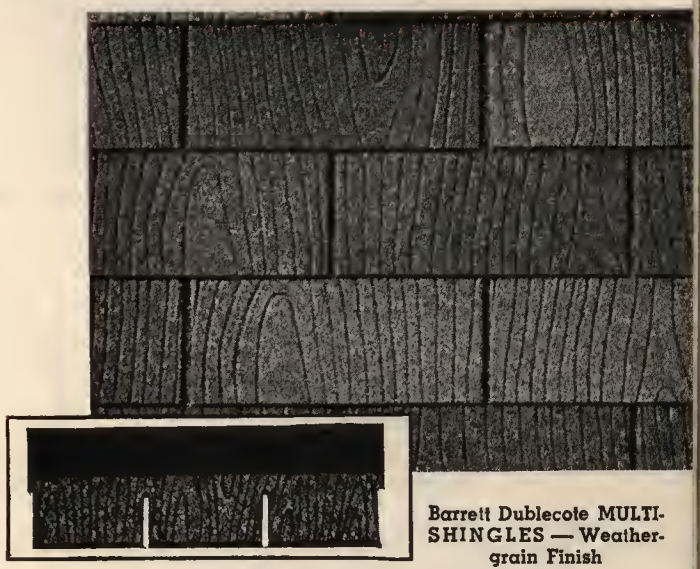


These cross sections of Creosote-treated Loblolly Pine posts show the penetrative powers of Barrett CARBOSOTA Wood Preservative

Termite damage necessitated these extensive repairs.

THE ROOF WITH A FUTURE

At least three facts about BARRETT Asphalt Shingles make them the perfect answer to the roofing requirements of America's post war housing program: first, their low cost and recognized durability; second, their light weight, which makes heavy supporting construction unnecessary, permitting lighter, more economical design of the entire house; third, their mineral surfacing which requires no periodical painting, staining or other preservative treatment. BARRETT Asphalt Singles come in a variety of patterns and colors to suit the most discriminating tastes. Shown here are two popular types. Information regarding these and other BARRETT asphalt shingles and roofings will be furnished upon request.



Barrett Dublecote MULTI-SHINGLES — Weather-grain Finish

BARRETT DUBLECOTE "MULTI-SHINGLES"

This is a double duty shingle, built, as are heavy-duty automobile tires, doubly thick and doubly strong where the shingles get the most wear. Butts have an extra layer of asphalt and an extra layer of mineral granules, which mean longer life, extra weather protection and added beauty. The handsome weather-grain effect is rapidly growing in popularity. A wide range of colors is offered, including solids, blends and tones.

SPECIFICATIONS

Size	Headlap	Exposure	Approx. Wt. per Square	Shingles per Square	Bundles per Square
12" x 36"	2"	5"	210 lbs.	80	3

Underwriters' Class C Rating.

This attractive home is protected by a Barrett Dublecote MULTI-SHINGLE roof

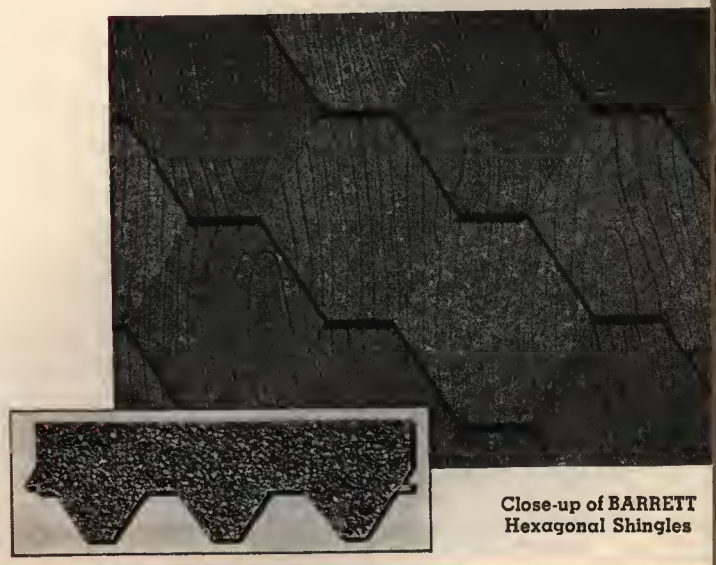
"BARRETT" HEXAGONAL SHINGLES

This ever-popular, six-sided shingle is scientifically designed to resist storm. The angled edges offer a poor target to wind from any direction—Hexagonals stay put. Application is made simpler by the dove-tailing notches and end projections in each strip, making these shingles self-aligning and self-spacing. BARRETT Hexagonal Shingles make a distinctive, good-looking roof. They come in a wide variety of handsome colors.

SPECIFICATIONS

Size	Headlap	Exposure	Approx. Wt. per Square	Shingles per Square	Bundles per Square
11⅓"x36"	2"	4⅔"	167 lbs.	86	2

Underwriters' Class C Rating.



Close-up of BARRETT Hexagonal Shingles

ROCK WOOL INSULATION

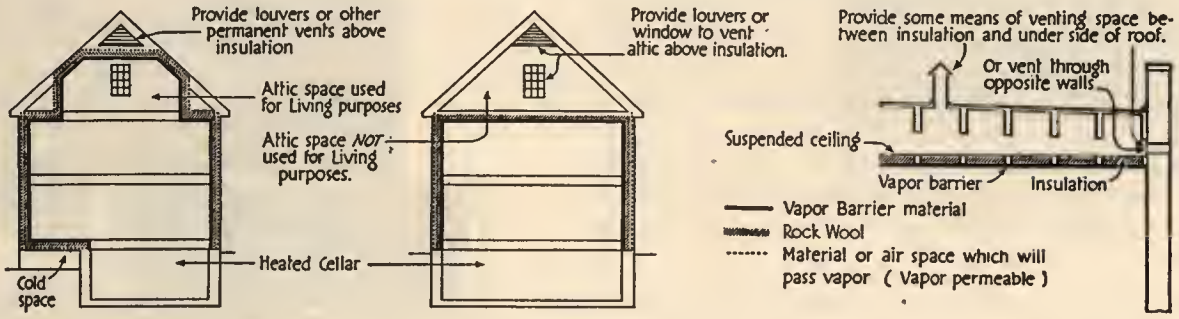
Barrett

FOR RESIDENCES AND SIMILAR STRUCTURES

The following data is presented as a guide to the proper installation of Barrett Rock Wool in typical residential and similar building structures. Where unusual job conditions are encountered, Barrett will be glad to furnish special specifications upon request.

WHERE TO USE BARRETT ROCK WOOL INSULATION IN BUILDINGS

With Proper Relationship of Vapor Barriers and Vapor Vents



INSULATING RESIDENCES AND BUILDINGS OF SIMILAR CONSTRUCTION

WITH BARRETT ROCK WOOL BATTS

Barrett Rock Wool Batts shall be furnished and installed by the contractor as follows:

The building shall be completely insulated as specified and as shown on drawings, so as to provide a continuous blanket of insulation over the entire area.

Exterior wood frame walls shall be completely filled with insulating material from top of foundation walls to roof.

Exterior solid masonry walls shall be waterproofed on the inner face (by others) before the insulation is installed. The insulating material shall be installed between the furring strips (minimum depth 2 in.) from top of foundation wall to roof.

Unfinished attic spaces shall be filled with insulating material between all ceiling joists. **Alternate:** between all roof rafters, gable and studs, in dormers, etc.

Finished attic spaces shall be filled with insulation between attic ceiling joists, roof rafters, gable and studs and in dormers.

Heated portions of the building extending beyond the main walls so that they are exposed on the under side, (i.e., sun parlor, room over porch, etc.) shall have the spaces between floor joists filled with insulating material.

Spaces outside the insulated portions of the building, such as attics, shall be adequately cross ventilated to the outside air, preferably through louvre ventilators at opposite ends of such spaces.

All insulation shall be installed in accordance with the manufacturer's instructions.

WITH BARRETT ROCK WOOL HOME INSULATION (Pneumatic Method)

Barrett Home Insulation Rock Wool shall be furnished and installed by a Barrett Building Insulation Applicator to a thickness of not less than 4 in., except where space provided is less than this, in which instance the insulation shall fill the space. The insulation density when in place shall not exceed 10 lbs. per cubic foot.

ROOF STRUCTURE INSULATION

Where normal conditions prevail under the roof, the insulation shall preferably be applied under the roof deck.

A ventilated space shall be provided between the insulation and the roof deck for removal of moisture which may migrate to surface of insulation nearest to the deck. This space shall be not less than 2 in. deep if the distance from all points therein to the nearest ventilator is not more than 15 ft. and an extra 1 in. depth of air space shall be provided for each additional 10 ft. distance or fraction thereof.

At least two ventilating openings shall be provided at opposite extremities of each insulated space. Each ventilator shall have a free or effective area of not less than 10 sq. in. per square of insulated area.

At Left:

Applying Insulation on Drop Ceiling.

DROP CEILING CONSTRUCTION—Where a ceiling is to be provided in connection with the application of insulation, a drop or hung ceiling is recommended. A vapor resistant material such as BLACK SHIELD Sheathing or a continuous coating of Barrett ANCHOR Asphalt Paint shall be applied to the upper side of the ceiling and covered with a continuous layer of Barrett Rock Wool Insulation not less than 3 in. thick.

NO CEILING CONSTRUCTION—Where there is no ceiling below the roof deck, Barrett Rock Wool Insulation shall be applied between the rafters flush with the bottom edges thereof and to a thickness of not less than 3 in. It shall be supported on a continuous vapor resistant membrane or sheet of substantial construction and reinforced as required.

CEILING ON ROOF JOIST CONSTRUCTION — Where the ceiling is attached directly to the roof joists or rafters, Barrett Rock Wool Insulation shall be pneumatically applied between the rafters to a thickness of not less than 4 in.

At Right:

Applying Insulation Over Ceiling Attached to Roof Joists.

"TARVIA" ROAD TAR AND "TARVIA-LITHIC" BITUMINOUS CONCRETE PAVING MATERIAL

The paving problem of the architect and engineer designing industrial plants, airports, housing projects, schools and private estates differs somewhat from that of the public highway official and engineer. Barrett has had long experience with all types of paving problems and submits herein recommendations for paving with TARVIA Road Tar or TARVIA-LITHIC Bituminous Concrete paving material under various conditions.

The local Barrett representative will be pleased to discuss specific projects and Barrett literature describing the various construction processes is available.

The following outline indicates recommended base construction and the type of TARVIA Road Tar or TARVIA-LITHIC Bituminous Concrete paving material construction best suited for the conditions given.

DEPTH OF MACADAM OR EQUIVALENT BASE IN INCHES

	Driveways			Sidewalks		Parking areas		Playgrounds	
	4	6	8	3	4	4	5	3	4
Industrial Plants			x		x		x		
Housing Projects		x		x		x		x	
Schools, Hospitals, etc.		x		x		x			x
Private Estates	x			x					

The depth of bases recommended for average conditions is given in terms of water-bound macadam. Gravel, slag, crushed stone or cinders may be used.

ALTERNATE TYPES OF PAVING SURFACE

	TARVIA-LITHIC	TARVIA Road Tar			
	Bituminous Concrete	Penetration Macadam	Re-Tread	KP Mix	Surface Treatment
Driveways	x	x	x		x
Sidewalks	x			x	
Parking Areas	x	x	x		x
Playgrounds	x			x	

Mill Village street paved with TARVIA Road Tar

"TARVIA" ROAD TAR

TARVIA Road Tar is a liquid which has been extensively used for highway construction and maintenance for over a third of a century. It combines readily with aggregate to form several types of paving surfaces, all of which are stable, water-proof, durable and skid-safe.

TARVIA-LITHIC Bituminous Concrete Parking Area, Industrial Plant

"TARVIA-LITHIC" BITUMINOUS CONCRETE

TARVIA-LITHIC Bituminous Concrete coated stone is manufactured by Barrett in a central mixing plant. It is delivered by truck from the plant to the job or may be shipped for longer distances in cars.

It is prepared in two regular sizes: the coarse or three-quarter inch size and the fine or chip size. The former is used for bottom courses, spread two inches thick over the foundation and rolled in place. The fine size is spread over the consolidated coarse mix to a depth of one inch and rolled in place to form the surface. A special extra-fine size is manufactured for sidewalks, playgrounds, parking areas and private driveways.

Detailed specifications for the use of TARVIA-LITHIC Bituminous Concrete are available.

LITERATURE

The two books illustrated describe fully the construction of TARVIA Road Tar and TARVIA-LITHIC bituminous paving material wearing surfaces and also contain data for estimating quantities. They will be mailed free on request.

TARVIA-LITHIC Bituminous Concrete Surfacing for Gas Stations

BETWEEN THE WORLD Barrett AND THE WEATHER SINCE 1854

THE BARRETT DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 Rector Street, New York 6, N. Y.

BARRETT "SPECIFICATION" PITCH
BARRETT "SPECIFICATION" FELT
TARRED AND ASPHALT FELTS
STEEP ROOFING PITCH
ROOFING ASPHALTS
WATERPROOFING FABRICS
FLASHING BLOCKS AND FORMS
ROOF VENT AND DRAIN CONNECTIONS
DAMP-PROOFING AND
PLASTER BOND COATINGS
ASPHALT SHINGLES AND SIDINGS
MINERAL-AND SMOOTH-SURFACED
ROLL ROOFINGS
RIGID BACKING BOARD
INSULATED SIDING
SHEATHINGS AND BUILDING PAPERS
ROOF CEMENTS AND COATINGS
PROTECTIVE PAINTS
WOOD PRESERVATIVES
ROCK WOOL INSULATION

DISTRICT OFFICES

40 Rector Street
NEW YORK 6, N. Y.

36th and Gray's Ferry Ave.
PHILADELPHIA 46, PA.

2800 S. Sacramento Ave.
CHICAGO 23, ILL.

1327 Erie Street
BIRMINGHAM 8, ALA.

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4

Flintkote

BUILT-UP ROOFING SPECIFICATIONS

ENGINEERING SERVICE

BY ROOFING ENGINEERS

Flintkote Sales Engineers are prepared to furnish definite recommendations as to the type of roof to be used with varying types of roof deck construction. Their recommendations are based on a thorough background of experience, both from practical and engineering standpoints. Any special problem may be referred to them for prompt and thorough investigation.

BUILT-UP ROOFING MATERIALS AND APPLICATION

Flintkote Built-Up Roofs for either hot or cold application are constructed of materials best suited for the particular structure. These materials are manufactured according to exacting specifications. Because of this control of manufacture, the same superior quality of materials is obtainable from all shipping points.

Application is an important feature. Flintkote Bonded Built-Up Roofs are applied by experienced roofing applicators, according to the specification requirements of The Flintkote Company and subject to the inspection of the Flintkote representative.

TYPES AND FINISHES OF FLINTKOTE BUILT-UP ROOFS

The Flintkote Company recognizes the fact that there are various types of buildings for which quality roofs are required but also that, in many cases, initial cost must be considered—either due to the fact that the construction of the building is to be such which does not warrant a heavy type of roofing, or because appropriations are limited where the intended life of the building will be relatively short.

In line with this thought the Flintkote Specifications have been made complete, by incorporating the following types of construction, each of which may be bonded for a specified term of years:

(1) Slag or Gravel Surfaced Asphalt Roofs—(10, 15 or 20 year Bond)

(2) Mineral Surfaced Asphalt Roofs—(10 or 15 year Bond)

(3) Slag or Gravel Surfaced Pitch Roofs—(10, 15 or 20 year Bond)

(4) Smooth Surfaced Viskalt Roofs—(10 year Bonds). Not bondable in the States of the Southern Division.

(5) Cold Process Built-Up Roofs Surfaced with Static Asphalt (refer to Flintkote Dist. office for bond period)

Any of the above roofs may be bonded as indicated when applied according to the Flintkote detailed roofing specification.

When a Flintkote Built-Up Roof is specified, one may have the assurance—

First, that a durable, Bonding, waterproofing bitumen is used providing a shield against the elements and giving years of service and protection to the interior of the structure.

Second, that various layers of a superior roofing felt are provided as a reinforcing to hold this bitumen in place against severe climatic changes.

These provide the basic requirements for permanent roofing.

BUILT-UP ROOFING BONDS

When a Flintkote Roofing Bond is required, the roof shall be inspected during application by an authorized Flintkote Inspector, who shall cut the roof if he considers it necessary to check the application. Roofing Bonds can only be furnished when the roof is applied by an approved Flintkote Franchise Roofer in strict accordance with the detailed specifications of The Flintkote Company.

If flashings are installed by the authorized roofer in strict accordance with Flintkote Standard Flashing Specifications and used in conjunction with a bonded roof specification, a flashing endorsement may be issued covering such flashing for a period of years corresponding to the type of flashing used.

FLINTKOTE COLD PROCESS FELTS

A superior type of saturated and heavily precoated felt used in Flintkote Cold Process Built-Up Roofing (Cold Application).

Cold Process Felt is heavily coated on both sides to provide a pliable and high strength felt for the construction of Cold Process Roofs. Because of its exceptional bonding qualities, it is the preferred type of felt for smooth surfaced roofs coated with Static Asphalt.

This type of felt is made in one weight only. Average approximate weight is 53 lbs. per 108 sq. ft. Furnished in one square rolls of 108 sq. ft. 36" wide.

FLINTKOTE VISKALT* SATURATED FELT

Highest Grade Viskalt Saturated Felt Used in Flintkote Built-Up Roofing (Hot Application)

Viskalt Saturated Felt is a particular type of roofing felt, superior in both material and manufacture, and especially adapted for use in built-up roofing construction. This felt is super-saturated with the finest quality of asphalt and because of the superior quality of the saturant, longer life is assured to the roofing felt.

This type of felt is made in two weights, No. 15 and No. 30. Furnished in rolls of 432 and 216 square feet respectively. The rolls weigh approximately 60 lbs. each and carry the Underwriters' Label.

* T.M. Reg. U.S. Pat. Off.

SELECTING THE PROPER ROOF

CONDITIONS DETERMINING THE PROPER TYPE OF ROOFING TO USE

The relative quality of 20, 15 or 10 year built-up roofs of given materials is largely a matter of plies. The architect or engineer can best determine for his client which is the most desirable.

In selecting the proper roof finish, the determining factors are as follows:

(1) Base on which roof is to be laid—(Concrete, gypsum, wood, etc.).

(2) Desirability of the use of Flintkote Roof Insulation.

(3) Quality of roof—(20-year, 15-year, 10-year).

(4) Incline—(Limitation of type of roof).

The matter of surface finish, type and quality is more a matter of preference depending however on the incline of the roof surface. Climatic conditions and other factors peculiar to the locality of the building which are known to the architect or owner may also determine the type of roof and the surface finish.

TABULATED SPECIFICATION FOR VARIOUS TYPES OF BUILT-UP ROOFING (HOT APPLICATION)

Period of bond—years	Specification Designation	Page No.	Limitations of roof incline in inches per foot	Surface finish	Construction: Number of plies of felt	Construction: Layers of bitumen	Material weights: Primer	Sheathing paper	Base sheet	Asphalt felt	Tarred felt	Rex construction	Cap sheet	Asphalt	Pitch	Viskalt	Static roof coating	Gravel	Slag	Weight per square: Smooth	Mineral surfaced	Gravel surfaced	Slag surfaced	Underwriters classification
Standard Specifications for Non-combustible Decks																								
20	†A-3-C	8	¼ up to 3"	Gravel or slag	Four #15 felts (asphalt)	5	9*			60				190				400	300			659	559	A
20	†A-4-C	11	¼ up to 2"	Gravel or slag	Four #15 felts (tar)	5					60				200			400	300			660	560	A
15	†B-3-C	8	¼ up to 3"	Gravel or slag	Three #15 felts (asphalt)	4	9*			45				160				400	300			614	514	A
15	†B-4-C	11	¼ up to 2"	Gravel or slag	Three #15 felts (tar)	4					45				175			400	300			620	520	A
15	†B-2-C	10	1 up to 6"	Mineral	Two #15 felts (asphalt) Rex Construction	4	9			30		110		120							269			C
10	†C-2-C	10	1 up to 6"	Mineral	One #15 felt (asphalt) Rex Construction	3	9			15		110		90							224			C
10	†C-1-C	9	½ up to 1"	Viskalt	Three #15 felts (asphalt)	4	9			45						130				184				C
10	C-3-C-S	9	2 up to 4"	Slag	Three #15 felts	4				45				130					275				450	

*Primer required only on gypsum decks.
†Over rigid insulation or over steel decks with at least ½-in. layer of insulation any specification marked "†" may be used, provided that on all decks having inclines of over 1 in. per foot provision for nailing is made.

Standard Specifications for Wood or Precast Gypsum Decks																								
20	A-3-W	4	¼ up to 3"	Gravel or slag	One #30 felt (asphalt) Three #15 felts (asphalt)	4			30	45				150				400	300			625	525	A
20	A-4-W	7	¼ up to 2"	Gravel or slag	Five #15 felts (tar) One sheathing paper	4		5			75				150			400	300			630	530	A
15	B-3-W	4	¼ up to 3"	Gravel or slag	One #30 felt (asphalt) Two #15 felts (asphalt)	3			30	30				120				400	300			580	480	A
15	B-4-W	7	¼ up to 2"	Gravel or slag	Four #15 felts (tar) One sheathing paper	3		5			60				125			400	300			590	490	A
15	B-2-W	6	2 up to 9"	Mineral	Two #15 felts (asphalt) Rex Construction	3		5		30		110		90							235			C
10	C-2-W	6	2 up to 9"	Mineral	Two #15 felts (asphalt) Rex Construction	2				30		110		60							200			C
10	C-1-W	5	½ up to 1"	Viskalt	One #30 felt (asphalt) Two #15 felts (asphalt)	3			30	30						100				160				C
10	C-3-W-S	5	2 up to 4"	Slag	Four #15 felts	4				60				125					275				460	
Standard Specifications for Under Promenade Tile																								
10	C-1-P	12	Up to 1"	Promenade Tile	Five #15 felts (asphalt)	6	9			75				220					304					
10	C-4-P	12	Up to 1"	Promenade Tile	Five #15 felts (tar)	6					75				220				295					

Note: Specifications for use in the eleven western states are different from above, and can be obtained from offices of PIONEER-FLINTKOTE COMPANY (see page 24 for addresses, etc.). No bonds are issued for projects in that area. Slag or gravel surfaced roofs are recommended for use in or south of the states of South Carolina, Georgia, Tennessee, Arkansas and Oklahoma as we will not bond smooth-surfaced asphalt roofs in that area.

NOTE: SEE PAGES 17-23 FOR COLD PROCESS BUILT-UP ROOF SPECIFICATIONS

PRELIMINARY REQUIREMENTS FOR ALL DECKS

Deck—Wood decks shall be of tongue and groove lumber, smooth, firm, free from loose or curled boards. Large cracks, open joints or open knot holes shall be covered with metal strips nailed to deck. Precast gypsum decks shall be hard, dry, firmly set with interlocking joints, well pointed up and free from any unevenness which might injure the roofing. Non-combustible decks shall be smooth, dry, free from high spots, depressions, debris and free from frost. Any unevenness in the deck surface shall be corrected before the application of roofing. Precast slabs shall have a nailable surface and shall be evenly and firmly set with interlocking joints well pointed up. Book tile shall be covered with ¾" cement mortar. Steel decks shall in all cases be covered with an approved type of rigid roof insulation before application of roofing felts. All decks shall be properly graded and drains shall be set to allow free flow of water.

Wood Nailing Strips—On inclines over 1" per foot, non-combustible decks of the poured type must permit secure nailing or shall have 1 x 2" wood nailing strips (set by general contractor when deck is poured), flush with deck surface, parallel with incline on not over 3 ft. centers, and similar nailing strips centered 3" from open edges or 3" from walls shall be provided for nailing of metal gravel stops and metal base flashing.

Cants—3" x 3" wood cant strips, coated with asphalt primer, should be installed at all angles formed by wall and roof deck.

Asphalt—Asphalt shall not be heated over 425°F. and shall be periodically tested for temperature with thermometer.

DECK—Wood or Precast Gypsum

ASPHALT—with Gravel or Slag Surfacing

INCLINE—¼" to 3" per ft.

20-year roof—Specification **A-3-W**

PRELIMINARY REQUIREMENTS—See Page 3

APPLICATION

Over the deck apply either a layer of No. 30 Viskalt Saturated Felt lapped 4 in. horizontally and vertically or two layers of No. 15 Viskalt Saturated Felt lapped 19 in., laid dry. Nail the No. 30 Felt along laps on 12 in. centers and through center of sheet in two rows 10 in. apart on 12 in. centers staggered, with nails and flat caps. If two layers of No. 15 Felts are used, nail 2 in. up from bottom lap edge on 12 in. centers with nails and flat caps. Felts shall cover cant strip and shall be nailed into cant strip as required to hold in place or shall turn up on walls 3 in.

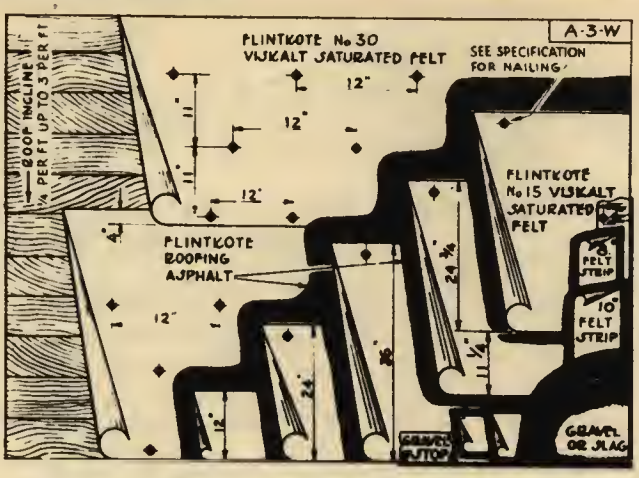
Cover all valleys on roof deck with two layers of felt extending 18 in. on either side of valley cemented solidly to the base felts.

Over this base course apply a heavy mopping of asphalt and embed three layers of No. 15 Viskalt Saturated Felts, lapped 24¾ in. Felts shall cover cant strip or turn up on walls 2 in. Cement felts solidly so that in no place shall felt touch felt. Broom in felts immediately behind mop to obtain solid bond and to eliminate void pockets between felts. Nail each course of felt 1½ in. from top edge on 12 in. centers with nails and flat caps.

Roofing on flat surface shall be extended up on steep surface 24 in. and nailed at top edge on 12 in. centers. Roofing on the steep surface should be carried down over flat surface to provide a 24 in. lap.

Edging—Install metal gravel stops at all eaves and gables. Cover metal edge on roof with an 8 in. and then a 10 in. wide strip of No. 15 Felt cemented in hot asphalt.

Flashing—At walls apply copper base and cap flashing or Flintkote Standard Base Flashing with copper cap flashing. Apply copper base and cap flashing around all chimney stacks or heat flues.



Where any structural member, vent pipe or other projection extends through the roof surface, install suitable type of copper "pitch pocket" or other approved type of metal base and collar flashing.

Surfacing—Coat the surface of felts with not less than 60 lbs. of asphalt per 100 sq. ft. poured from a dipper, and while hot embed not less than 400 lbs. of gravel or 300 lbs. of slag per 100 sq. ft.

General—Not less than 30 lbs. of asphalt per 100 sq. ft. shall be used for embedding each layer of felt.

BOND—THE FLINTKOTE COMPANY will issue its standard 20 year bond (on roof areas of over 2500 sq. ft. in the United States except in the states of the Pacific Coast zone) provided deck surface (and roof insulation, if used) is acceptable to The Flintkote Company and provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification A-3-W.

ASPHALT—with Gravel or Slag Surfacing

INCLINE—¼" to 3" per ft.

15-year roof—Specification **B-3-W**

PRELIMINARY REQUIREMENTS—See Page 3

APPLICATION

Over the deck apply either a layer of No. 30 Viskalt Saturated Felt lapped 4 in. horizontally and vertically or two layers of No. 15 Viskalt Saturated Felt lapped 19 in., laid dry. Nail the No. 30 Felt along laps on 12 in. centers and through center of sheet in two rows 10 in. apart on 12 in. centers staggered, with nails and flat caps. If two layers of No. 15 Felts are used, nail 2 in. up from bottom lap edge on 12 in. centers with nails and flat caps. Felts shall cover cant strip and shall be nailed into cant strip as required to hold in place or shall turn up on walls 3 in.

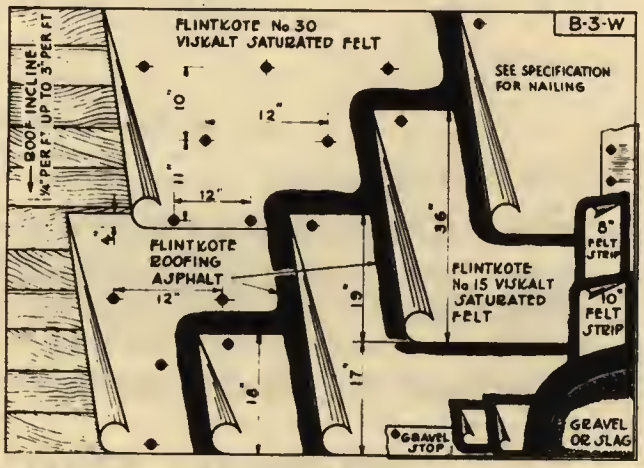
Cover all valleys on roof deck with two layers of felt extending 18 in. on either side of valley cemented solidly to the base felts.

Over this base course apply a heavy mopping of asphalt and embed two layers of No. 15 Viskalt Saturated Felt, lapped 19 in. Felts shall cover cant strip or turn up on walls 2 in. Cement felts solidly so that in no place shall felt touch felt. Broom in felts immediately behind mop to obtain solid bond and to eliminate void pockets between felts. Nail each course of felt 1½ in. from top edge on 12 in. centers with nails and flat caps.

Roofing on flat surface shall be extended up on steep surface 24 in. and nailed at top edge on 12 in. centers. Roofing on the steep surface should be carried down over flat surface to provide a 24 in. lap.

Edging—Install metal gravel stops at all eaves and gables. Cover metal edge on roof with an 8 in. and then a 10 in. wide strip of No. 15 Felt cemented in hot asphalt.

Flashing—At walls apply copper base and cap flashing or Flintkote Standard Base Flashing with copper cap flashing. Apply copper base and cap flashing around all chimney stacks or heat flues.



Where any structural member, vent pipe or other projection extends through the roof surface, install suitable type of copper "pitch pocket" or other approved type of metal base and collar flashing.

Surfacing—Coat the surface of felts with not less than 60 lbs. of asphalt per 100 sq. ft. poured from a dipper, and while hot embed not less than 400 lbs. of gravel or 300 lbs. of slag per 100 sq. ft.

General—Not less than 30 lbs. of asphalt per 100 sq. ft. shall be used for embedding each layer of felt.

BOND—THE FLINTKOTE COMPANY will issue its standard 15 year bond (on roof areas of over 2500 sq. ft. in the United States except in the states of the Pacific Coast zone) provided deck surface (and roof insulation, if used) is acceptable to The Flintkote Company and provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification B-3-W.

ASPHALT—with Slag Surfacing

INCLINE (Steep)—2″ to 4″ per ft.

10-year roof—Specification **C-3-W-S**

PRELIMINARY REQUIREMENTS—See Page 3

APPLICATION

Cover all valleys on roof deck with a layer of No. 30 Viskalt Saturated Felt nailed into deck on 12 in. centers and two layers of No. 15 Viskalt Saturated Felt extending 18 in. on either side of valley and solidly cemented to the No. 30 felt.

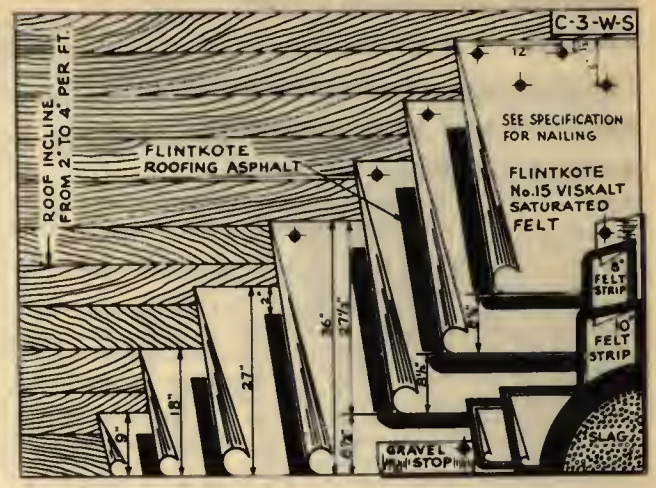
Over the deck apply four layers of No. 15 Viskalt Saturated Felt, lapped 27½ in. Cement felts solidly in steep roofing asphalt between laps keeping asphalt back 2 in. from top edge. Broom in felts immediately behind mop to obtain solid bond and to eliminate void pockets between felts. Nail each course of felt with two rows of nails and flat caps, the first row 1½ in. down from top edge and the second row 6 in. down from top edge on 12 in. centers, staggered.

Roofing on flat surface shall be extended up on steep surface at least 24 in. and nailed on 12 in. centers. Roofing on the steep surface should be carried down over flat surface to provide a 24 in. flap.

Edging—Install metal gravel stops at all eaves and gables. Cover metal edge on roof with an 8 in. and then a 10 in. wide strip of No. 15 felt each solidly cemented in steep hot asphalt.

Flashing—At walls apply metal base and cap flashing or Flintkote Standard Base Flashing with metal cap flashing. Apply metal base and cap flashing around all chimney stacks or heat flues.

Where any structural member, vent pipe or other projection extends through the roof surface, install suitable type of copper "pitch pocket" or other approved type of metal base and collar flashing.



Surfacing—Coat the surface of felts with not less than 50 lbs. of steep asphalt per 100 sq. ft., and while hot embed 275 lbs. of slag per 100 sq. ft.

General—Not less than 25 lbs. of asphalt per 100 sq. ft. shall be used for embedding each layer of felt.

BOND—THE FLINTKOTE COMPANY will issue its standard 10 year bond (on roof areas of over 2500 sq. ft. in the United States except in the states of the Pacific Coast zone) provided deck surface (and roof insulation, if used) is acceptable to The Flintkote Company and provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification C-3-W-S.

VISKALT—Smooth Surface

INCLINE—½″ to 1″ per ft.

10-year roof—Specification **C-1-W**

PRELIMINARY REQUIREMENTS—See Page 3

APPLICATION

Over the deck apply either a layer of No. 30 Viskalt Saturated Felt lapped 4 in. horizontally and vertically or two layers of No. 15 Viskalt Saturated Felt lapped 19 in., laid dry. Nail the No. 30 Felt along laps on 12 in. centers and through center of sheet in two rows 10 in. apart on 12 in. centers staggered, with nails and flat caps. If two layers of No. 15 Felts are used, nail 2 in. up from bottom lap edge on 12 in. centers with nails and flat caps. Felts shall cover cant strip and shall be nailed into cant strip as required to hold in place or shall turn up on walls 3 in.

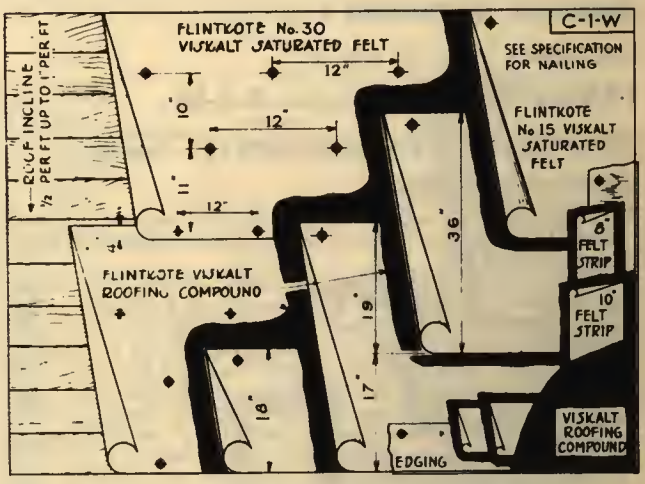
Cover all valleys on roof deck with two layers of felt extending 18 in. on either side of valley cemented solidly to the base felts.

Over this base course apply a heavy mopping of Flintkote Viskalt and embed two layers of No. 15 Viskalt Saturated Felt lapped 19 in. Felts shall cover cant strip or turn up on walls 4 in. Cement felts solidly in Viskalt for full width so that in no place shall felt touch felt. Broom in felts immediately behind mop to obtain solid bond and to eliminate void pockets between felts. Nail each course not over 1½ in. from top edge on 12 in. centers with nails and flat caps.

Roofing on flat surface shall be extended up on steep surface at least 24 in. and nailed on 12 in. centers. Roofing on the steep surface should be carried down over flat surface to provide a 24 in. lap.

Edging—Install metal edging at all eaves and gables. Cover metal edge on roof with an 8 in. and then a 10 in. wide strip of No. 15 Felt cemented in hot Viskalt.

Flashing—At walls apply metal base and cap flashing or Flintkote Standard Base Flashing with metal cap flashing. Apply metal base and cap flashing around all chimney stacks or heat flues.



Where any structural member, vent pipe or other projection extends through the roof surface, install suitable type of copper "pitch pocket" or other approved type of metal base and collar flashing.

Surfacing—Coat the surface of felts with not less than 40 lbs. of Viskalt.

General—Not less than 30 lbs. of Viskalt per 100 sq. ft. shall be used for embedding each layer of felt.

BOND**—THE FLINTKOTE COMPANY will issue its standard 10 year bond (on roof areas of over 2500 sq. ft. in the United States except in the states of the Pacific Coast zone and in the Southern States listed below) provided deck surface (and roof insulation, if used) is acceptable to The Flintkote Company and provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification C-1-W.

****NOTE:** This specification will not carry any bond or guarantee in the following states: South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi Louisiana, Arkansas, Texas and Oklahoma.

DECK—Wood or Precast Gypsum

MINERAL SURFACED Roofing

INCLINE—1″ to 6″ per ft.

15-year roof—Specification B-2-W

PRELIMINARY REQUIREMENTS—See Page 3

APPLICATION

Rex† Construction Roofing shall be cut into lengths of either 12 ft. or 18 ft. and shall be stacked in flat piles at least 24 hours before application.

Over deck apply one layer of sheathing paper lapped 2 in. and nailed occasionally into deck.

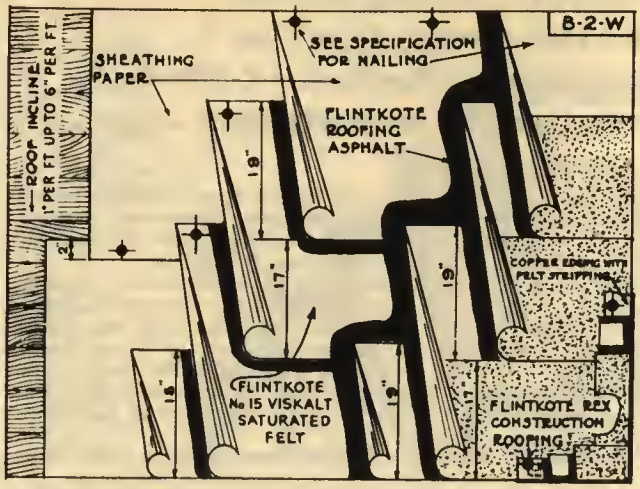
Then apply two layers of No. 15 Viskalt Saturated Felt, lapped 19 in., backnailed 1½ in. from top on 12 in. centers with nails and flat caps and cemented solidly between laps. Felts shall cover cant strip and shall be nailed into cant strip as required to hold in place or shall turn up on walls 3 in.

Cover all valleys on roof deck with two layers of No. 15 Viskalt Saturated Felt extending 18 in. on either side of valley and cemented solidly to the base felts.

Over this base course apply a heavy mopping of asphalt and embed Rex Construction Roofing, lapped 19 in., with 6 in. vertical lap. Felts shall cover cant strip or turn up on walls 2 in. Cement felts solidly so that in no place shall felt touch felt. Nail Rex Construction Roofing through selvage edge with two rows of nails and flat caps, the first row 2 in. down from top edge and the second row 10 in. down from top edge on 12 in. centers, staggered.

Roofing on flat surface shall be extended up on steep surface at least 24 in. and nailed on 12 in. centers. Roofing on the steep surface should be carried down over flat surface to provide a full 24 in. lap.

Edging—Install metal edging at all eaves and gables. Cover metal edge on roof with a 6 in. strip of No. 15 felt cemented in hot asphalt and an 8 in. mineral surfaced strip cemented in hot asphalt or in plastic fibrated cement. †T.M. Reg. U.S. Pat. Off.



Flashing—At walls apply copper base and cap flashing or Flintkote Standard Base Flashing with copper cap flashing. Apply copper base and cap flashing around all chimney stacks or heat flues.

Where any structural member, vent pipe or other projection extends through the roof surface, install suitable type of copper "pitch pocket" or other approved type of metal base and collar flashing.

General—Not less than 30 lbs. of asphalt per 100 sq. ft. shall be used for embedding felt and each layer of Rex Construction.

BOND—THE FLINTKOTE COMPANY will issue its standard 15 year bond (on roof areas of over 2500 sq. ft. in the United States except in the states of the Pacific Coast zone) provided deck surface (and roof insulation, if used) is acceptable to The Flintkote Company and provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification B-2-W.

MINERAL SURFACED Roofing

INCLINE—1″ to 6″ per ft.

10-year roof—Specification C-2-W

PRELIMINARY REQUIREMENTS—See Page 3

APPLICATION

Rex Construction Roofing shall be cut into lengths of either 12 ft. or 18 ft. and shall be stacked in flat piles at least 24 hours before application.

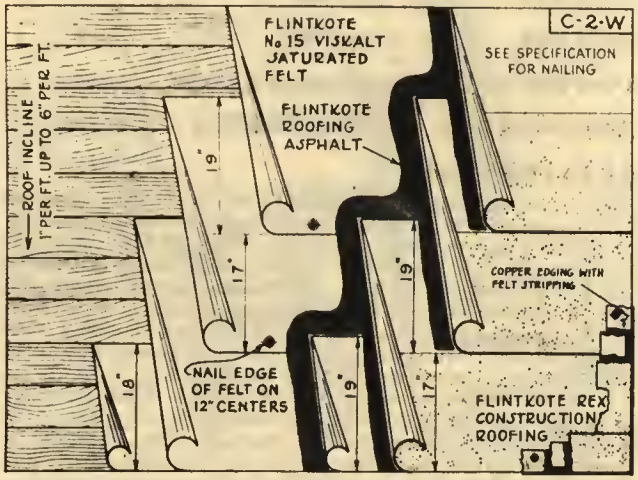
Over the deck apply either a layer of No. 30 Viskalt Saturated Felt lapped 4 in. horizontally and vertically or two layers of No. 15 Viskalt Saturated Felt lapped 19 in., laid dry. Nail the No. 30 Felt along laps on 12 in. centers and through center of sheets in two rows 10 in. apart on 12 in. centers staggered with nails and flat caps. If two layers of No. 15 Felt are used, nail 2 in. up from bottom lap edge on 12 in. centers with nails and flat caps. Felts shall cover cant strip and shall be nailed into cant strip as required to hold in place or shall turn up on walls 3 in.

Cover all valleys on roof deck with two layers of No. 15 Viskalt Saturated Felt extending 18 in. on either side of valley and cemented solidly to the base felt.

Over this base course apply a heavy mopping of asphalt and embed Rex Construction Roofing, lapped 19 in., with 6 in. vertical lap. Felts shall cover cant strip or turn up on walls 2 in. Cement felts solidly in asphalt so that in no place shall felt touch felt. Nail each course of Rex Construction Roofing through selvage edge with two rows of nails and flat caps, the first row 2 in. down from top edge and the second row 10 in. down from top edge on 12 in. centers, staggered.

Roofing on flat surface shall be extended up on steep surface at least 24 in. and nailed on 12 in. centers. Roofing on the steep surface should be carried down over the flat surface to provide a full 24 in. lap.

Edging—Install metal edging at all eaves and gables. Cover metal edge on roof with a 6 in. strip of No. 15 felt cemented in hot asphalt and an 8 in. mineral surfaced strip cemented in hot asphalt or in plastic fibrated cement.



Flashing—At walls apply metal base and cap flashing or Flintkote Standard Base Flashing with metal cap flashing. Apply metal base and cap flashing around all chimney stacks or heat flues.

Where any structural member, vent pipe or other projection extends through the roof surface install suitable type of copper "pitch pocket" or other approved type of metal base and collar flashing.

General—Not less than 30 lbs. of asphalt per 100 sq. ft. shall be used for embedding each layer of Rex Construction Roofing.

BOND—THE FLINTKOTE COMPANY will issue its standard 10 year bond (on roof areas of over 2500 sq. ft. in the United States except in the states of the Pacific Coast zone) provided deck surfaces (and roof insulation, if used) is acceptable to The Flintkote Company and provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification C-2-W.

PITCH—Gravel or Slag Surfacing

INCLINE—¼" to 2" per ft.

20-year roof—Specification **A-4-W**

PRELIMINARY REQUIREMENTS—See Page 3

APPLICATION

Over wood decks apply one layer of sheathing paper lapped 2 in. and nailed occasionally into deck. (Over precast gypsum decks omit sheathing paper.) Then, apply two layers of No. 15 Tarred Felt lapped 19 in., laid dry and nailed 2 in. up from bottom lap edge on 12 in. centers with nails and flat caps. Felts shall cover cant strip and shall be nailed into cant strip as required to hold in place or shall turn up on walls 3 in. At open eaves or gable ends extend these felts 12 in. beyond edge, and later, cement these projecting felts back over the top layers of felt.

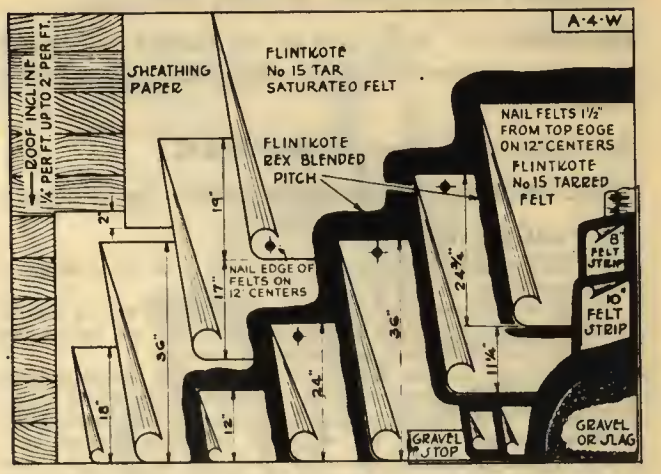
Cover all valleys on roof deck with two layers of felt extending 18 in. on either side of valley cemented solidly to the base felts.

Over this base course apply a heavy mopping of Rex Blended Pitch and embed three layers of No. 15 Tarred Felt, lapped 24¾ in. Felts shall cover cant strip but shall be cut off evenly at wall line. Cement felts solidly so that in no place shall felt touch felt. Broom in felts immediately behind mop to obtain solid bond and to eliminate void pockets between felts. Nail each course of felt 1½ in. from top edge on 12 in. centers with nails and flat caps.

Roofing on flat surface shall be extended up on steep surface 24 in. and nailed at top edge on 12 in. centers. Roofing on the steep surface should be carried down over flat surface to provide a 24 in. lap.

Edging—Install metal gravel stops at all eaves and gables. Cover metal edge on roof with first an 8 in. and then a 10 in. wide strip of No. 15 felt cemented in hot pitch.

Flashing—At walls apply copper base and cap flashing or Flintkote Standard Base Flashing with copper cap flashing. Apply copper base and cap flashing around all chimney stacks or heat flues.



Where any structural member, vent pipe or other projection extends through the roof surface, install suitable type of copper "pitch pocket" or other approved type of metal base and collar flashing.

Surfacing—Coat the surface of felts with a heavy application of pitch poured from a dipper and while hot embed not less than 400 lbs. of gravel or 300 lbs. of slag per 100 sq. ft.

General—Not less than a total of 150 lbs. of pitch per 100 sq. ft. shall be used for embedding felts and for top pouring.

BOND—THE FLINTKOTE COMPANY will issue its standard 20 year bond (on roof areas of over 2500 sq. ft. in the United States except in the states of the Pacific Coast zone) provided deck surface (and roof insulation, if used) is acceptable to The Flintkote Company and provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification A-4-W.

PITCH—Gravel or Slag Surfacing

INCLINE—¼" to 2" per ft.

15-year roof—Specification **B-4-W**

PRELIMINARY REQUIREMENTS—See Page 3

APPLICATION

Over wood decks apply one layer of sheathing paper lapped 2 in. and nailed occasionally into deck. (Over precast gypsum decks omit sheathing paper.) Then, apply two layers of No. 15 Tarred Felt lapped 19 in., laid dry and nailed 2 in. up from bottom lap edge on 12 in. centers with nails and flat caps. Felts shall cover cant strip and shall be nailed into cant strip as required to hold in place or shall turn up on walls 3 in. At open eaves or gable ends extend these felts 12 in. beyond edge, and later, cement these projecting felts back over the top layers of felt.

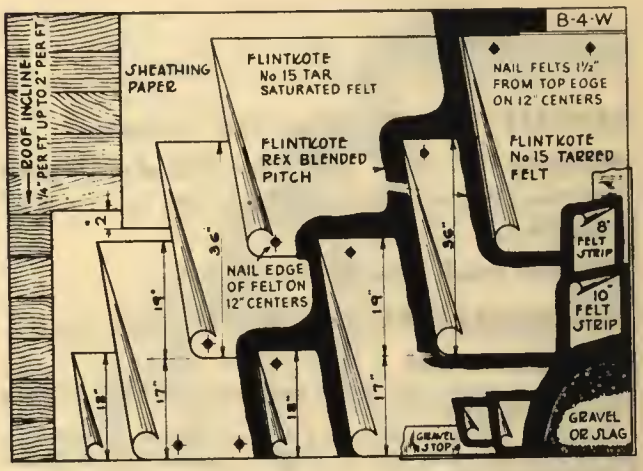
Cover all valleys on roof deck with two layers of felt extending 18 in. on either side of valley cemented solidly to the base felts.

Over this base course apply a heavy mopping of Rex Blended Pitch and embed two layers of No. 15 Tarred Felt, lapped 19 in. Felts shall cover cant strip but shall be cut off evenly at wall line. Cement felts solidly in pitch for full width so that in no place shall felt touch felt. Broom in felts immediately behind mop to obtain solid bond and to eliminate void pockets between felts. Nail each course of felt 1½ in. from top edge on 12 in. centers with nails and flat caps.

Roofing on flat surface shall be extended up on steep surface 24 in. and nailed at top edge on 12 in. centers. Roofing on the steep surface should be carried down over flat surfaces to provide a 24 in. lap.

Edging—Install metal gravel stops at all eaves and gables. Cover metal edge on roof with first an 8 in. and then a 10 in. wide strip of No. 15 felt cemented in hot pitch.

Flashing—At walls apply copper base and cap flashing or Flintkote Standard Base Flashing with copper cap flashing. Apply copper base and cap flashing around all chimney stacks or heat flues.



Where any structural member, vent pipe or other projection extends through the roof surface, install suitable type of copper "pitch pocket" or other approved type of metal base and collar flashing.

Surfacing—Coat the surface of felts with a heavy application of pitch poured from a dipper and while hot embed not less than 400 lbs. of gravel or 300 lbs. of slag per 100 sq. ft.

General—Not less than a total of 125 lbs. of pitch per 100 sq. ft. shall be used for embedding felts and for top pouring.

BOND—THE FLINTKOTE COMPANY will issue its standard 15 year bond (on roof areas of over 2500 sq. ft. in the United States except in the states of the Pacific Coast zone) provided deck surface (and roof insulation, if used) is acceptable to The Flintkote Company and provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification B-4-W.

DECK—Non-Combustible

ASPHALT—with Gravel or Slag Surfacing

INCLINE—¼" to 3" per ft. on Poured or Precast Concrete, Poured Gypsum, Book Tile, or Insulated Steel Decks.

20-year roof—Specification **A-3-C**

PRELIMINARY REQUIREMENTS—See Page 3

APPLICATION

Coat gypsum decks with primer kept back 4 in. from all joints of precast slabs.

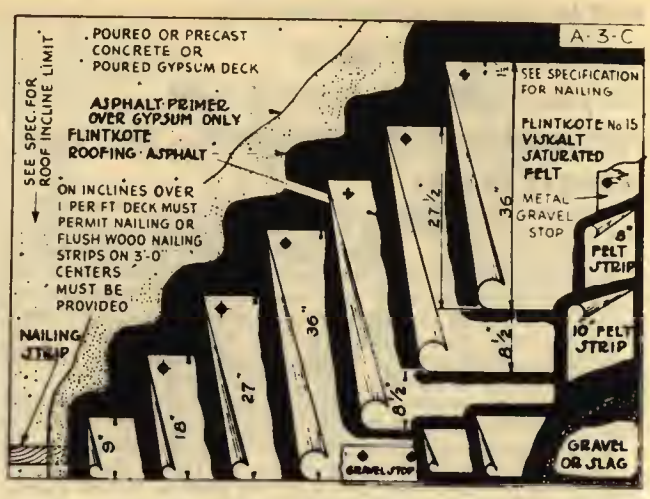
Cover all valleys on roof deck with two layers of No. 15 Viskalt Saturated Felt extending 18 in. on either side of valley and cemented to deck before application of roofing.

Over primed gypsum decks and directly over concrete decks apply a heavy mopping of asphalt and embed four layers of No. 15 Viskalt Saturated Felts, lapped 27½ in. Cement felts solidly so that in no place shall felt touch felt. Broom in felts immediately behind mop to obtain solid bond and to eliminate void pockets between felts. Keep asphalt back 4 in. from all joints of precast slabs. Felts shall cover cant strip or turn up on walls 2 in. On all gypsum decks regardless of incline and on all other decks where incline is over 1 in. per foot, nail each course of felt 1½ in. from top edge on not over 12 in. centers with nails and flat caps, or nail into wood nailing strips with three nails and caps 2 in., 5 in. and 8 in. from top edge. On poured gypsum decks nail on all inclines 1½ in. from top edge on not over 12 in. centers.

Roofing on flat surfaces shall be extended up on steep surface at least 24 in. and nailed on 12 in. centers. Roofing on the steep surfaces should be carried down over flat surface to provide a 24 in. lap.

Edging—Install metal gravel stops at all eaves and gables. Cover metal edge on roof with an 8 in. and a 10 in. wide strip of No. 15 Felt cemented in hot asphalt.

Flashing—At walls apply copper base and cap flashing or Flintkote Standard Base Flashing with copper cap flashing. Apply copper base and cap flashing around all chimney stacks or heat flues.



Where any structural member, vent pipe or other projection extends through the roof surface, install suitable type of copper "pitch pocket" or other approved type of metal base and collar flashing.

Surfacing—Coat the surface of felts with not less than 60 lbs. of asphalt per 100 sq. ft. poured from a dipper, and while hot, embed not less than 400 lbs. of gravel or 300 lbs. of slag per 100 sq. ft.

General—Not less than 30 lbs. of asphalt per 100 sq. ft. shall be used for embedding each layer of felt and not less than 40 lbs. of asphalt per 100 sq. ft. shall be used for mopping solid to deck.

BOND—THE FLINTKOTE COMPANY will issue its standard 20 year bond (on roof areas of over 2500 sq. ft. in the United States except in the states of the Pacific Coast zone) provided deck surface (and roof insulation, if used) is acceptable to The Flintkote Company and provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification A-3-C.

ASPHALT—with Gravel or Slag Surfacing

INCLINE—¼" to 3" per ft. on Poured or Precast Concrete, Poured Gypsum, Book Tile, or Insulated Steel Decks.

15-year roof—Specification **B-3-C**

PRELIMINARY REQUIREMENTS—See Page 3

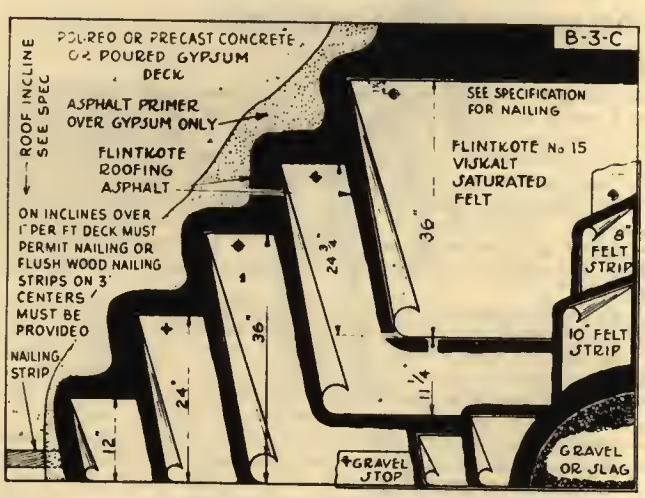
APPLICATION

Coat gypsum decks with primer kept back 4 in. from all joints of precast slabs.

Cover all valleys on roof deck with two layers of felt extending 18 in. on either side of valley and cemented to deck before application of roofing.

Over primed gypsum decks and directly over concrete decks apply a heavy mopping of asphalt and embed three layers of No. 15 Viskalt Saturated Felt, lapped 24¾ in. Cement felts solidly so that in no place shall felt touch felt. Broom in felts immediately behind mop to obtain solid bond and to eliminate void pockets between felts. Keep asphalt back 4 in. from all joints between precast slabs. Felts shall cover cant strip or turn up on walls 2 in. On all gypsum decks, regardless of incline, and on all other decks, where incline is over 1 in. per foot, nail each course of felt 1½ in. from top edge on not over 12 in. centers with nails and flat caps, or nail into wood nailing strips with three nails and caps 2 in., 5 in. and 8 in. back from top edge.

Roofing on flat surfaces shall be extended up on steep surface at least 24 in. and nailed on 12 in. centers. Roofing on the steep surface should be carried down over flat surface to provide a 24 in. lap.



Edging
Flashing
Surfacing
General

Same as for Specification A-3-C Above.

BOND—THE FLINTKOTE COMPANY will issue its standard 15 year bond (on roof areas of over 2500 sq. ft. in the United States except in the states of the Pacific Coast zone) provided deck surface (and roof insulation, if used) is acceptable to The Flintkote Company and provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification B-3-C.

ASPHALT (Steep)—with Slag Surfacing

INCLINE—2" to 4" per ft., over Poured or Precast Concrete, or Poured Gypsum.

10-year roof—Specification **C-3-C-S**

PRELIMINARY REQUIREMENTS—See Page 3

APPLICATION

Coat decks with asphalt primer kept back 4 in. from all joints of precast slabs.

Cover all valleys on roof deck with two layers of felt extending 18 in. on either side of valley and cemented to deck before application of roofing.

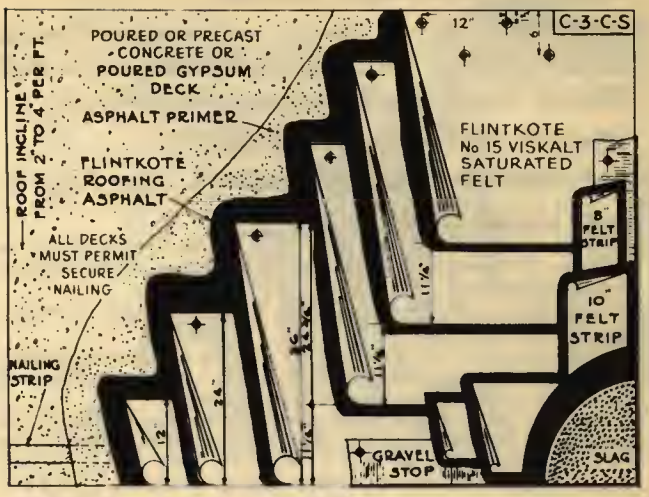
Over the primed deck apply a heavy mopping of Steep Roofing Asphalt and embed three layers of No. 15 Viskalt Saturated Felt, lapped 24¾ in. Cement felts solidly so that in no place shall felt touch felt. Broom in felts immediately behind mop to obtain solid bond and to eliminate void pockets between felts. Keep asphalt back 4 in. from joints between precast slabs. Felts shall cover cant strip or turn up on walls 2 in. On all decks, nail each course of felt with two rows of nails and flat caps, the first row 1½ in. down from top edge and the second row 6 in. down from top edge on 12 in. centers, staggered. Or nail into wood nailing strips with three nails and caps 2 in., 5 in. and 8 in. in from top edge.

Roofing on flat surface shall be extended up on steep surfaces at least 24 in. and nailed on 12 in. centers. Roofing on the steep surface should be carried down over flat surface to provide a 24 in. lap.

Edging—Install metal gravel stops at all eaves and gables. Cover metal edge on roof with an 8 in. and a 10 in. wide strip of No. 15 felt cemented in hot asphalt.

Flashing—At walls apply metal base and cap flashing or Flintkote Standard Base Flashing with metal cap flashing. Apply metal base and cap flashing around all chimney stacks or heat flues.

Where any structural member, vent pipe or other projection extends through the roof surface, install suitable type of copper "pitch pocket" or other approved type of metal base and collar flashing.



VISKALT—Smooth Surface

INCLINE—½" to 1" per ft. over Poured or Precast Concrete, Book Tile, Insulated Steel, or Poured Gypsum

10-year roof—Specification **C-1-C**

PRELIMINARY REQUIREMENTS—See Page 3

APPLICATION

Coat deck with primer kept back 4 in. from joints of precast slabs.

Cover all valleys on roof deck with two layers of No. 15 Viskalt Saturated Felt extending 18 in. on either side of valley and cemented to deck before application of roofing.

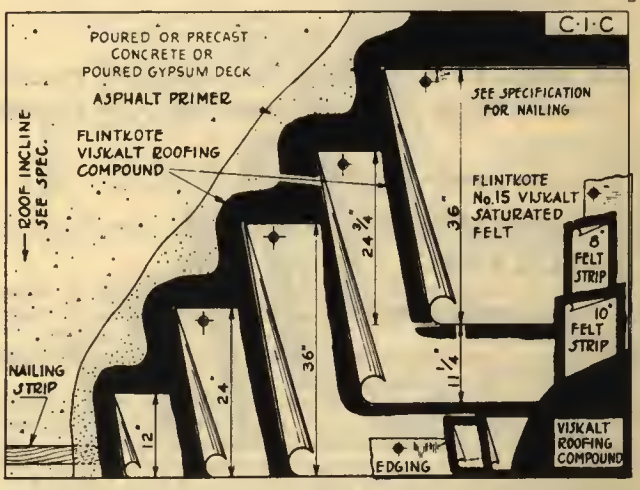
Over primed deck apply a heavy mopping of Viskalt and embed three layers of No. 15 Viskalt Saturated Felt, lapped 24¾ in. Cement felts solidly so that in no place shall felt touch felt. Broom in felts immediately behind mop to obtain solid bond and to eliminate void pockets between felts. Keep Viskalt back 4 in. from joints of precast slabs. Felts shall cover cant strip or turn up on walls 2 in. On all gypsum decks nail each course of felt 1½ in. from top edge on 12 in. centers with nails and flat caps.

Roofing on flat surfaces shall be extended up on steep surfaces at least 24 in. and nailed on 12 in. centers. Roofing on the steep surface should be carried down over flat surface to provide a 24 in. lap.

Edging—Install metal edging at all eaves and gables. Cover metal edge on roof with an 8 in. and then a 10 in. wide strip of No. 15 felt each cemented in hot Viskalt.

Flashing—At walls apply metal base and cap flashing or Flintkote Standard Base Flashing with metal cap flashing. Apply metal base and cap flashing around all chimney stacks or heat flues.

Where any structural member, vent pipe or other projection extends through the roof surface, install suitable type of copper "pitch pocket" or other approved type of metal base and collar flashing.



Surfacing—Coat the surface of felts with not less than 50 lbs. of asphalt per 100 sq. ft., and while hot embed 275 lbs. of slag per 100 sq. ft.

General—Not less than 25 lbs. of asphalt per 100 sq. ft. shall be used for embedding each layer of felt and not less than 30 lbs. of asphalt per 100 sq. ft. shall be used for mopping to deck.

BOND—THE FLINTKOTE COMPANY will issue its standard 10 year bond (on roof areas of over 2500 sq. ft. in the United States except in the states of the Pacific Coast zone) provided deck surface (and roof insulation, if used) is acceptable to The Flintkote Company and provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification C-3-C-S.

Surfacing—Coat the surface of felts with not less than 40 lbs. of Viskalt per 100 sq. ft.

General—Not less than 30 lbs. of Viskalt per 100 sq. ft. shall be used for embedding each layer of felt and not less than 40 lbs. of Viskalt per 100 sq. ft. shall be used for mopping to deck.

BOND**—THE FLINTKOTE COMPANY will issue its standard 10 year bond (on roof areas of over 2500 sq. ft. in the United States except in the states of the Pacific Coast zone and in the Southern States listed below) provided deck surface (and roof insulation, if used) is acceptable to The Flintkote Company and provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification C-1-C.

****NOTE:** This specification will not carry any bond or guarantee in the following states: South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi, Louisiana, Arkansas, Texas and Oklahoma.

DECK—Non-Combustible

MINERAL SURFACED Roofing

INCLINE—1″ to 6″ per ft., on Poured or Precast Concrete, Book Tile, Insulated Steel, or Poured Gypsum Decks. (Decks must provide nailing.)

15-year roof—Specification **B-2-C**

PRELIMINARY REQUIREMENTS—See Page 3

APPLICATION

Rex Construction Roofing shall be cut into lengths of either 12 ft. or 18 ft. and shall be stacked in flat piles at least 24 hours before application.

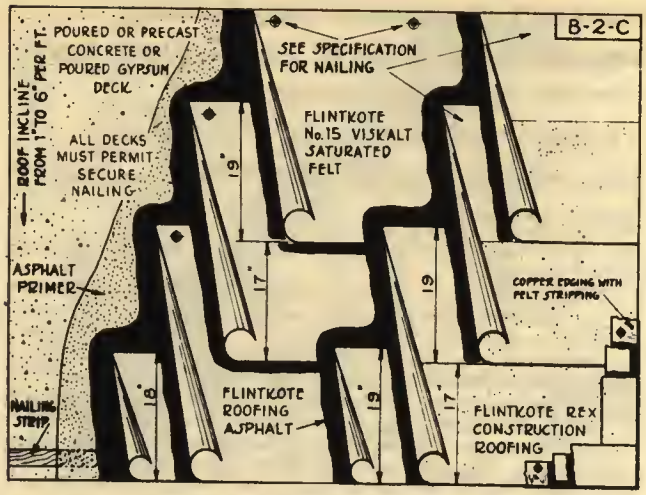
Coat deck with primer kept back 4 in. from joints of precast slabs.

Cover all valleys on roof deck with two layers of No. 15 Viskalt Saturated Felt extending 18 in. on either side of valley and cemented to deck before application of roofing.

Over the primed deck apply a heavy mopping of asphalt and embed two layers of No. 15 Viskalt Saturated Felt, lapped 19 in. Cement felts solidly so that in no place shall felt touch felt. Broom in felts immediately behind mop to obtain solid bond and to eliminate void pockets between felts. Keep asphalt back 4 in. from joints of precast slabs. Felts shall cover cant strip or turn up on vertical walls 3 in. On all decks, nail each course of felt 1½ in. from top edge on not over 12 in. centers with nails and flat caps, or into wood nailing strips with three nails 2 in., 5 in. and 8 in. in from top edge.

Over base course apply a heavy mopping of asphalt and embed Rex Construction Roofing, lapped 19 in. with 6 in. vertical lap and cemented solidly so that in no place shall felt touch felt. Felts shall cover cant strip or turn up on walls 2 in. Nail Rex Construction Roofing through selvage edge with two rows of nails and flat caps, the first row 2 in. down from top edge and the second row 10 in. down from top edge on 12 in. centers, staggered. Or nail into wood nailing strips with three nails 2 in., 5 in. and 8 in. in from top edge.

Roofing on flat surfaces shall be extended up on steep surfaces at least 24 in. and nailed on 12 in. centers. Roofing on steep surfaces should be carried down over flat surface to provide a 24 in. lap.



Edging—Install metal edging at all eaves and gables. Cover metal edge on roof with a 6 in. strip of No. 15 felt cemented in hot asphalt, and an 8 in. mineral surfaced strip cemented in hot asphalt or in plastic fibrated cement.

Flashing—At walls apply copper base and cap flashing or Flintkote Standard Base Flashing with copper cap flashing. Apply copper base and cap flashing around all chimney stacks or heat flues.

Where any structural member, vent pipe or other projection extends through the roof surface, install suitable type of copper "pitch pocket" or other approved type of metal base and collar flashing.

General—Not less than 30 lbs. of asphalt per 100 sq. ft. shall be used for embedding each layer of felt.

BOND—THE FLINTKOTE COMPANY will issue its standard 15 year bond (on roof areas of over 2500 sq. ft. in the United States except in the states of the Pacific Coast zone) provided deck surface (and roof insulation, if used) is acceptable to The Flintkote Company and provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification B-2-C.

MINERAL SURFACED Roofing

INCLINE—1″ to 6″ per ft. on Poured or Precast Concrete, Book Tile, Insulated Steel, or Poured Gypsum.

10-year roof—Specification **C-2-C**

PRELIMINARY REQUIREMENTS—See Page 3

APPLICATION

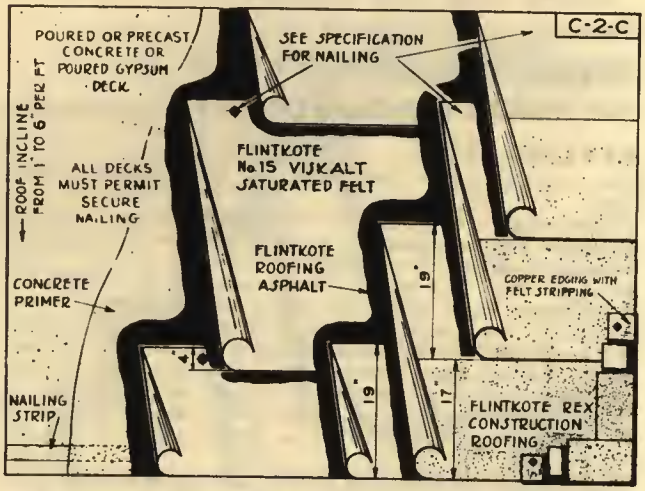
Rex Construction Roofing shall be cut into lengths of either 12 ft. or 18 ft. and shall be stacked in flat piles at least 24 hours before application.

Coat deck with asphalt primer kept back 4 in. from all joints of precast slabs.

Cover all valleys on roof deck with two layers of No. 15 Viskalt Saturated Felt extending 18 in. on either side of valley and solidly cemented to deck before application of roofing.

Over the primed deck apply a heavy mopping of asphalt and embed one layer of No. 15 Viskalt Saturated Felt, lapped 4 in. Cement felt solidly to deck. Broom in felt immediately behind mop to obtain solid bond and to eliminate void pockets. Asphalt shall be kept back 4 in. from all joints between precast slabs. Felt shall cover cant strip or turn up on walls 3 in. Nail felt 1½ in. from top edge on not over 12 in. centers with nails and flat caps, or nail into wood nailing strips with two nails 1½ in. and 3½ in. from top edge.

Over base course apply a heavy mopping of asphalt and embed Rex Construction Roofing, lapped 19 in., with 6 in. vertical lap and cemented solidly so that in no place shall felt touch felt. Felts shall cover cant strip or turn up on walls 2 in. Nail Rex Construction Roofing through selvage edge with two rows of nails and flat caps, the first row 2 in. down from top edge and the second row 10 in. down from top edge on 12 in. centers, staggered, or nail into wood nailing strips with three nails 2 in., 5 in. and 8 in. in from top edge.



Roofing on flat surface shall be extended up on steep surface at least 24 in. and nailed on 12 in. centers. Roofing on the steep surface should be carried down over flat surface to provide a full 24 in. lap.

Edging
Flashing
General
} Same as for Specification B-2-C Above.

BOND—THE FLINTKOTE COMPANY will issue its standard 10 year bond (on roof areas of over 2500 sq. ft. in the United States except in the states of the Pacific Coast zone) provided deck surface (and roof insulation, if used) is acceptable to The Flintkote Company and provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification C-2-C.

PITCH—with Gravel or Slag Surfacing

INCLINE—¼" to 2" per ft. on Poured Gypsum or Poured Concrete. ¼" to ¾" per ft. on Precast Concrete, Book Tile, or Insulated Steel Decks.

20-year roof—Specification **A-4-C**

PRELIMINARY REQUIREMENTS—See Page 3

APPLICATION

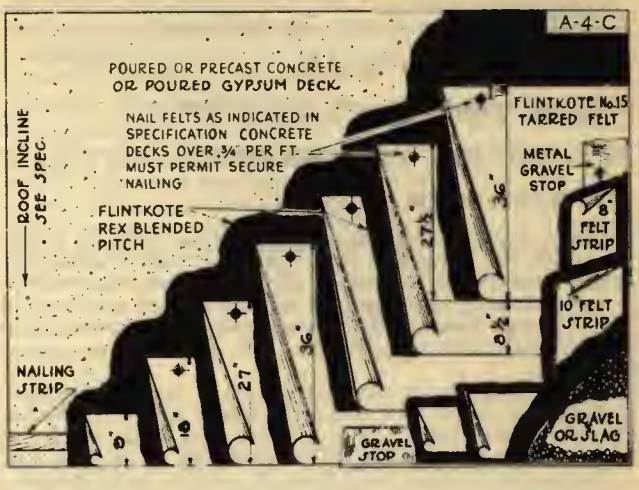
Cover all valleys on roof deck with two layers of No. 15 Tarred Felts extending 18 in. on either side of valley and cemented to deck before application of roofing.

Apply a heavy mopping of pitch and embed four layers of No. 15 Tarred Felt, lapped 27½ in. Cement felts solidly so that in no place shall felt touch felt. Broom in felts immediately behind mop to obtain solid bond and to eliminate void pockets between felts. Keep pitch back 4 in. from all joints between precast slabs. Felts shall cover cant strip but shall be cut off evenly at wall line. At open eaves or gable ends extend first two plies of felt 12 in. beyond edge and cement these projecting felts back over the top layers of felt. On all nailable decks, regardless of incline, and on any poured deck whose incline is over ¾ in., nail each course of felt 1¼ in. from top edge on not over 12 in. centers with nails and flat caps, or nail into wood nailing strips with three nails and caps 2 in., 5 in. and 8 in. back from top edge.

Roofing on flat surface shall be extended up on steep surface at least 24 in. and nailed on 12 in. centers. Roofing on the steep surface should be carried down over flat surface to provide a 24 in. lap.

Edging—Install metal gravel stops at all eaves and gables. Cover metal edge on roof with an 8 in. and then a 10 in. wide strip of No. 15 felt cemented in hot pitch.

Flashing—At walls apply copper base and cap flashing or Flintkote Standard Base Flashing with copper cap flashing. Apply copper base and cap flashing around all chimney stacks or heat flues.



Where any structural member, vent pipe or other projection extends through the roof surface, install suitable type of copper "pitch pocket" or other approved type of metal base and collar flashing.

Surfacing—Coat the surface of felts with a heavy application of pitch poured from a dipper, and while hot, embed not less than 400 lbs. of gravel or 300 lbs. of slag per 100 sq. ft.

General—Not less than a total of 200 lbs. of pitch per 100 sq. ft. shall be used for embedding felts and for top pouring.

BOND—THE FLINTKOTE COMPANY will issue its standard 20 year bond (on roof areas of over 2500 sq. ft. in the United States except in the states of the Pacific Coast zone) provided deck surface (and roof insulation, if used) is acceptable to The Flintkote Company and provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification A-4-C.

PITCH—with Gravel or Slag Surfacing

INCLINE—¼" to 2" per ft. on Poured Gypsum or Poured Concrete. ¼" to ¾" per ft. on Precast Concrete, Book Tile, or Insulated Steel Decks.

15-year roof—Specification **B-4-C**

PRELIMINARY REQUIREMENTS—See Page 3

APPLICATION

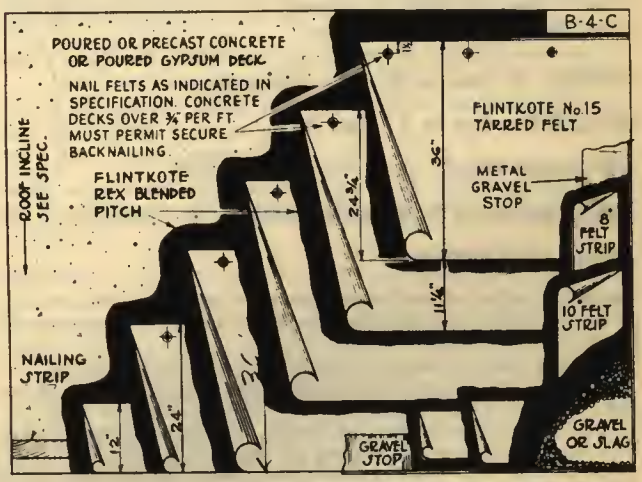
Cover all valleys on roof deck with two layers of No. 15 Tarred Felts extending 18 in. on either side of valley and cemented to deck before application of roofing.

Apply a heavy mopping of pitch and embed three layers of No. 15 Tarred Felt, lapped 24¾ in. Cement felts solidly so that in no place shall felt touch felt. Broom in felts immediately behind mop to obtain solid bond and to eliminate void pockets between felts. Keep pitch back 4 in. from all joints of precast slabs. Felts shall cover cant strip but shall be cut off evenly at wall line. At open eaves or gable ends extend the first two plies of felt 12 in. beyond edge and cement these projecting felts back over the top layers of felt. On all nailable decks regardless of incline, and on any poured concrete decks whose incline is over ¾ in., nail each course of felt 1½ in. from top edge on not over 12 in. centers with nails and flat caps, or nail into the wood nailing strips with three nails and caps 2 in., 5 in. and 8 in. back from top edge.

Roofing on flat surface shall be extended up on steep surface at least 24 in. and nailed on 12 in. centers. Roofing on the steep surface should be carried down over flat surface to provide a 24 in. lap.

Edging—Install metal gravel stops at all eaves and gables. Cover metal edge on roof with an 8 in. and a 10 in. wide strip of No. 15 felt solidly cemented in hot pitch.

Flashing—At walls apply copper base and cap flashing or Flintkote Standard Base Flashing with copper cap flashing. Apply copper base and cap flashing around all chimney stacks or heat flues.



Where any structural member, vent pipe or other projection extends through the roof surface, install suitable type of copper "pitch pocket" or other approved type of metal base and collar flashing.

Surfacing—Coat the surface of felts with a heavy application of pitch poured from a dipper, and while hot, embed not less than 400 lbs. of gravel or 300 lbs. of slag per 100 sq. ft.

General—Not less than a total of 175 lbs. of pitch per 100 sq. ft. shall be used for embedding felts and for top pouring.

BOND—THE FLINTKOTE COMPANY will issue its standard 15 year bond (on roof areas of over 2500 sq. ft. in the United States except in the states of the Pacific Coast zone) provided deck surface (and roof insulation, if used) is acceptable to The Flintkote Company and provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification B-4-C.

ASPHALT—Promenade Tile Surfacing

INCLINE—Up to 1" per ft.

10-year roof—Specification **C-1-P**

PRELIMINARY REQUIREMENTS—See Page 3

APPLICATION

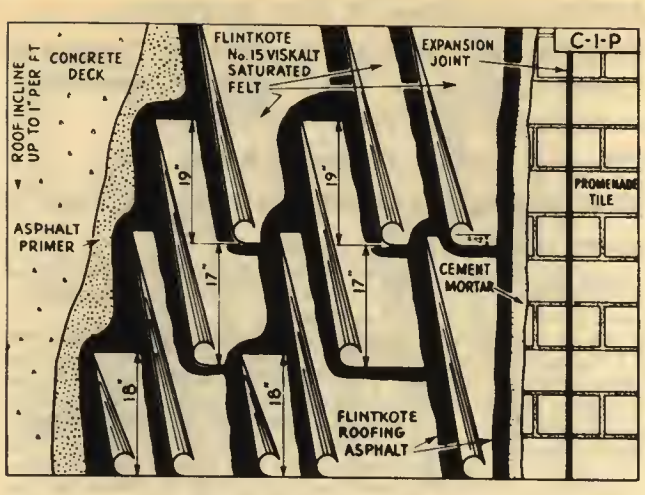
Cover all valleys on roof deck with two layers of No. 15 Viskalt Saturated Felt extending 18 in. on either side of valley and solidly cemented to deck before application of roofing.

Apply a heavy mopping of asphalt and embed two layers of No. 15 Viskalt Saturated Felt, lapped 19 in. Cement felts solidly so that in no place shall felt touch felt. Felts shall turn up on walls 2 in.

Over the surface of these felts apply a heavy mopping of asphalt and embed two additional layers of No. 15 Viskalt Saturated Felts, lapped 19 in. Cement felts solidly so that in no place shall felt touch felt. Felts shall turn up on walls 4 in.

Then, prior to setting promenade tile, apply a heavy mopping of asphalt and embed the final ply of felt lapped 4 in. Coat surface with a pouring not less than 65 lbs. of asphalt. Proceed with the application of promenade tile over cement mortar bed. (Note: In no case shall the bare roofing felts at any time be exposed to the weather preceding the setting of the promenade tile. If promenade tile is not to be applied until some time after the application of the roofing felts, then the entire surface of the felts thus far applied must be protected against the weather by a heavy mopping of asphalt.)

After all roofing felts have been applied and before the copper base and counter flashing is set, install a built-up flashing course consisting of not less than four layers of No. 15 Felts with a center layer of Asphalt Saturated Membrane carried up on wall surface to the height of the copper base flashing and feathered out on roof 6 in., all embedded in and coated over with plastic fibrated cement. The top of this flashing course should be nailed into brick mortar joints on 12 in. centers and such nailing covered with a 4 in. wide felt strip embedded in and coated over with plastic fibrated cement. Where concrete cant strip is not provided, apply the built-up flashing course so that it is solidly cemented at the interior corner.



Over this built-up flashing course, install the copper base and counter flashing.

Promenade tile shall be laid according to the tile manufacturer's specification in a bedding of cement mortar not less than 1 in. thick. One inch wide expansion joints filled with an expansion joint filler specified by the architect should be provided between tile and all copper flashings at walls, skylight curbs and any other vertical surfaces. Suitable expansion joints should be provided throughout the roof surface as required. All expansion joints shall extend from the top of the tile through the cement mortar, and in no case shall expansion joints be spaced more than 20 ft. apart.

BOND—THE FLINTKOTE COMPANY will issue its standard 10 year roofing bond (on roof areas of over 2500 sq. ft. in the United States, except in the states of Pacific Coast zone) provided deck surface (and roof insulation, if used) is acceptable to The Flintkote Company and provided application has been made by a Flintkote Approved Roofer in strict accordance with Flintkote Specification C-1-P.

PITCH—Promenade Tile Surfacing

INCLINE—Up to 1" per ft.

10-year roof—Specification **C-4-P**

PRELIMINARY REQUIREMENTS—See Page 3

APPLICATION

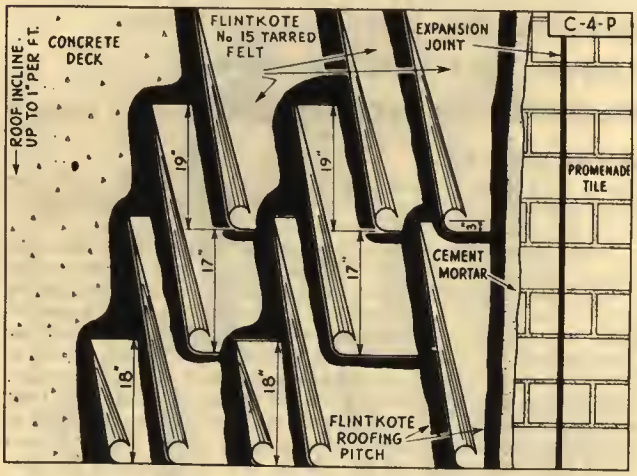
Cover all valleys on roof deck with two layers of felt extending 18 in. on either side of valley cemented solidly to deck before application of roofing.

Apply a heavy mopping of pitch and embed two layers of No. 15 Tarred Felt, lapped 19 in. Cement felts solidly so that in no place shall felt touch felt. Felts shall be cut off evenly at wall line.

Over the surface of these felts apply a heavy mopping of pitch and embed two additional layers of No. 15 Tarred Felt, lapped 19 in. Cement felts solidly so that in no place shall felt touch felt. Felts shall be cut off evenly at wall line.

Then, prior to setting promenade tile, apply a heavy mopping of pitch and embed the final ply of felt, lapped 4 in. Coat this surface with a pouring not less than 70 lbs. of pitch. Proceed with the application of promenade tile over cement mortar bed. (Note: In no case shall the bare roofing felts at any time be exposed to the weather preceding the setting of the promenade tile. If promenade tile is not to be applied until some time after the application of roofing felts, then the entire surface of the felts thus far applied must be protected against the weather by a heavy mopping of pitch.)

After all roofing felts have been applied and before the copper base and counter flashing is set, install a built-up flashing course consisting of not less than four layers of No. 15 Felts with a center layer of Asphalt Saturated Membrane carried up on wall surface to the height of the copper base flashing and feathered out on roof 6 in., same as in Specification C-1-P.



(Balance of application is exactly like the last three paragraphs of application given for Specification C-1-P above.)

Over this built-up flashing course, install the copper base and counter flashing.

Promenade tile shall be laid according to the tile manufacturer's specification in a bedding of cement mortar not less than 1 in. thick, same as Specification C-1-P.

BOND—THE FLINTKOTE COMPANY will issue its standard 10 year roofing bond (on roof areas of over 2500 sq. ft. in the United States, except in the states of Pacific Coast zone) provided deck surface (and roof insulation, if used) is acceptable to The Flintkote Company and provided application has been made by a Flintkote Approved Roofer in strict accordance with Flintkote Specification C-4-P.

Roof Insulation should be considered whenever a new built-up roof is planned. An efficiently insulated roof deck pays periodic dividends or returns on the investment. It is also the practical method of making certain that the new roof is going to give the utmost in satisfaction per dollar spent.

For these reasons more and more architects and engineers, builders and contractors are recommending Flintkote Roof Insulation—both when building and re-roofing. It offers many advantages of particular interest to those responsible for the economic and satisfactory maintenance of Industrial buildings.

Flintkote Roof Insulation is a rigid type of fiberboard insulation especially fabricated for use as an insulation under built-up roofing. Applied over wood, concrete, gypsum or steel decks, Flintkote Roof Insulation not only provides insulation but also serves as a base for the application of the built-up roofing. It is available in one standard size 23" x 47" and in varying commercial thicknesses.

Fuel Savings—Even without its other advantages, the fuel saving alone makes the inclusion of Roof Insulation a sound and safe recommendation of any architect and engineer. With Roof Insulation, less heat is required to maintain the desired inside temperature and this, of course, means less fuel.

Better Working Conditions—With Roof Insulation, more comfortable working conditions are provided. It permits an even temperature in winter and reduces the amount of summer heat which penetrates through the roof in summer.

Reduction in Required Radiation and Boiler Capacity—Roof Insulation reduces heat loss and thereby saves on the initial cost of radiation and possibly in the size of the boiler required.

Less Expansion and Contraction of Roof Deck—Roof Insulation applied to the top surface of a concrete or steel roof deck will reduce the temperature change in the deck, and will therefore reduce the amount of expansion and contraction of the roof.

Eliminates Ceiling Condensation—The proper thickness of roof insulation can eliminate ceiling condensation. For structures with high inside humidity, proper precautions must be taken to protect the roof insulation with a proper vapor seal applied on the under side.

Roof Insulation is particularly necessary over steel decks. On this type of deck it provides a satisfactory base for the application of a built-up roof, in addition to its saving of fuel and protection against excessive expansion and contraction. The thickness of roof insulation required will depend on the type and span of the steel deck specified. When the built-up roof over a steel deck requires a bond, roof insulation of proper thickness must be used.

APPLICATION SPECIFICATIONS FOR FLINTKOTE ROOF INSULATION

(Over Wood Decks, Non-Combustible Decks and on Insulated Steel Decks)

PRELIMINARY REQUIREMENTS

Deck — Wood deck shall be of tongue and groove lumber, smooth, firm and free from loose or curled boards. Cover large cracks, open joints or open knot holes with metal strips nailed to deck. Non-combustible decks shall be smooth, dry, free from high spots, depressions, debris and free from frost. Precast slabs shall have a nailable surface and shall be evenly and firmly set with interlocking joints. Any unevenness in the deck surface shall be corrected before application of insulation. Steel decks shall be free from rust or scale and the surface shall be cleaned of all dust, dirt and debris. All decks shall be properly graded and drains shall be set to allow free flow of water.

Waad Edge Strips — On all decks wood edge strips 4" wide and of the same thickness as insulation are required at all open eaves or gable ends as a stop for the insulation and for the nailing of metal edge strips or metal gravel stops. Wood strips 6" wide and of the same thickness as insulation are required at all vertical walls or curbs for the nailing of metal base flashing.

Waad Nailing Strips on Inclined Decks — On inclines over 1" per foot if the type of deck is to be such which would not permit secure nailing, wood nailing strips not less than 4" wide, coated with asphalt primer, would be required embedded flush with surface and set parallel with incline on not over 47" centers when deck is poured; or if deck has already been poured or if it is of an insulated steel type, wood nailing strips not less than 3" wide, of the same thickness as insulation, coated with asphalt primer, would be required securely fastened to deck parallel with incline and set on such centers that the edge to edge dimension of wood strips would conveniently allow for embedding insulation units lengthwise between the wood strips without field cutting of insulation.

Cants — 3" x 3" wood cant strips, coated with asphalt primer, should be provided and installed after the application of insulation at all angles formed by wall and roof deck and securely fastened through the insulation into deck or into wood nailing strips provided at vertical walls.

Asphalt — Asphalt for vapor barrier shall not be heated above 425°F. and shall be periodically tested for temperature with thermometer.

Insulation — Preceding application, roof insulation shall be kept dry and free from any moisture absorption by storing in an enclosed location or if it is necessary to store in the open, the insulation shall be stacked over a dry wood sheathing base laid on wood sleepers and the insulation must be protected at top and bottom and at all sides or edges with a double layer of tarpaulin.

APPLICATION OF VAPOR BARRIERS AND ROOF INSULATION

OVER WOOD DECKS

1. Vapor Barrier Type A under Insulation *(minimum for severe humid conditions existing in dye houses, paper mill rooms, laundries, etc.)*— A minimum vapor barrier for severe humid conditions should consist of not less than the following. Apply a heavily coated base felt (55 lb.), lapped 6 in., nailed along laps and through the center of the sheet to sufficiently hold in place. Over this base sheet apply two layers of Flintkote No. 15 Viskalt Saturated Felts, lapped 19 in. and solidly cemented to the base sheet and to each in hot asphalt. The top surface shall then be coated with not less than 40 lbs. of asphalt per 100 square feet for embedding insulation. (If application of insulation does not immediately follow the installation of the vapor barrier, the top surface of the felts of the vapor barrier shall be coated as specified above as a protection against the weather until the insulation and built-up roofing is applied.) The architect, engineer or owner, knowing the severity of the humid conditions which will exist in the building, should specify a heavier vapor barrier if deemed necessary.

2. Vapor Barrier Type B under Insulation *(to be applied on roof decks of buildings which are to be heated and which will have an inside humidity exceeding the normal outside humidity and where outside winter temperatures below 35°F. will exist)*— A recommended vapor barrier for moderate humid conditions should consist of not less than the following. Apply two layers of Flintkote No. 15 Viskalt Saturated Felts, lapped 19 in., backnailed to hold

in place and cemented solidly with asphalt between laps. The top surface shall then be coated with not less than 40 lbs. of asphalt per 100 sq. ft. for embedding insulation. (If application of insulation does not immediately follow the installation of the vapor barrier, the top surface of the felts of the vapor barrier shall be coated as specified above as a protection against the weather until the insulation and built-up roofing is applied.)

3. (a) Dry Course under Insulation *(if asphalt and asphalt felts are to be applied directly over the insulation)* — Where normal conditions exist and a vapor barrier is not required, it is advisable to first apply to the deck a dry course consisting of either one layer of Flintkote No. 15 Viskalt Saturated Felt, lapped 6 in., or two layers of sheathing paper, lapped 19 in.

(b) Dry Course under Insulation *(if pitch and tarred felts are to be applied directly over the insulation)* — Where normal conditions exist and a vapor barrier is not required, first apply to the deck a dry course consisting of not less than one layer of resin sheathing paper and two layers of Flintkote No. 15 Felt, laid dry, lapped 19 in. and nailed sufficiently to hold in place.

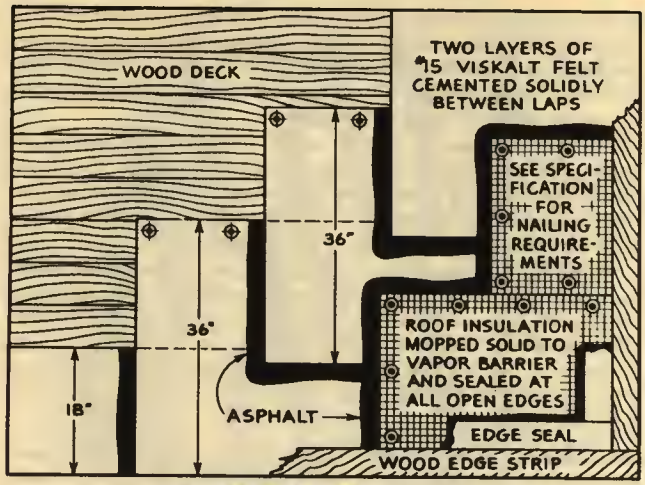
Insulation — Over the wood decks thus covered by either (1) the vapor barrier Type A or Type B (as required) or (2) the dry course, apply sheets of roof insulation mopped solidly in the 40 lb. top coating of asphalt where vapor barrier has been installed or laid dry where the dry course has been installed. Nail each sheet around all edges on approximately 12 in. centers and through the center of the sheet on 12 in. centers with nails and flat caps or large head (½ in. diameter head minimum) roofing nails. If more than one layer of insulation is to be applied over the vapor barrier, each layer shall be mopped solid to the underlying layer in hot asphalt and the nailing shall be made through the top layer but shall penetrate all underlying layers of insulation into wood decks. If more than one layer of insulation is to be applied over the dry course, each subsequent layer may be laid dry over the underlying layer and the nailing shall be made through the top layer but shall penetrate all underlying layers of roof insulation into wood deck.

Each sheet of insulation shall break joints with adjacent sheet and each layer of insulation shall break joints with any underlying layer of insulation.

OVER POURED CONCRETE OR POURED GYPSUM DECKS

1. Vapor Barrier Type A under Insulation *(minimum for severe humid conditions existing in dye houses, paper mill rooms, laundries, etc.)* — A minimum vapor barrier for severe humid conditions should consist of not less than the following: First coat the deck with asphalt primer and apply a heavy mopping of asphalt and embed not less than three layers of Flintkote No. 15 Viskalt Saturated Felt, lapped 24¾ in., cemented solidly to the primed deck and to each other with asphalt. On all precast slab decks keep primer and asphalt 4 in. away from all joints. The top surface of felts of the vapor barrier shall then be coated with not less than 40 lbs. of asphalt per 100 sq. ft. for embedding insulation. (If application of insulation does not immediately follow the installation of the vapor barrier, the top surface of the felts of the vapor barrier shall be coated as specified above as a protection against the weather until the insulation and built-up roofing is applied.) The architect, engineer or owner, knowing the severity of the humid conditions which will exist in the building, should specify a heavier vapor barrier if deemed necessary.

2. Vapor Barrier Type B under Insulation *(required over any poured concrete or poured gypsum decks)* — This vapor barrier should consist of not less than the following: First coat deck with asphalt primer and apply a heavy mopping of asphalt and embed two layers of Flintkote No. 15 Viskalt Saturated Felts, lapped 19 in., cemented solidly to the primed deck and to each other with asphalt. On all precast slab decks keep primer and asphalt 4 in.



VAPOR BARRIER B OVER WOOD DECKS

Before insulation is applied at eaves and gable ends and at vertical walls or curbs, an edge seal course consisting of two layers of No. 15 Felt cemented to each other in hot asphalt shall be applied at all edges sufficiently wide to extend 4 to 6 in. under the surface of insulation and to cover the edge and top surface of insulation 4 to 6 in., cemented to the top surface and edge of insulation and to each other in hot asphalt.

Application of Built-Up Roofing

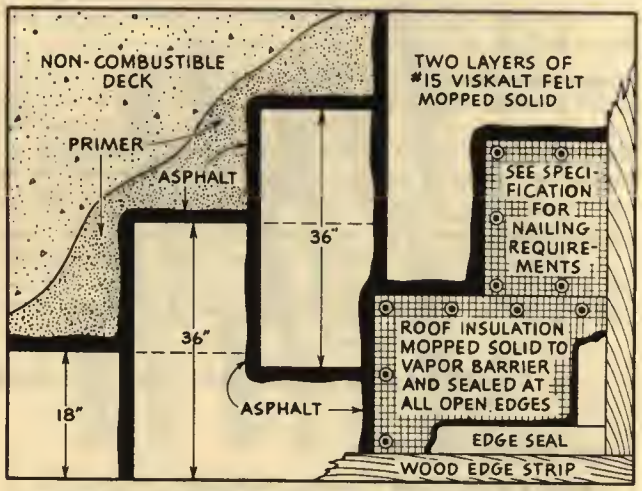
After insulation has been installed either over vapor barrier or over recommended dry course as indicated above, the following Built-up Roofing Specifications may be applied:

Asphalt Type

Specification A-3-C, B-3-C, B-2-C, etc.

Pitch Type

Specification A-4-C and B-4-C, provided a dry course of one sheathing paper and 2 layers of No. 15 Felt are applied before laying insulation.



VAPOR BARRIER B OVER NON-COMBUSTIBLE DECKS

away from all joints. The top surface of felts of the vapor barrier shall then be coated with not less than 40 lbs. of asphalt per 100 sq. ft. for embedding insulation. (If application of insulation does not immediately follow the installation of the vapor barrier, the top surface of the felts of the vapor barrier shall be coated as specified above as a protection against the weather until the insulation and built-up roofing is applied.)

Insulation—Over the decks thus covered by the vapor barrier, apply sheets of roof insulation mopped solidly in the 40 lb. top coating of asphalt of the vapor barrier. Where incline is over 1 in.

per foot and deck permits nailing, nail each sheet around all edges on approximately 12 in. centers and through the center of the sheet on 12 in. centers with nails and flat caps, or nail each sheet into wood nailing strips on not over 10 in. centers. If more than one layer of insulation is to be applied, each subsequent layer shall be mopped solid to the underlying layer in hot asphalt and on inclines over 1 in. per foot the nailing shall be made through the top layer but shall penetrate all underlying layers of insulation into the deck or into wood nailing strips at least 1 in.

Each sheet of insulation shall break joints with adjacent sheets and each layer of insulation shall break joints with any underlying layer of insulation.

Before insulation is applied at eaves or gable ends and at vertical walls or curbs, an edge seal course consisting of two layers of No. 15 Felts cemented to each other in hot asphalt shall be applied at all edges sufficiently wide to extend 4 to 6 in. under the surface of insulation and to cover the edge and top surface of insulation 4 to 6 in., cemented to the top surface and edge of insulation and to each other in hot asphalt.

Application of Built-Up Roofing

After insulation has been installed over the vapor barrier as indicated above, the following built-up roofing specifications may be applied:

Asphalt Type
Specification A-3-C, B-3-C, B-2-C, etc.

Pitch Type
Specification A-4-C and B-4-C.

OVER STEEL DECKS

1. Vapor Barrier under Insulation *(minimum for severe humid conditions existing in dye houses, poper mill rooms, loundries, etc.)* —A minimum vapor barrier for severe humid conditions should consist of not less than the following: If a steel deck has not been shop coated, first coat the deck with asphalt primer and apply a heavy mopping of asphalt and embed not less than three layers of Flintkote No. 15 Viskalt Saturated Felt, lapped 24¾ in., cemented solidly to the primed deck and to each other with asphalt. The top surface of felts of the vapor barrier shall then be coated with not less than 40 lbs. of asphalt per 100 sq. ft. for embedding insulation. (If application of insulation does not immediately follow the installation of the vapor barrier, the top surface of the felts of the vapor barrier shall be coated as specified above as a protection against the weather until the insulation and built-up roofing is applied.) The architect, engineer or owner, knowing the severity of the humid conditions which will exist in the building, should specify a heavier vapor barrier if deemed necessary.

2. Where Vapor Barrier is not required under Insulation —If deck is not shop coated, apply priming coat of asphalt primer and after primer has dried, apply a heavy mopping of asphalt for embedding sheets of insulation.

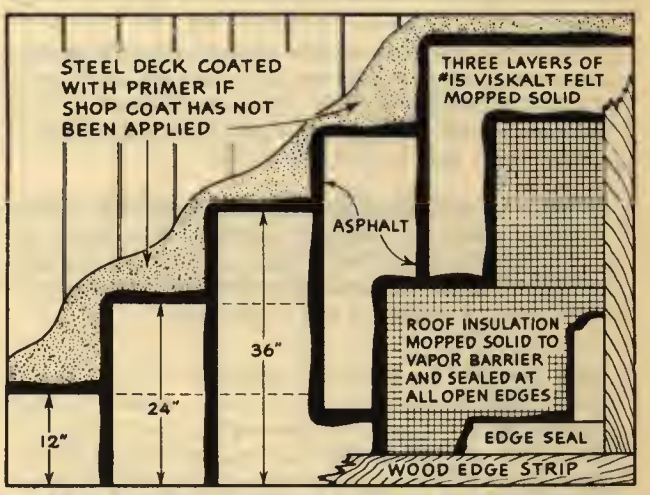
Insulation — Over the decks thus covered by the vapor barrier or directly over the steel deck where vapor barrier is not required, apply sheets of roof insulation mopped solidly in the 40 lb. coating of asphalt. If more than one layer of insulation is to be applied, each subsequent layer shall be mopped solid to the underlying layer in hot asphalt.

Each sheet of insulation shall break joints with adjacent sheets and each layer of insulation shall break joints with any underlying layer of insulation.

Before insulation is applied at eaves or gable ends and at vertical walls or curbs, and edge seal course consisting of two layers of No. 15 Felt cemented to each other in hot asphalt shall be applied at all edges sufficiently wide to extend 4 to 6 in. under the surface of insulation 4 to 6 in., cemented to the top surface and edge of insulation and to each other in hot asphalt.

Path Stripping of Insulation for All Types of Deck

Where architect or owner requires that the surface of insulation be isolated into separate areas, the following shall apply: As insulation is installed, each layer shall be isolated into areas 30′ x 30′ by means of a two ply path strip of No. 15 Felts extending 4″ to 6″ on the deck surface under the edge of one section of insulation and brought up 4″ to 6″ over the top surface of the adjacent section of insulation. On non-combustible decks or on steel decks, path strips shall be cemented to the deck. On wood decks these path strips shall be laid dry under the insulation but in all cases the path strips shall be cemented to the surface of the insulation and to each other in hot asphalt. Where isolation of insulation is required, the path strips should begin not more than 4 ft. from any vertical wall.



VAPOR BARRIER UNDER INSULATION OVER STEEL DECKS WHERE SEVERE HUMID CONDITIONS WILL EXIST IN BUILDING

Application of Built-Up Roofing

After insulation has been installed over the vapor barrier or over the primed steel deck as indicated above, the following built-up roofing specifications may be applied:

Asphalt Type
Specification A-3-C, B-3-C, B-2-C, etc.

Pitch Type
Specifications A-4-C and B-4-C.

FLINTKOTE COLD PROCESS

Flintkote Cold Process roofing provides a complete and tested system for the cold application of proven materials in built-up roofing work . . . maintenance, re-roofing and new built-up roof construction. This practical method for built-up roofing applied either by brush or by spray is the result of over 15 years of extensive research and field testing. Highly specialized products designed for specific uses have been painstakingly developed and proven in actual practice.

Behind the materials and methods involved in Cold Process roofing stand the integrity and reputation of The Flintkote Company, gained in its nearly half a century of successful manufacturing experience as one of the world's oldest and largest manufacturers of asphalt roofing products.

The principal materials used in the construction of a Flintkote Cold Process roof are—

1. **Cold Process Felt**—This felt is formed by saturating a dry felt with a waterproofing asphalt of such characteristics as to impart flexibility and then coating both sides with a stabilized asphalt coating to provide weatherproofing qualities. The outside coating of this felt also has definite affinity for the cold asphalt cement used to bind in the various layers of felt. The outer surface of the felt is always provided with a light sanded surface to prevent sticking in the rolls. This 53 lb. Cold Process Felt by its physical characteristics thus provides the required structural strength for the roof construction. Further it conforms easily to uneven roof surfaces. It also provides a more solid bond between the various layers of cement in the built-up roof construction.

2. **Cement**—Fibrex Cement used for cementing between the felts is of a brushing or spraying consistency. This cement has an unusually quick set and a high rate of grab, assuring a positive bond between surfaces and providing a solid cementing of the felts to the deck and to each other.

3. **Static Asphalt**—The surfacing material on the Cold Process roof, known as Static Asphalt, is always applied cold and provides the outer protective surfacing to a Cold Process roof. Two types of Static Asphalt are available—Static Asphalt Fibrated when the application is made by the usual brush method or Nu-Static when the application is made by the spray method.

The Pier Shed Roofs illustrated above are protected by A Flintkote Cold Process Application

The Flintkote Cold Process built-up roof provides a roof application particularly adapted to the needs of industrial plants and commercial building and can be applied on roof inclines of ½" per foot or on more steeper inclines where the application is only limited by the nailing facilities afforded by the deck itself.

It also provides a roof application which can be maintained and serviced year in and year out and thus permits extending the life of a roof for many years after its average life span.

Flintkote Cold Process roofs are also conveniently repaired. No gravel or slag need be removed from the surface of the felts and repairing or maintenance work can easily be completed directly over the existing Cold Process roof.

Flintkote Cold Process built-up roofs are durable and quality roofs backed by the integrity and reputation of the roofing applicator who applies them and fabricated of materials which bear the endorsement of The Flintkote Company.

As further assurance of satisfactory performance, Flintkote Cold Process Specifications CP-3-Type C, CP-4-Type C, CP-5-Type C, CP-6-Type C and CP-7-Type C are bondable when required for a period of ten years. Specifications for a heavier type of application known as Type A, three ply, are available when a heavier application is desirable.

COLD PROCESS ROOFING APPLIED BY SPRAY

In 1946 Flintkote introduced the spray method for applying Cold Process roofs, also a specially formulated cement and a surface coating, both for spray application.

A new, improved Fibrex Cement of a brushing or spraying consistency that sets up touch dry in just a few minutes; and in only a few hours virtually "welds" the roofing felts together to form a weather-tight impervious roof.

Nu-Static Asphalt which contains the same basic materials used in Static Asphalt plus additional ingredients which give it a self-leveling quality when sprayed, resulting in a smooth, uniform roof coating.

All the advantages of the Cold Process roof are maintained in spray application—both cement and top coating are applied cold right from the original factory container. Cold Process felts are factory packaged in convenient size ready for use on the job, and no waste results from left-overs. And most important, Cold Process employs the use of a Static asphalt emulsion for top coating—the coating which will outlast any other type of bituminous coating exposed to the elements.

Surface Coating with Nu-Static Asphalt.

FLINTKOTE COLD PROCESS PRODUCTS

Nu-Static** (*For spray application only*) is a fibrated bituminous material possessing exceptional weathering properties. Applied in cold form as a protective coating for new and old roofs. Flintkote Nu-Static Asphalt will outlast any other type of bituminous material exposed to the weather. Used as a surface coat exclusively in Flintkote Cold Process Roof Specifications. Available in 55 and 30 gal. drums (weighing 517 and 282 lbs. respectively) and 5 and 1 gal. cans.

Static* Asphalt (Fibrated) — (*For brush application only*) applied in cold form as a protective coating for new and old roofs. Available in 55 and 30 gal. drums (weighing 512 and 287 lbs. respectively) and 5 and 1 gal. cans.

Static* Asphalt (Non-Fibrated)—(*For brush application only*) applied in cold form as a protective coating over metal roofs and masonry walls and parapets. Available in 55 and 30 gal. drums (weighing 512 and 287 lbs. respectively) and 5 and 1 gal. cans.

Flintkote Cold Process Felt — built to a balanced laboratory formula and designed to provide a very pliable and extra high strength base felt for Cold Process Roofs. *Super-saturated* with tempered asphalt and coated both sides with Flintkote Stabilized Asphalt Coating into which a fine mineral surfacing is embedded. No accessories in roll. Rolls are 36" wide (108 sq. ft.) and weigh 53 lbs.

Flintkote Asphalt Saturated Membrane — an exceptionally strong, open weave mesh, treated fabric for use as a reinforcing material in Flintkote Cold Process Specifications. Rolls are 150' long by 36" (50 sq. yds.), 12" (16⅔ sq. yds.) and 6" (8⅓ sq. yds.) wide, and weigh approx. 36, 12 and 6 lbs. respectively.

*T. M. Reg. U. S. Pat. Off.
**Trade Mark

Flintkote Roof Saturant — a high penetration liquid asphalt for reconditioning old felts and providing a bonding coat in Flintkote Cold Process Specifications. Applied by brush or spray. Available in 55 and 30 gal. drums (weighing 470 and 260 lbs. respectively) and 5 and 1 gal. cans.

Flintkote Col-Ply* Cement — used for patching and repairing and for flashing purposes where a very heavy-bodied material is required. Applied by trowel. Available in 550 and 345 lb. drums and 50 and 10 lb. cans.

Flintkote Fibrex* Cement—A waterproofing cement used for embedding Cold Process Felts. Has a very fast set combined with unusual bonding strength. Applied by brush or spray. Available in 55 and 30 gal. drums (weighing 484 and 266 lbs. respectively) and 5 and 1 gal. cans.

Flintkote C. P. Coated Roof Insulation—a coated fibre insulation board, specifically designed for use *only* with Flintkote Cold Process built-up roofs. The special impregnation used in the fabrication of the board has an affinity *only* for Flintkote Cold Process Cements and should not be used with any other types of bituminous bonding agents. Size 23" x 47", ½" and 1" thick.

Static Extratite — an extra heavy-duty top coat protective product for use on roof areas where low spots occur. Available in 55 and 30 gal. drums (weighing 512 and 287 lbs. respectively) and 5 and 1 gal. cans. Apply by brush.

Flintkote Weld-On Cement**—a quick setting adhesive possessing unusually strong bonding properties developed for use as an adhesive for cementing C. P. Coated Roof Insulation to roof decks. Available in 55 and 30 gal. drums (weighing 525 and 330 lbs. respectively) and 5 and 1 gal. cans.

Specifications for 10 year Bonded Cold Process Roofing

(Specifications for twenty year and fifteen year periods for Eastern and Western areas only are available on request.)

Period of band-years	Specification Designation	Deck	Limitations of Roof incline in inches per foot	Surface Finish	Construction			Materials			
					No. of plies of Cold Process Felt	Layers of bitumen	Primer—gallons	Sheathing Paper	Cold Process Felt—lbs.	Fibrex* Cement—Gallons	Static Asphalt—gallons
10	CP-3-C	Wood	½" up to 6"	Static Asphalt	2	2	.....	.....	106	1½	3
10	CP-4-C	Insulation on wood	½" up to 6"	Static Asphalt	2	3	.....	.....	106	3½	3
10	CP-5-C	Concrete or Gypsum	½" up to 3"	Static Asphalt	2	3	1	.....	106	3½	3
10	CP-6-C	Insulation on concrete or gypsum	½" up to 3"	Static Asphalt	2	3	1	.....	106	3½	3
10	CP-7-C	Insulation on steel	½" up to 3"	Static Asphalt	2	3	.....	.....	106	3½	3

If standard roof insulation is used in Specifications CP-4-C, CP-6-C, or CP-7-C, felt and insulation shall be cemented in hot asphalt.

On Specifications CP-6-C and CP-7-C, five gallons of Cold Process Insulation Cement are required for embedding precoated Cold Process roof insulation.

Over Wood Decks

For New Construction or for Re-roofing

INCLINE—½" to 6" per ft.

SPECIFICATION—CP-3-Type C

PRELIMINARY REQUIREMENTS FOR ALL DECKS

Wood decks shall be of tongue and groove lumber, smooth, firm, free from loose or curled boards. Large cracks, open joints or open knot holes shall be covered with metal strips nailed to deck. Non-combustible decks shall be smooth, dry, free from high spots, depressions, debris and free from frost. Any unevenness in the deck surface shall be corrected before application of roofing. Precast slabs shall have a nailable surface for any nailing required and shall be evenly and firmly set with interlocking joints well pointed up. Steel decks shall be free from rust, cleaned of all debris and shall be covered with a layer of the Cold Process coated roof insulation. Steel decks of the open channel type shall be covered with at least 1" thickness of insulation. On reroofing work, clean old smooth surfaced roofs by thoroughly brooming. Cut all buckles, recementing and nailing the felts. Renail any open laps. Remove all loose or raised nails. Clean old slag roofs by removing all slag and any layers of old felt as may be required to provide a smooth, even surface, free from slag particles. Check old roof deck for any weak or rotted sheathing boards and replace with new sheathing where necessary. Over old tarred felts on wood decks after all slag has been removed apply two layers of sheathing paper and a coated base felt, laid dry, and nailed solidly along laps and through the center on 12 in. centers to divorce the old tarred felts from the new roofing felts, or else remove all old roofing down to a clean surface, free from old roofing pitch. Level any low spots or hollow areas over old roofing felts with a screed coat of Col-Ply Cement thickened sufficiently by the addition of Portland Cement. All decks shall be properly graded and drains shall be set to allow free flow of water.

Cants Strips—At walls install 3" x 3" wood cant strips coated with roof saturant on both new construction and reroofing work.

Nailing Strips—On inclines over 1" per foot, all decks must permit secure nailing or poured deck shall have 1" x 2" wood nailing strips (set by general contractor when deck is poured) flush with deck surface and parallel with the incline on 3 ft. centers for the backnailing of felts. Similar nailing strips centered 3" in from open edges or 3" from walls shall also be provided for the nailing of metal edge strips and metal edge flashing. Where insulation is to be used and the incline is over 1" per foot, all decks must permit secure nailing or poured decks shall have 1" x 3" wood nailing strips (set by general contractor when deck is poured) flush with deck surface, parallel with incline on 47" centers; or after deck is poured, 3" wide wood nailing strips of the same thickness as insulation shall be installed and securely fastened to deck, parallel with incline and set so that the edge to edge dimension of wood strips will allow sufficient clearance for embedding insulation between the wood nailing strips.

Wood Strips—On any deck where insulation is to be applied, install wood strips 4" wide at any open edges and 6" wide at the walls, of the same thickness as insulation, for the nailing of metal edging and metal base flashing.

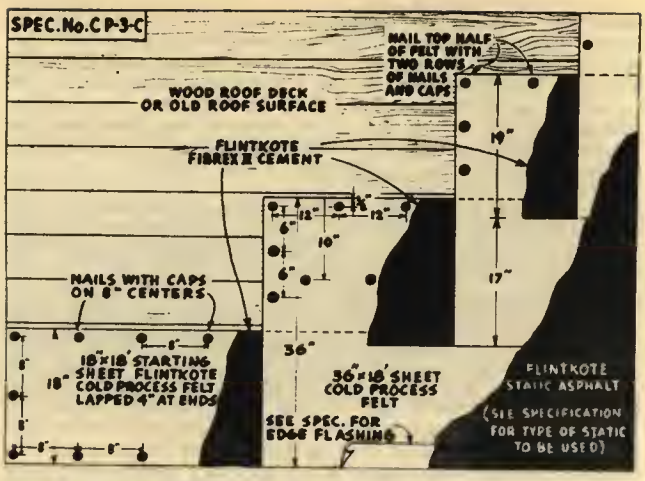
APPLICATION OF COLD PROCESS ROOFING

Preparation of Felts—Cut felt into 12 ft. or 18 ft. lengths and stack flat 24 hours before application.

First—Cover valleys of deck with a layer of felt 36 in. wide, nailed to deck.

Second—At low point of roof, apply an 18 in. wide felt lapped vertically 4 in., turned down over open edges 3 in. and embedded over cant strip and up on wall 2 in. in Fibrex Cement. Nail felt at all edges and at low point or bottom edge on 8 in. centers, and also at top of cant strip on 18 in. centers.

Third—Over this starting sheet, spray,—or spot pour and evenly brush out,—Fibrex Cement using 1½ gals. per 66 lineal feet 18 in. wide. Embed a 36 in. wide felt lapped vertically 4 in., turned down over open edges 3 in. and cemented over cant strip and up on wall 2 in. in Fibrex Cement. Nail the upper part of this felt in two rows 1½ in. and 10 in. from top edge on 12 in.



centers staggered. Nail the upper vertical edge of the underlying felt at the 4 in. lap with three nails and flat caps on 6 in. centers and cement the overlying felt for the full length of the vertical lap. Nail all turned down edges of felt into vertical wood facia strip on 8 in. centers.

Extend the roofing on flat inclined surfaces up on steep inclined surfaces 24 in., nailed at top edge on 12 in. centers and carry the roofing on the steep inclined surface down over flat inclined surface to provide a 24 in. lap.

When spray method is employed, use flat wood strips 1 in. thick and 10 ft. long for masking strips to confine the cement to the lower edge of lap.

Fourth—Continue to apply 36 in. wide felts, lapped 19 in. horizontally and 4 in. vertically, cemented and nailed as specified above. Each course of felt shall break laps vertically with the preceding course. Broom out the surface of felts with a stable type of broom or roll the surface with a suitable roller thirty minutes after embedding felts so that all laps are firmly cemented.

Edging—Install metal edging at all open edges. Cover metal edge on roof with a 6 in. and an 8 in. wide Cold Process Felt, cemented solidly in Fibrex Cement.

Flashing—Apply metal base and cap flashing and cover metal edge on roof with a 6 in. and 8 in. wide Cold Process Felt cemented solidly in Fibrex Cement or apply Flintkote Standard Cold Process Base Flashing with metal cap flashing. At all chimney stacks or heat flues apply copper base and cap flashing. Where any structural member, vent pipe or other projection extends through the roof surface, install suitable type of metal "pitch pocket" or other approved type of metal base and collar flashing.

Surfacing—Coat the roof surface with three gallons per 100 sq. ft. of either Flintkote Static Asphalt Fibrated (applied by brush) or Flintkote Nu-Static (applied by spray). Do not apply Static Asphalt when temperature is under 45°F. and only apply when clear weather conditions will exist for 24 hours to allow the Static Asphalt to thoroughly set. (In the Southern Division states of South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi, Louisiana, Arkansas, Texas and Oklahoma, not less than four gallons per 100 sq. ft. of Static Asphalt Fibrated or Nu-Static shall be used for the surface coating.)

General—Do not apply Fibrex Cement or Static Asphalt Fibrated by dipping brush into container and brushing out as satisfactory coverage will not be obtained. After spot pouring, brush out Fibrex Cement with a four knot brush and brush out Static Asphalt Fibrated with a 20 in. wide floor broom, well dampened with water. Do not use Static Asphalt Fibrated with spray equipment,—use Nu-Static. Where spray method is used, the rate of flow should be periodically checked to be certain that the specified quantity of Fibrex Cement and Nu-Static is being applied.

Bond—Refer to the nearest Division or District Office of The Flintkote Company for the bond period allowable on the above type of specification. Roofing bonds are only available within the United States (except in the states of the Pacific Coast zone) provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification CP-3-C.

For New Construction or for Re-roofing

INCLINE—½" to 6" per ft.

SPECIFICATION—CP-4-Type C

PRELIMINARY REQUIREMENTS

—See Specification CP-3-Type C

APPLICATION OF INSULATION

The architect or engineer shall determine the thickness of insulation required.

Where Normal Conditions Will Exist in the Building—Over new wood decks apply sheathing paper lapped 4 in. Then, over the sheathing paper or over the old roofing felts lay insulation in broken joint construction. Seal the edges of insulation at wood edge strip and at walls with a layer of felt or membrane 6 in. under and 6 in. over the edge, cemented in Fibrex Cement and nail each sheet of insulation at all edges and through the center on 12 in. centers into wood deck 1 in. with nails and flat caps or large head nails. Each layer shall break joints with any underlying layer and nailing shall then be made through the top layer as specified above. If insulation is to be isolated into separate areas, install felt path strips extending 4 in. under one section of insulation and 4 in. over the adjacent section of insulation, cemented solidly in Fibrex Cement at 30 ft. x 30 ft. intervals starting 4 ft. from all walls.

Where Humid Conditions Will Exist in the Building—On roof decks of buildings which are to be heated and which will have an inside humidity exceeding the normal outside humidity and where outside winter temperatures below 35°F. will exist, apply a vapor barrier consisting of one layer of Cold Process Felt, lapped 6 in., cemented between laps with Fibrex Cement and nailed to hold in place. Coat the surface of this felt with five gallons per 100 sq. ft. of Cold Process Roof Insulation Cement and embed insulation, sealing all outside edges as previously specified. On roof decks over dye houses, paper mill rooms, laundries, etc., the architect or engineer should specify a heavier type of vapor barrier.

Cants—At walls install 3" x 3" wood cant strips coated with Roof Saturant on both new construction and on reroofing work.

APPLICATION OF COLD PROCESS ROOFING

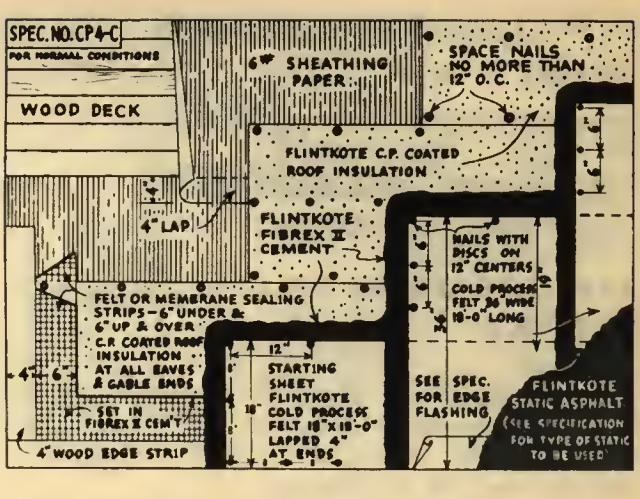
Preparation of Felts—Cut felt into 12 ft. or 18 ft. lengths and stack flat 24 hours before application.

First—Cover valleys of insulated deck with a layer of felt 36 in. wide cemented to insulation with Fibrex Cement.

Second—At low point of roof, spray,—or spot pour and evenly brush out,—Fibrex Cement using two gallons per 66 lineal feet 18 in. wide. Embed an 18 in. wide felt, lapped vertically 4 in., turned down over open edges 3 in. and cemented over cant strip and up on wall 2 in. in Fibrex Cement. Nail felt at top edge on 12 in. centers also at low point or bottom edge and at vertical edges on 8 in. centers into wood deck and at top of cant strip on 18 in. centers.

Third—Over this starting sheet and up on insulation then apply Fibrex Cement using 1¾ gals. per 33 lineal feet 36 in. wide. Embed a 36 in. wide felt lapped vertically 4 in., turned down over open edges 3 in. and cemented over cant strip and up on wall 2 in. in Fibrex Cement. Nail this felt 1½ in. from top edge on 12 in. centers. Nail the upper vertical edge of the underlying felt at the 4 in. lap with three nails and flat caps on 6 in. centers. All nailing shall penetrate wood deck 1 in. Cement the overlying felt of the 4 in. lap for the full length of lap. Nail all turned down edges of felt into vertical wood facia strip on 8 in. centers.

Extend the roofing on flat inclined surfaces up on steep inclined surfaces 24 in., nailed at top edge on 12 in. centers and carry the roofing on the steep inclined surface down over flat inclined surface to provide a 24 in. lap.



When spray method is employed, use flat wood strips 1 in. thick and 10 ft. long for masking strips to confine the cement to the lower edge of lap.

Fourth—Continue to apply 36 in. wide felts, lapped 19 in. horizontally and 4 in. vertically, cemented and nailed as specified above. Each course of felt shall break laps vertically with the preceding course. Broom out the surface of felts with a stable type of broom or roll the surface with a suitable roller thirty minutes after embedding felts so that all laps are firmly cemented.

Edging—Install metal edging at all open edges. Cover metal edge on roof with a 6 in. and an 8 in. wide Cold Process Felt, cemented solidly in Fibrex Cement.

Flashing—Apply metal base and cap flashing and cover metal edge on roof with a 6 in. and 8 in. wide Cold Process Felt cemented solidly in Fibrex Cement or apply Flintkote Standard Cold Process Base Flashing with metal cap flashing. At all chimney stacks or heat flues apply copper base and cap flashing. Where any structural member, vent pipe or other projection extends through the roof surface, install suitable type of metal "pitch pocket" or other approved type of metal base and collar flashing.

Surfacing—Coat the roof surface with three gallons per 100 sq. ft. of either Flintkote Static Asphalt Fibrated (applied by brush) or Flintkote Nu-Static (applied by spray). Do not apply Static Asphalt when temperature is under 45°F. and only apply when clear weather conditions will exist for 24 hours to allow the Static Asphalt to thoroughly set. (In the Southern Division states of South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi, Louisiana, Arkansas, Texas and Oklahoma, not less than four gallons per 100 sq. ft. of Static Asphalt Fibrated or Nu-Static shall be used for the surface coating.)

General—Do not apply Fibrex Cement or Static Asphalt Fibrated by dipping brush into container and brushing out as satisfactory coverage will not be obtained. After spot pouring, brush out Fibrex Cement with a four knot brush and brush out Static Asphalt Fibrated with a 20 in. wide floor broom, well dampened with water. Do not use Static Asphalt Fibrated with spray equipment,—use Nu-Static. Where spray method is used, the rate of flow should be periodically checked to be certain that the specified quantity of Fibrex Cement and Nu-Static is being applied.

Bond—Refer to the nearest Division or District Office of The Flintkote Company for the bond period allowable on the above type of specification. Roofing bonds are only available within the United States (except in the states of the Pacific Coast zone) provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification CP-4-C.

Over Poured or Precast Concrete or Gypsum Decks

For New Construction or for Re-roofing

INCLINE—½" to 3" per ft.

SPECIFICATION—CP-5-Type C

PRELIMINARY REQUIREMENTS

—See Specification CP-3-Type C

APPLICATION OF COLD PROCESS ROOFING

Preparation of Felts—Cut felt into 12 ft. or 18 ft. lengths and stack flat 24 hours before application.

First—Prime deck with Roof Saturant.

Second—Cover valleys of deck with a layer of felt 36 in. wide cemented to deck in Fibrex Cement.

Third—At low point of roof, spray,—or spot pour and evenly brush out,—Fibrex Cement using two gallons per 66 lineal feet 18 in. wide. Embed an 18 in. wide felt lapped vertically 4 in., turned down over open edges 3 in. and embedded over cant strip and up on wall 2 in. in Fibrex Cement. Nail felt at top edge on 12 in. centers, also at low point or bottom edge and at vertical edges on 8 in. centers into deck, or nail into wood nailing strips on 8 in. centers, and also nail at top of cant strip on 18 in. centers.

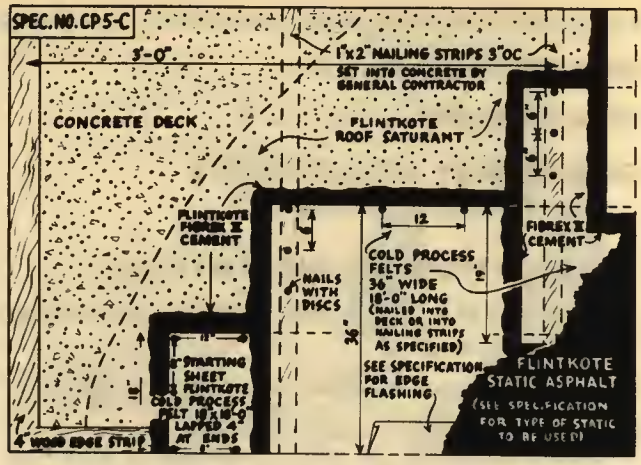
Fourth—Over this starting sheet and up on deck then apply Fibrex Cement using 1¾ gals. per 33 lineal feet 36 in. wide and embed a 36 in. wide felt lapped vertically 4 in., turned down over open edges 3 in. and cemented over cant strip and up on wall 2 in. in Fibrex Cement. Nail this felt 1½ in. from top edge on 12 in. centers or nail the upper part of the felt into vertical wood nailing strips with three nails on 6 in. centers. On nailable decks also nail the upper vertical edge of the underlying felt at the 4 in. lap with three nails and flat caps on 6 in. centers and cement the overlying felt for the full length of the vertical lap. Nail all turned down edges of felt into vertical wood facia strip on 8 in. centers.

Extend the roofing on flat inclined surfaces up on steep inclined surfaces 24 in., nailed at top edge on 12 in. centers and carry the roofing on the steep inclined surface down over flat inclined surface to provide a 24 in. lap.

When spray method is employed, use flat wood strips 1 in. thick and 10 ft. long for masking strips to confine the cement to the lower edge of lap.

Fifth—Continue to apply 36 in. wide felts, lapped 19 in. horizontally and 4 in. vertically, cemented and nailed as specified above. Each course of felt shall break laps vertically with the preceding course. Broom out the surface of felts with a stable type of broom or roll the surface with a suitable roller thirty minutes after embedding felts so that all laps are firmly cemented.

Edging—Install metal edging at all open edges. Cover metal edge on roof with a 6 in. and an 8 in. wide Cold Process Felt, cemented solidly in Fibrex Cement.



Flashing—Apply metal base and cap flashing and cover metal edge on roof with a 6 in. and 8 in. wide Cold Process Felt cemented solidly in Fibrex Cement or apply Flintkote Standard Cold Process Base Flashing with metal cap flashing. At all chimney stacks or heat flues apply copper base and cap flashing. Where any structural member, vent pipe or other projection extends through the roof surface, install suitable type of metal "pitch pocket" or other approved type of metal base and collar flashing.

Surfacing—Coat the roof surface with three gallons per 100 sq. ft. of either Flintkote Static Asphalt Fibrated (applied by brush) or Flintkote Nu-Static (applied by spray). Do not apply Static Asphalt when temperature is under 45°F. and only apply when clear weather conditions will exist for 24 hours to allow the Static Asphalt to thoroughly set. (In the Southern Division states of South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi, Louisiana, Arkansas, Texas and Oklahoma, not less than four gallons per 100 sq. ft. of Static Asphalt Fibrated or Nu-Static shall be used for the surface coating.)

General—Do not apply Fibrex Cement or Static Asphalt Fibrated by dipping brush into container and brushing out as satisfactory coverage will not be obtained. After spot pouring, brush out Fibrex Cement with a four knot brush and brush out Static Asphalt Fibrated with a 20 in. wide floor broom, well dampened with water. Do not use Static Asphalt Fibrated with spray equipment,—use Nu-Static. Where spray method is used, the rate of flow should be periodically checked to be certain that the specified quantity of Fibrex Cement and Nu-Static is being applied.

Bond—Refer to the nearest Division or District Office of The Flintkote Company for the bond period allowable on the above type of specification. Roofing bonds are only available within the United States (except in the states of the Pacific Coast zone) provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification CP-5-C.

For New Construction or for Re-roofing

INCLINE—½" to 3" per ft.

SPECIFICATION—CP-6-Type C

PRELIMINARY REQUIREMENTS

—See Specification CP-3-Type C

APPLICATION OF INSULATION

The architect or engineer shall determine the thickness of insulation required.

On new construction prime deck with Roof Saturant. The application of a vapor barrier is recommended consisting of one layer of Cold Process Felt lapped 6" and cemented solidly to deck with Fibrex Cement. Over this Vapor Barrier or over the primed deck surface if a Vapor Barrier is not applied (or over the properly prepared surface of the old roofing felts) spot pour and evenly brush out Weld-On Cement using not less than 2½ gallons per 100 sq. ft. and embed insulation. Seal the edges of insulation at wood edge strips and at walls with a layer of felt or membrane 6 in. under and 6 in. over edge cemented in Weld-On Cement. After cementing insulation it shall be nailed around all edges on 10 in. centers into nailable decks or else insulation shall be embedded in the Weld-On Cement between wood nailing strips as previously specified. Each layer shall break joints with and shall be cemented in Weld-On Cement to any underlying layer and nailing shall be made through the top layer as specified. If insulation is to be isolated into separate areas, install felt path strips extending 4 in. under one section of insulation and 4 in. over the adjacent section of insulation cemented solidly in the Weld-On Cement at 30 ft. x 30 ft. intervals starting 4 ft. from all walls. On roof decks over dye houses, paper mill rooms, laundries, etc., the architect or engineer should specify a double layer of felt for vapor barrier if deemed necessary.

Cants—At walls install 3" x 3" wood cant strips coated with Roof Saturant on both new construction and on re-roofing work.

APPLICATION OF COLD PROCESS ROOFING

Preparation of Felts—Cut felt into 12 ft. or 18 ft. lengths and stack flat 24 hours before application.

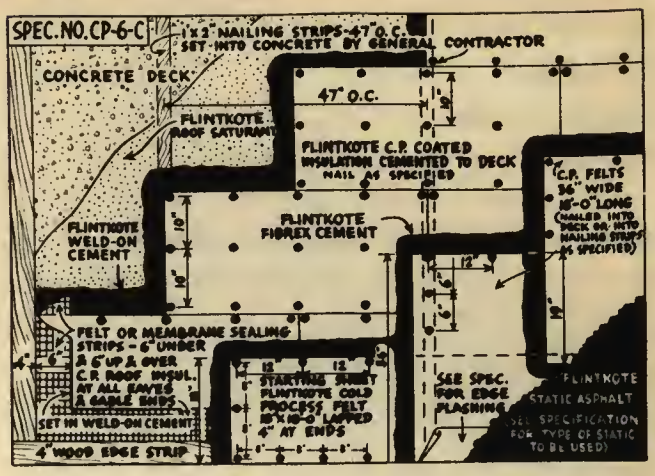
First—Cover valleys of insulated surface with a layer of felt 36 in. wide cemented to insulation with Fibrex Cement.

Second—At low point of roof, spray,—or spot pour and evenly brush out,—Fibrex Cement using two gallons per 66 lineal feet 18 in. wide. Embed an 18 in. wide felt, lapped vertically 4 in., turned down over open edges 3 in. and cemented over cant strip and up on wall 2 in. in Fibrex Cement. Nail this felt at top edge on 12 in. centers or nail into wood nailing strips on 8 in. centers and also nail at low point and at vertical edges on 8 in. centers and at top of cant strip on 18 in. centers.

Third—Over this starting sheet and up on insulation then apply Fibrex Cement using 1¾ gals. per 33 lineal feet 36 in. wide. Embed a 36 in. wide felt lapped vertically 4 in., turned down over open edges 3 in. and cemented over cant strip and up on wall 2 in. in Fibrex Cement. Nail this felt 1½ in. from top edge on 12 in. centers. Nail the upper vertical edge of the underlying felt at the 4 in. lap with three nails and flat caps on 6 in. centers. Cement the overlying felt of the 4 in. lap for the full length of lap. Nail all turned down edges of felt into vertical wood facia strip on 8 in. centers.

Extend the roofing on flat inclined surfaces up on steep inclined surfaces 24 in., nailed at top edge on 12 in. centers and carry the roofing on the steep inclined surface down over flat inclined surface to provide a 24 in. lap.

When spray method is employed, use flat wood strips 1 in. thick and 10 ft. long for masking strips to confine the cement to the lower edge of lap.



Fourth—Continue to apply 36 in. wide felts, lapped 19 in. horizontally and 4 in. vertically, cemented and nailed as specified above. Each course of felt shall break laps vertically with the preceding course. Thirty minutes after embedding felts broom out the surface of felts with a stable type of broom or roll the surface with a suitable roller so that all laps are firmly cemented.

Edging—Install metal edging at all open edges. Cover metal edge on roof with a 6 in. and an 8 in. wide Cold Process Felt, cemented solidly in Fibrex Cement.

Flashing—Apply metal base and cap flashing and cover metal edge on roof with a 6 in. and 8 in. wide Cold Process Felt cemented solidly in Fibrex Cement or apply Flintkote Standard Cold Process Base Flashing with metal cap flashing. At all chimney stacks or heat flues apply copper base and cap flashing. Where any structural member, vent pipe or other projection extends through the roof surface, install suitable type of metal "pitch pocket" or other approved type of metal base and collar flashing.

Surfacing—Coat the roof surface with three gallons per 100 sq. ft. of either Flintkote Static Asphalt Fibrated (applied by brush) or Flintkote Nu-Static (applied by spray). Do not apply Static Asphalt when temperature is under 45°F. and only apply when clear weather conditions will exist for 24 hours to allow the Static Asphalt to thoroughly set. (In the Southern Division states of South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi, Louisiana, Arkansas, Texas and Oklahoma, not less than four gallons per 100 sq. ft. of Static Asphalt Fibrated or Nu-Static shall be used for the surface coating.)

General—Do not apply Fibrex Cement or Static Asphalt Fibrated by dipping brush into container and brushing out as satisfactory coverage will not be obtained. After spot pouring, brush out Fibrex Cement with a four knot brush and brush out Static Asphalt Fibrated with a 20 in. wide floor broom, well dampened with water. Do not use Static Asphalt Fibrated with spray equipment,—use Nu-Static. Where spray method is used, the rate of flow should be periodically checked to be certain that the specified quantity of Fibrex Cement and Nu-Static is being applied.

Bond—Refer to the nearest Division or District Office of The Flintkote Company for the bond period allowable on the above type of specification. Roofing bonds are only available within the United States (except in the states of the Pacific Coast zone) provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification CP-6-C.

Over Flintkote Cold Process Insulation on Steel Decks

FLINTKOTE COLD PROCESS ROOFING

For New Construction or for Re-roofing

INCLINE—½" to 3" per ft.

SPECIFICATION—CP-7-Type C

PRELIMINARY REQUIREMENTS

—See Specification CP-3-Type C

APPLICATION OF INSULATION

The architect or engineer shall determine the thickness of insulation required.

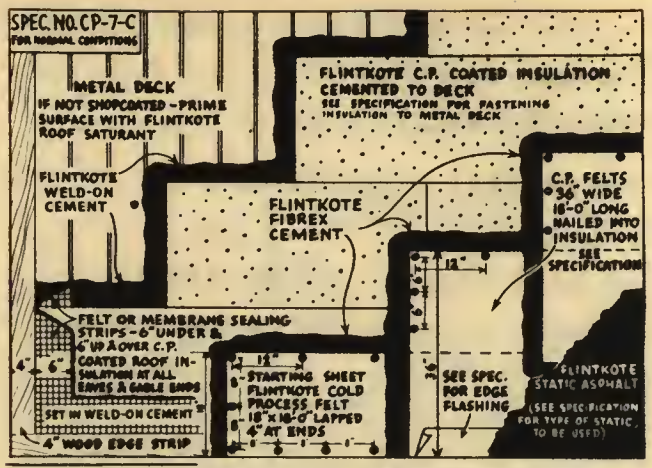
Where Normal Conditions will exist in the building—If new steel deck has not been shop coated, prime deck with Roof Saturant. Then spot pour and evenly brush out Weld-On Cement using not less than 2½ gallons per 100 sq. ft. and embed insulation in broken joint construction. Seal the edges of insulation at wood edge strips and at walls with a layer of felt 6" under and 6" over edge cemented in Weld-On Cement. On inclines over 1" per foot insulation shall also be securely fastened or embedded in Weld-On Cement lengthwise between wood nailing strips. On steel decks of the open channel type insulation shall not be less than 1 in. in thickness solidly cemented to deck and mechanically fastened with solid bearings at all ends. Open joints over the channels of steel decks shall not be permitted. Each layer shall break joints with and shall be cemented to any underlying layer with Weld-On Cement. If insulation is to be isolated into separate areas, install felt path strips extending 4 in. under one section of insulation and 4 in. over the adjacent section of insulation cemented solidly in Weld-On Cement at 30 ft. x 30 ft. intervals starting 4 ft. from all walls.

Where humid conditions will exist in the building—On roof decks of buildings which are to be heated and which will have an inside humidity exceeding the normal outside humidity and where outside winter temperatures below 35°F. will exist the application of a vapor barrier is recommended consisting of one layer of Cold Process Felt lapped 6" and cemented solidly to the steel deck with Fibrex Cement. Over this felt spot pour and evenly brush out Weld-On Cement using not less than 2½ gals. per 100 sq. ft. and embed insulation in broken joint construction, sealing all outside edges as previously specified. On roof decks over dye houses, paper mill rooms, laundries, etc., the architect or engineer should specify a double layer of felt for vapor barrier if deemed necessary.

Cants—At walls install 3" x 3" wood cant strips coated with Roof Saturant on both new construction and on reroofing work.

APPLICATION OF COLD PROCESS ROOFING

Preparation of Felts—Cut felt into 12 ft. or 18 ft. lengths and stack flat 24 hours before application.



First—Cover valleys. (Same as Specification CP-4-Type C.)

Second—Embed starting sheet. (Same as Specification CP-4-Type C.)

Third—Over the starting sheet apply Fibrex Cement using 1¾ gals. per 33 lineal feet 36 in. wide. Embed a 36 in. wide felt lapped vertically 4 in., turned down over open edges 3 in. and cemented over cant strip and up on wall 2 in. in Fibrex Cement. Nail this felt 1½ in. from top edge on 12 in. centers or into the vertical wood nailing strips when provided with three nails vertically on 6 in. centers. Nail the upper vertical edge of the underlying felt at the 4 in. lap with three nails and flat caps on 6 in. centers into insulation only. Nailing of felts shall not penetrate steel deck. Cement the overlying felt of the 4 in. lap for the full length of lap. Nail all turned down edges of felt into vertical wood facia strip on 8 in. centers.

Extend the roofing (same as Specification CP-4-Type C).

Fourth—Continue to apply the 36 in. wide felts, lapped 19 in. horizontally and 4 in. vertically (same as in Specification CP-3-Type C).

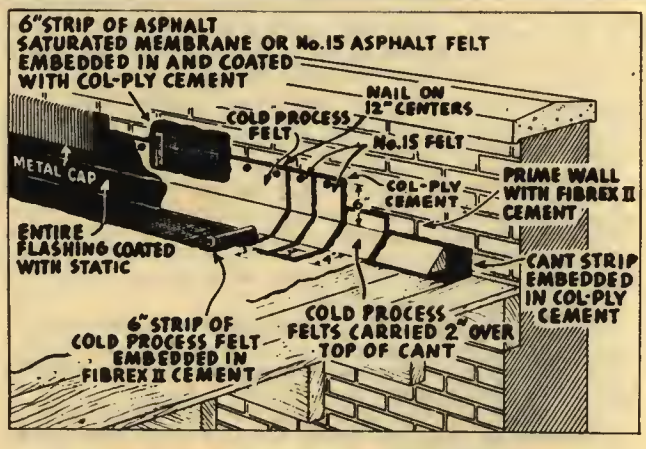
Edging
Flashing
Surfacing
General

Same as for Spec. CP-3-Type C

Bond—Refer to the nearest Division or District Office of The Flintkote Company for the bond period allowable on the above type of specification. Roofing bonds are available within the United States, except in the states of the Pacific Coast zone, provided application has been made by a Flintkote Approved Roofer strictly in accordance with Flintkote Specification CP-7-Type C.

FLINTKOTE COLD PROCESS FLASHINGS

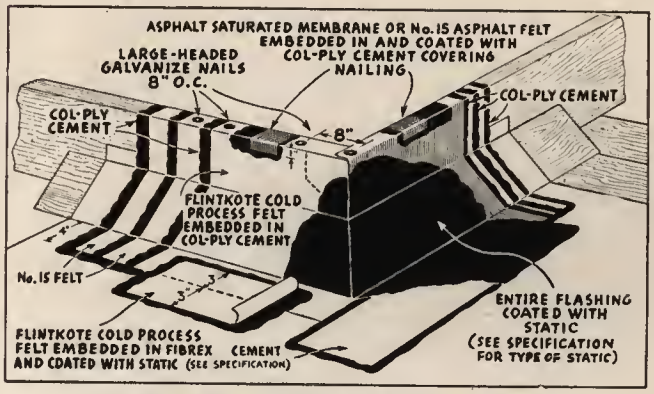
Base Flashing for Old or New Roofs—A wood cant strip formed of 3" x 3" lumber split diagonally shall be installed at all angles between roof deck and parapet walls or curbs and shall be embedded at wall and on roof surface in a heavy coating of Flintkote Col-Ply Cement. Cant strip shall be solidly nailed in place. Prime wall surface above cant with Flintkote Fibrex Cement to the proper height required by new base flashing. Then extending out on roof surface 4" and up over face of cant and up on wall not less than 6" apply either two layers of No. 15 felt and one layer of Cold Process Felt, or two layers of Cold Process Felt, each embedded in Col-Ply Cement, rubbing felts well into the cement. The felts shall be nailed at top edge into the wall on not over 12" centers with 1¼" nails and flat caps. Base flashing felts shall be applied in lengths not to exceed 10 ft. and end laps shall be not less than 6", well embedded in Col-Ply Cement. Exposed lap joints shall be covered with 6" wide Asphalt Saturated Membrane or Cold Process Felt embedded in a heavy application of Col-Ply Cement. The top of base flashing shall then be covered with a 6" strip of membrane or No. 15 felt embedded in and coated over with Col-Ply Cement, and shall be covered at the joint on roof surface with a 6" strip of Cold Process Felt embedded in a heavy coating of Fibrex Cement. These strips shall extend 3" on either side of joint on roof deck.



Base Flashing for New or Reroofing Application
10 Year Type

and shall cover the joint and all nailing at the top of flashing felt. These strips shall be applied in lengths not to exceed 10 ft., breaking joints with the vertical joints of base flashing. End laps shall be not less than 6". Any other miscellaneous nailing shall likewise be covered with membrane or felt strips embedded in and coated with a heavy application of Col-Ply Cement. The entire base flashing felt shall be coated with two heavy applications of Flintkote Nu-Static or Static Asphalt (Fibrated) carried up on vertical face and out on roof surface over the felt strip. Metal cap flashing shall be installed down over base flashing so as to cover same at least 4".

Flashing Around Skylight and Scuttle Curbs, etc. — Flashing around skylight and scuttle curbs shall be constructed in a similar manner as indicated above except that flashing should be carried up over curb and shall be nailed into the flat surface at the top of curb with large head nails on not over 8" centers. This nailing shall be covered with a strip of membrane or No. 15 felt laid in and coated over with Col-Ply Cement and brought down over sides at least 1". Existing metal flashing around chimney walls shall be recovered in a similar manner but the top of flashings must be solidly nailed and felt stripped and the existing metal counter flashing brought down over same. If old metal flashings are in a badly deteriorated condition, they shall be removed and new copper base and cap flashing shall be installed around chimney.



Flashing Around Skylight and Scuttle Curbs
10 Year Type

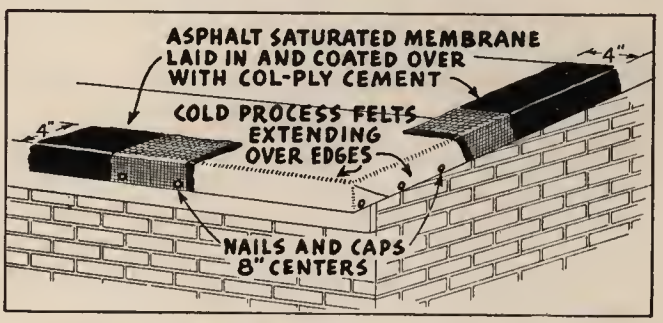
On new construction copper base and cap flashing should be applied around all chimney stacks. (Where top of curb is more than 10" above top of cant strip a special Flintkote specification will be required.) All vent stacks or other projections through roof surface shall be flashed with copper pitch pockets or with copper or lead base flashing extending out on roof not less than 6" and capped with a copper or lead collar flashing. Cover the roof flange of such flashing with two layers of Flintkote Cold Process Felt 6" and 8" wide, each embedded in Fibrex Cement and the surface coated with Static Asphalt. Felts shall be applied around all projections on the roof so as to thoroughly seal joints at roof deck.

EDGING

At all open edges apply a metal edge extending out not less than 4" on roofing felt, and down over vertical face. Nail roof flange on 12" centers and cover with two layers of Cold Process Felt 6" and 8" wide respectively, each laid in Fibrex Cement and the surface coated with a heavy application of Nu-Static or Static Asphalt (Fibrated).

Where old metal edging or metal gutters exist, edge strip shall be constructed of one layer of asphalt saturated membrane out on roof 6" or of sufficient width to cover old metal edge and down over inner edge of metal gutter 3" embedded in and coated over with Col-Ply Cement.

Alternate Method of Edging on Re-roofing Work—At all open eaves and gable ends carry all roofing felts down over the edge and securely nail into the vertical face on not over 8" centers with large head galvanized nails 1" from lower edge of felt.



Flashing Open Edges for Reroofing Work Only

Then cover all such edges with a layer of Membrane extending 4" out on roof deck and down over vertical face covering nailing. This membrane edge strip shall be embedded in and coated over with a heavy application of Col-Ply Cement. All end laps shall be not less than 6".

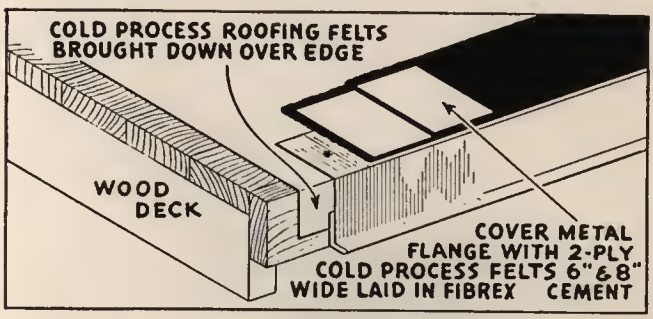
Valleys—Before roofing felts are applied all valleys on roof surface shall be reinforced by the use of a layer of Flintkote Cold Process Felt nailed throughout surface on 12" centers staggered into new wood sheathing or laid in Flintkote Col-Ply Cement over old roofing felt. This valley lining shall extend 18" on either side of valley line. The two layers of roofing felts shall entirely cover this valley lining.

PARAPET WALLS

Parapet walls, especially those that are porous and show signs of spalling, are frequently causes of water penetration and subsequent leaks. Because of the widely varying conditions and stages of deterioration which are encountered in such old walls, it is suggested that old parapet walls be reconditioned to conform with good masonry practice. Such reconditioned parapet walls may then be coated with Nu-Static or Static Asphalt (Fibrated) applied at the rate of not less than 3 gallons per 100 sq. ft., applied in two coats.

Cap Stones or Copings—Concrete or stone copings shall be thoroughly cleaned and shall be coated heavily with Flintkote Nu-Static or Static Asphalt (Fibrated). All cracks, breaks, or joints shall be covered with Asphalt Saturated Membrane embedded in and coated with Col-Ply Cement. Tile copings shall be pointed with Portland cement mortar and all joints shall be coated heavily with Flintkote Nu-Static or Static (Fibrated).

Drains, Vents and Skylights—Drains, vents and skylights shall be carefully inspected for any deterioration and shall be properly repaired.



Flashing at Open Edges for New or Reroofing Application

SURFACING

A final surfacing of Flintkote Nu-Static or Static Asphalt shall be applied over the flashing felts. Application of Static Asphalt (Fibrated) by brush shall be made in two coats, each at the rate of 2 gallons per 100 sq. ft. Application of Nu-Static by spray may be made in one coat at the rate of 4 gallons per 100 sq. ft. Static Asphalt (Fibrated) or Nu-Static shall not be applied if outside temperature is below 45° and only when clear weather conditions exist so as to allow same to dry thoroughly.

QUALITY PRODUCTS FOR NEARLY HALF A CENTURY

Flintkote Built-up Roofs Specifications and Materials are well known for their exactness and reliability. They produce known results. Their uniform quality is assured by nearly half a century of experience in manufacturing roofing materials.

Thousands of firms whose first requirement is complete satisfaction use Flintkote Built-up Roofs. The evergrowing list includes many of the most outstanding names in American industry. A few are listed below:

Stondord Cil Co. of Indiono
Young Men's Christion Associotion
The Borden Company
Firestone Tire & Rubber Co.
Armour & Company of Delowore
Continentol Boking Company
Cudohy Pocking Co.
Gulf Refining Co.
Notionol Shoe Stores
Federol Public Housing Authority
West Disinfecting Co.
Mossochusetts Mutuol Life Insuronce Co.
Shell Oil Co., Inc.
Roilway Express Company
The Equitoble Life Assuronce Society of the United Stotes
Republic Aviotion Corp.
Armstrong Cork Co.
A. C. Spork Plug Co.
Rodio Corporotion of Americo
Swift & Co.
Fodol Brothers
Stondord Oil Co. of Ohio
U. S. Industriol Chemicols, Inc.
Kroft Cheese Co.
Generol Motors Corp.
Todd-Johnson Dry Docks, Inc.
Pennsylvonio Roilrood

Texos & New Orleons R. R. Co.
Socony-Vocuum Oil Co.
Southern University
Sincloir Refining Co.
Cornotion Company
Bousch & Lomb Opticol Co.
F. W. Woolworth Co.
Humble Oil & Refining Co.
Southern Bell Tel. & Tel. Co.
Consolidoted Edison Co.
New York, New Hoven & Hortford R. R.
Ford Motor Company
Pon Americon World Airwoys, Inc.
Newport News Ship Bldg. & Dry Dock Co.
Fronklin-Simon Co.
Notionol Distillers Corp.
Metropoliton Life Insuronce Co.
Bethlehem Steel Co.
Westinghouse Electric & Mfg. Co.
Sofewoy Stores, Inc.
Chrysler Corporotion
Pockord Motor Cor Co.
Continentol Con Company
P. Bollontine & Sons
Armour & Company of Chicogo
Montgomery Word Co.
Anocondo Copper Co.
Todd Shipyords

H. J. Heinz Co.
Fisher Body Corp., Detroit
Seors Roebuck & Co.
S. H. Kress & Co.
Blue Ribbon Creomery
Americon Con Company
Atlontic & Pocific Teo Co.
Tennessee Volley Authority
Grummon Aircroft Corp.
Sun Oil Co.
Prudentiol Life Insuronce Co.
Greyhound Bus Lines, Inc.
Rockefeller Center, Inc.
Americon Broke Shoe & Foundry
Phillips Petroleum Co.
Sheffield Forms, Inc.
W. T. Gront Co.
Johns Hopkins Hospitol
McCrory Stores Corp.
New York Life Insuronce Co.
Procter & Gomble Co.
S. S. Kresge Co.
Americon Chicle Co.
J. Pobst & Sons
Generol Electric Co.
Monhotton Rubber Company
Lone Stor Cement Corp.

THE FLINTKOTE COMPANY

BUILDING MATERIALS DIVISION

30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

DISTRICT OFFICES

ATLANTA 6, GA., 1215 Sylvan Road, S. W.
BOSTON (16), MASS., 925 Park Square Building
CHICAGO HEIGHTS 5, ILL., 17th Street and Wentworth Avenue
DETROIT (27), MICH., 14201 Schaefer Highway
EAST RUTHERFORD, N. J., Central Ave. & Oak St.
NEW ORLEANS (4), LA., Poland and Galvez Streets
WACO, TEXAS, Medical Arts Bldg.
WASHINGTON (5), D. C., Woodward Building
PIONEER DIVISION — THE FLINTKOTE COMPANY, LOS ANGELES (54), CALIF., 55th and Alameda Streets

SR-2

JOHNS-MANVILLE

JM

PRODUCTS

Johns-Manville

Roofing and Siding

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IN this manual, Johns-Manville offers to architects and engineers, complete and comprehensive built-up roofing specifications covering the usual types of roof deck construction. These specifications are based on years of experience. They derive their authority from proven performances over long periods of time and under every weather condition. Johns-Manville—with the background of 88 years in the roofing industry—offers a definite specification for every roofing requirement. As the charts below show, Johns-Manville recommends Asbestos Smooth-Surfaced Flexstone Roofs on all inclines from ½" to 6". On roofs ranging from dead level to a pitch of not exceeding 2" to the foot, J-M Tar and Gravel Roofs may be used.

We have listed specifications for certain special type roofs but if you have an extraordinary condition not covered in this manual, please consult the nearest Johns-Manville office.

FLEXSTONE* ROOFS section 1
TAR AND GRAVEL ROOFS section 2
SPECIAL ROOFS section 3
FLASHINGS section 4
ROOF INSULATION section 5

ANALYSIS CHART FOR JOHNS-MANVILLE FLEXSTONE BUILT-UP ROOFS

ON INCLINES ½" TO 6" PER FOOT

TYPE OF ROOF DECK	ROOFING	PAGE	BASE FELTS			FINISHING FELTS (ALL MOPPED)		LBS. OF ASPHALT PER SQUARE
			No. 50 Asphalt Saturated Asbestos Felt	No. 45 Asphalt Saturated Rag Felt	No. 30 Asphalt Saturated Rag Felt	No. 15 Asphalt Saturated Rag Felt	15 lb. Asphalt Saturated Asbestos Felt	
Over Wood Decks	Flexstone "Super A"	5	*1 (Nail)				3	90
	Flexstone "Standard"	5	*1 (Nail)				2	60
	Flexstone "Service"	5			1 (Nail)		2	60
Over Non-Combustible Decks (Including Nailable Types but Excluding Steel†)	Flexstone "Super A"	6	1 (Mop)				2	90
	Flexstone "Standard"	6		1 (Mop)			2	90
	Flexstone "Service"	6			1 (Mop)		2	90
Over Approved Roof Insulation	Flexstone "Super A"	7					4	130
	Flexstone "Standard"	7					3	100
	Flexstone "Service"	7				1	2	100

*If desired, J-M No. 45 Asphalt Saturated Rag Base Felt may be used instead of J-M No. 50 Asbestos Felt.
†On steel decks, roof insulation must first be installed.

ANALYSIS CHART FOR JOHNS-MANVILLE TAR AND GRAVEL (SLAG) BUILT-UP ROOFS

ON INCLINES NOT EXCEEDING 2" PER FOOT

TYPE OF ROOF DECK	ROOFING	PAGE	ROSIN SIZED SHEATHING PAPER	PLIES OF 15 LB. TAR SATURATED ASBESTOS* FELT		LBS. OF PITCH PER SQUARE
				(Nail)	(Mop)	
Over Wood Decks (Or Other Nailable Type Decks)	5 ply Tar and Gravel	8	1	2	3	150
	4 ply Tar and Gravel	8	1	2	2	125
Over Non-Combustible Decks (Excluding Steel†) or Over Approved Roof Insulation	4 ply Tar and Gravel	9			4	200
	3 ply Tar and Gravel	9			3	175

*J-M Tar Saturated Rag Felt may be used instead of J-M Tar Saturated Asbestos Felt.
†On steel decks, roof insulation must first be installed.

*Reg. U. S. Pat. Off.

NOTE: THESE SPECIFICATIONS DO NOT APPLY TO PACIFIC COAST AREAS. A SPECIAL PACIFIC COAST EDITION IS AVAILABLE ON REQUEST.

JOHNS-MANVILLE FLEXSTONE BUILT-UP ROOFS

Smooth-Surfaced • Asbestos

ON INCLINES ½" TO 6" PER FT.

Advantages of Flexstone Roofs

Won't dry out from the sun • Made of fireproof and rotproof asbestos • Need no periodic coating • Upkeep expense minimized • No extra weight from slag • No clogging of drains or gutters • Actual roof can be seen • Easy to find and repair leaks • Built for long years of service

FLEXSTONE roofs combine the best in roofing materials, engineering practice and application methods to achieve a smooth-surfaced asbestos built-up roof which has no superior. Eighty-eight years of experience in the manufacture of roofing materials, and all the lessons Johns-Manville has learned over that period about the effects of time and weather on roofing, have gone into the making and building of this roof.

Today Flexstone roofs are protecting buildings all over this country and Canada. In many cases, they are still giving satisfactory service after 20, 25 and even 35 years.

Since Flexstone roofs are made of asbestos felts, they have all the advantages of that ageless mineral. The result is literally *a flexible covering of stone*, which effectively resists the drying out action of the sun . . . will not support combustion . . . and is rotproof, long-lived and easy to maintain It's economical in cost, too.

To insure proper and skilled application, Flexstone roofs are applied only by Johns-Manville Approved Roofers—roofers who have been carefully selected on the basis of experience, integrity and financial stability.

Designed to give full and lasting protection to the building and its contents, we believe that a smooth-surfaced, asbestos J-M Flexstone roof is the finest built-up roof that can be specified.

Fig. 1—Magnified Section of J-M Flexstone Roof.

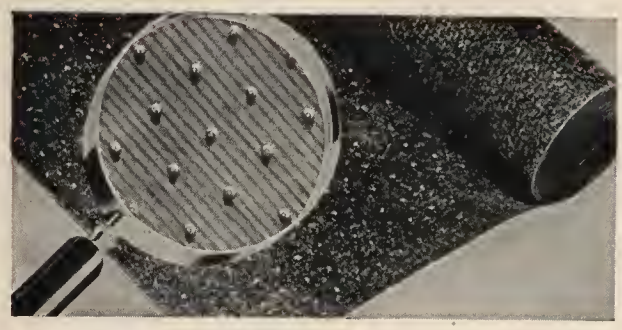


Fig. 2—Flexstone Felts are Perforated with Numerous Small Holes.

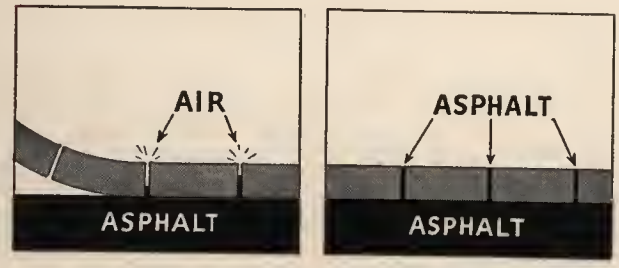
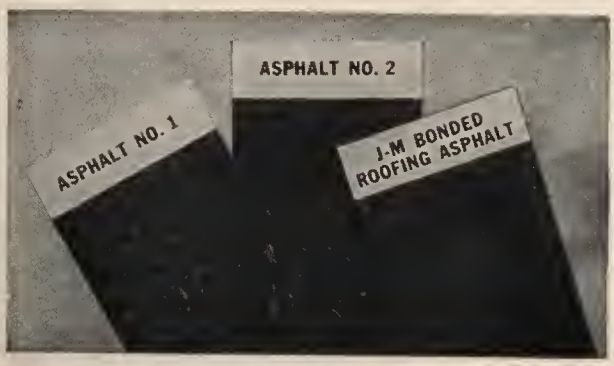


Diagram Shows How Perforations Allow Air to Escape.



After Tests J-M Bonded Asphalt Remained Practically Unchanged.

Why Asbestos Roofs Resist the Drying Out Action of the Sun

Fibres in ordinary roofing felts are hollow. Hence, they act as "wicks" which permit the sun to draw off the asphalt so essential to the life of the roofing felt. But, on the other hand, asbestos fibres are solid—no capillary action is possible and the fibres cannot act as a wick through which the asphalt may be drawn off. Note in illustration (figure one), which is a magnified section of a J-M Asbestos Flexstone roof, how the network of solid asbestos fibres in each ply protects the impregnated asphalt within the felt and at the same time, blankets the layer of asphalt below it.

Asbestos Felts Are Perforated to Make Application Easier and to Eliminate Blisters

As illustrated (figure two) J-M Asbestos Felt is made with millions of tiny perforations. This latest improvement in the manufacture of asbestos felt makes the felt more flexible. As a result, it lays smoother and conforms better to the irregularities of the roof deck. Each perforation serves as a check valve that opens upward. When the felt is laid in hot asphalt, these valves allow trapped air to escape. No air bubbles remain underneath—bubbles which might later develop into troublesome blisters. The hot asphalt "wells up" through the perforations, completely sealing them from below. The subsequent layer of asphalt then seals them from above.

Johns-Manville Uses a Specially Selected Grade of Asphalt

J-M Bonded Roofing Asphalt has proved to be superior to ordinary asphalts. Tested in the most modern types of weathering machines, Bonded Asphalt remained in virtually its original condition after being subjected to alternate cycles of heat, rain and freezing cold equivalent to ten years of actual service.

Grades of Flexstone Roofs

There are three grades of Flexstone roofs. The best, most durable and longest lived is the "Flexstone Super A". Where a less permanent roof will be satisfactory, or where budget restrictions exist, the "Flexstone Standard" or "Flexstone Service" are designed to give adequate protection.

FOR APPLICATION OVER WOOD DECKS

ON INCLINES ½" TO 6" PER FT.

The Flexstone SUPER A Roof

CONDENSED SPECIFICATION

Roofing: Shall be a Johns-Manville Flexstone *Super A* Roof applied in accordance with the manufacturer's specifications, and the work shall be done by a roofing contractor approved by the manufacturer.

COMPLETE SPECIFICATION

Preparation of Deck

Roof deck shall be firm, dry and clean, and properly graded to outlets. Cants shall be installed in the angles formed by the deck and vertical surfaces.

Application of Roofing

First: Lay one thickness of Johns-Manville No. 50 Asbestos* Base Felt, lapping the sheets 2" and nailing at 6" centers through the laps and at 18" centers through the longitudinal center of each sheet in two lines spaced 10" apart, the nails to be staggered.

Second: Over the base felt, lay three plies of Johns-Manville 15 lb. Asphalt Saturated Asbestos Felts, lapping each sheet 22" over the preceding one, mopping the full width under each with 30 lbs. of Johns-Manville Bonded Asphalt per ply, per square, and nailing at 9" centers adjacent to the back edge.

Third: Coat entire surface uniformly with Johns-Manville Regal Roof Coating (1 gal. per square).

**Johns-Manville No. 45 Asphalt Saturated Rag Felt may be used instead of Johns-Manville No. 50 Asbestos Base Felt.*

The Flexstone STANDARD Roof

CONDENSED SPECIFICATION

Roofing: Shall be a Johns-Manville Flexstone *Standard* Roof applied in accordance with the manufacturer's specifications, and the work shall be done by a roofing contractor approved by the manufacturer.

COMPLETE SPECIFICATION

Exactly the same as the *Super A* except change paragraph "Second' under "Application of Roofing" to read:

Second: Over the base felt, lay two plies of Johns-Manville 15 lb. Asphalt Saturated Asbestos Felts, lapping each sheet 17" over the preceding one, mopping the full width under each with 30 lbs. of Johns-Manville Bonded Asphalt per ply, per square, and nailing at 9" centers adjacent to the back edge.

The Flexstone SERVICE Roof

CONDENSED SPECIFICATION

Roofing: Shall be a Johns-Manville Flexstone *Service* Roof applied in accordance with the manufacturer's specifications, and the work shall be done by a roofing contractor approved by the manufacturer.

COMPLETE SPECIFICATION

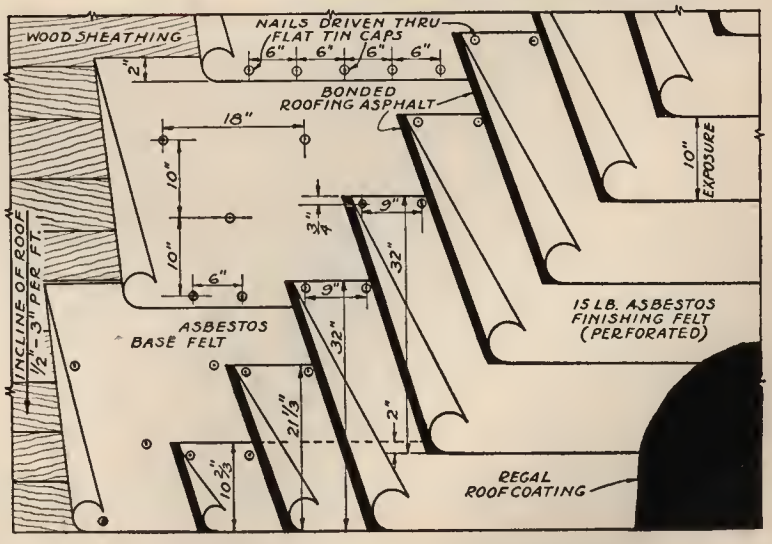
Exactly the same as the *Super A* except for the following changes: Change paragraph "First" under "Application of Roofing" to read:

First: Lay one thickness of Johns-Manville No. 30 Asphalt Saturated Rag Felt, lapping the sheets 2", and nailing at 6" centers through the laps and at 18" centers through the longitudinal center of each sheet in two lines spaced 11" apart, nails to be staggered.

Change paragraph "Second" to read:

Second: Over the base felt, lay two plies of Johns-Manville 15 lb. Asphalt Saturated Asbestos Felts, lapping each sheet 17" over the preceding one, mopping the full width under each with 30 lbs. of Johns-Manville Bonded Asphalt per ply, per square, and nailing at 9" centers adjacent to the back edge.

If a bond is required add the following: *The Approved Roofing Contractor shall furnish a Johns-Manville 20 year guarantee bond (for* Super A *Roof) or 15 year bond (for* Standard *Roof) or 10 year bond (for* Service *Roof).*



Drawing showing how a Johns-Manville Flexstone "Super A" Roof is applied over o wood deck with an incline of ½" to 3" per ft.

FOR APPLICATION OVER NON-COMBUSTIBLE DECKS
(Including Nailable Types But Excluding Steel*)

ON INCLINES ½" TO 6" PER FT.

The Flexstone SUPER A Roof

CONDENSED SPECIFICATION

Roofing: Shall be a Johns-Manville Flexstone *Super A* Roof applied in accordance with the manufacturer's specifications, and the work shall be done by a roofing contractor approved by the manufacturer.

COMPLETE SPECIFICATION

Preparation of Deck

Roof deck shall be firm, dry and clean, and properly graded to outlets. Cants shall be installed in the angles formed by the deck and vertical surfaces.

Application of Roofing

First: Coat the entire surface with Johns-Manville Concrete Primer. On gypsum, where necessary, apply two coats, allowing each to dry. If deck is of pre-cast units, omit the primer 4" each side of all joints.

Second: Lay one thickness of Johns-Manville No. 50 Asbestos Base Felt, lapping the sheets 2", mopping the full width under each with 30 lbs. of Johns-Manville Bonded Asphalt per square.

Third: If roof construction permits, nail at 6" centers through the laps and at 18" centers through the longitudinal center of each sheet in two lines spaced 10" apart, the nails to be staggered. If deck is of precast units, the asphalt shall be omitted 4" each side of all joints. If deck is poured gypsum, the asphalt shall be applied by "spot-mopping."

Fourth: Over the base felt, lay two plies of Johns-Manville 15 lb. Asphalt Saturated Asbestos Felts, lapping each sheet 17" over the preceding one, mopping the full width under each with 30 lbs. of Johns-Manville Bonded Asphalt per ply, per square, and if roof construction permits, nailing at 9" centers adjacent to the back edge. With nailing strips provided, nail each sheet of the base felt at 6" centers at each nailing strip. Nail each sheet of the finishing felt at each nailing strip ¾" from the back edge.

Fifth: Coat entire surface uniformly with Johns-Manville Regal Roof Coating (1 gal. per square).

The Flexstone STANDARD Roof

CONDENSED SPECIFICATION

Roofing: Shall be a Johns-Manville Flexstone *Standard* Roof applied in accordance with the manufacturer's specifications, and the work shall be done by a roofing contractor approved by the manufacturer.

COMPLETE SPECIFICATION

Exactly the same as the *Super A* except change paragraph "Second" under "Application of Roofing" to read:

Second: Lay one thickness of Johns-Manville No. 45 Asphalt Saturated Rag Base Felt, lapping the sheets 2", mopping the full width under each with 30 lbs. of Johns-Manville Bonded Asphalt per square.

The Flexstone SERVICE Roof

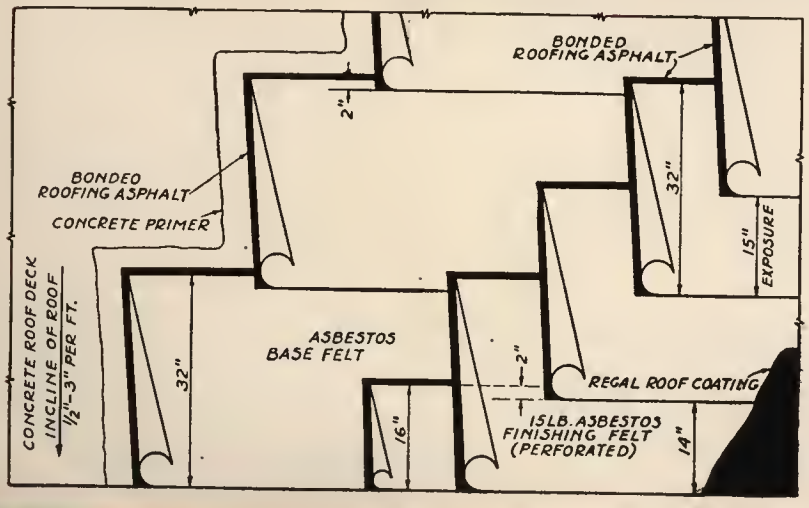
CONDENSED SPECIFICATION

Roofing: Shall be a Johns-Manville Flexstone *Service* Roof applied in accordance with the manufacturer's specifications, and the work shall be done by a roofing contractor approved by the manufacturer.

COMPLETE SPECIFICATION

Exactly the same as the *Super A* except change paragraph "Second" under "Application of Roofing" to read:

Second: Lay one thickness of Johns-Manville No. 30 Asphalt Saturated Rag Felt, lapping the sheets 2", mopping the full width under each with 30 lbs. of Johns-Manville Bonded Asphalt per square.



Drowing showing how a Johns-Monville Flexstone "Super A" Roof is applied over a non-combustible (concrete) deck with an incline of ½" to 3" per ft.

If a bond is required add the following: *The Approved Roofing Contractor shall furnish a Johns-Manville 20 year guarantee bond (for* Super A *Roof) or 15 year bond (for* Standard *Roof) or 10 year bond (for* Service *Roof).*

*On steel decks, roof insulation must first be installed.

FOR APPLICATION OVER APPROVED ROOF INSULATION

ON INCLINES ½" TO 6" PER FT.

The Flexstone SUPER A Roof

CONDENSED SPECIFICATION

Roofing: Shall be a Johns-Manville Flexstone *Super A* Roof applied in accordance with the manufacturer's specifications, and the work shall be done by a roofing contractor approved by the manufacturer.

COMPLETE SPECIFICATION

Preparation of Deck

Insulation on deck shall be properly applied to manufacturer's specifications, and be dry and clean. Cants shall be installed in the angles formed by the deck and vertical surfaces.

Application of Roofing

First: Lay four plies of Johns-Manville 15 lb. Asphalt Saturated Asbestos Felts, lapping each sheet 24½" over the preceding one and mopping the full width under each with Johns-Manville Bonded Asphalt. Use 40 lbs. asphalt per square for mopping directly onto insulation, and 30 lbs. per ply, per square for subsequent moppings.

Second: If pitch of roof exceeds 3" to the foot and roof construction permits, nail each sheet of the felt at 9" centers adjacent to the back edge. With nailing strips provided as required, nail each sheet of the felt at each nailing strip, all nails to be placed so as to be covered by not less than two plies of felt.

Third: Coat entire surface uniformly with Johns-Manville Regal Roof Coating (1 gal. per square).

The Flexstone STANDARD Roof

CONDENSED SPECIFICATION

Roofing: Shall be a Johns-Manville Flexstone *Standard* Roof applied in accordance with the manufacturer's specifications, and the work shall be done by a roofing contractor approved by the manufacturer.

COMPLETE SPECIFICATION

Exactly the same as the *Super A* except change paragraph "First" under "Application of Roofing" to read:

First: Lay three plies of Johns-Manville 15 lb. Asphalt Saturated Asbestos Felts, lapping each sheet 22" over the preceding one and mopping the full width under each with Johns-Manville Bonded Asphalt. Use 40 lbs. asphalt per square for mopping directly onto insulation, and 30 lbs. per ply, per square for subsequent moppings.

The Flexstone SERVICE Roof

CONDENSED SPECIFICATION

Roofing: Shall be a Johns-Manville Flexstone *Service* Roof applied in accordance with the manufacturer's specifications, and the work shall be done by a roofing contractor approved by the manufacturer.

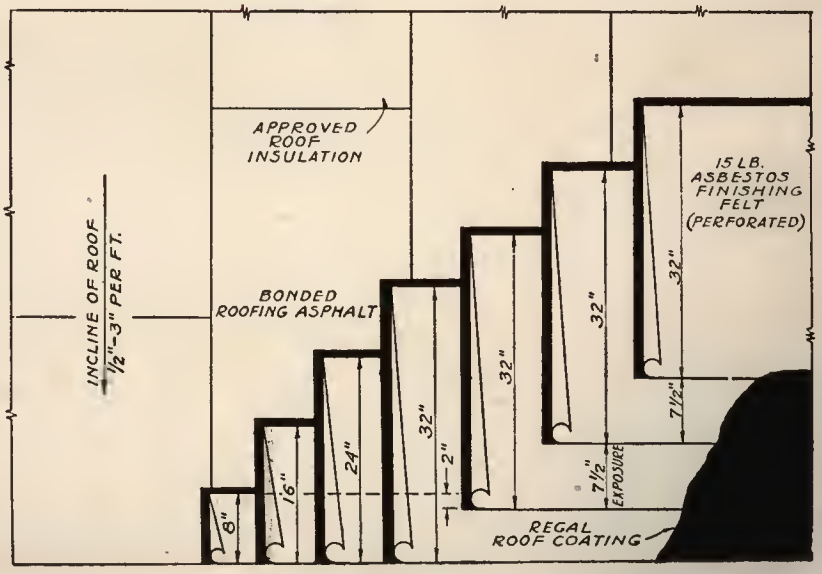
COMPLETE SPECIFICATION

Exactly the same as the *Super A* Specification except change paragraph "First" under "Application of Roofing" to read:

First: Lay one ply of Johns-Manville No. 15 Asphalt Saturated Rag Felt lapping the sheets 2", mopping the full width under each with asphalt. Over the rag felt lay two plies of Johns-Manville 15 lb. Asphalt Saturated Asbestos Felts lapping each sheet 17" over the preceding one and mopping the full width under each with Johns-Manville Bonded Asphalt. Use 40 lbs. asphalt per square for mopping directly onto insulation, and 30 lbs. per ply, per square for subsequent moppings.

If a bond is required, add the following: *The Approved Roofing Contractor shall furnish a Johns-Manville 20 year guarantee bond (for* Super A *Roof) or 15 year bond (for* Standard *Roof) or 10 year bond (for* Service *Roof).*

NOTE: Johns-Manville roof insulation may be applied to any type roof deck. For specifications see Section 5 of this manual.



Drawing showing how o Johns-Manville Flexstone "Super A" Roof is opplied over Johns-Manville or other opproved roof insulation when the deck incline is ½" to 3" per ft.

FOR APPLICATION OVER WOOD (Or Other Nailable Type) DECKS

FOR INCLINES NOT EXCEEDING 2" PER FT.

The 5 Ply Tar and Gravel Roof

CONDENSED SPECIFICATION

Roofing: Shall be a Johns-Manville 5 Ply Tar and Gravel Roof applied in accordance with the manufacturer's specifications, and all work shall be done by a roofing contractor approved by the manufacturer.

COMPLETE SPECIFICATION

Preparation of Deck

Roof deck shall be firm, dry and clean, and properly graded to outlets. Cants shall be installed in the angles formed by the deck and adjoining vertical surfaces.

Application of Roofing

First: If over wood sheathing, lay one thickness of Johns-Manville (25 lb. to 500 sq. ft.) rosin size sheathing, lapping the sheets not less than one inch.

Second: Lay two plies of Johns-Manville 15 lb. Tar Saturated Asbestos Felt* lapping each sheet 17" over the preceding one and nailing sufficiently to hold in place.

Third: Over these felts lay three additional plies of Johns-Manville 15 lb. Tar Saturated Asbestos Felt*, lapping each sheet 22" over the preceding one, mopping the full width under each with Johns-Manville Bonded Pitch and nailing at 24" centers adjacent to the back edge.

Fourth: Over the entire surface pour a uniform coating of Johns-Manville Bonded Pitch and imbed therein, while hot, not less than 400 lbs. of gravel, or 300 lbs. of slag, for each 100 square feet of surface.

General: Not less than 150 lbs. of pitch should be used for constructing each 100 square feet of completed roof. (If a bond is required, add the following.) The Approved Roofing Contractor shall furnish a Johns-Manville 20 year guarantee bond.

The 4 Ply Tar and Gravel Roof

CONDENSED SPECIFICATION

Roofing: Shall be a Johns-Manville 4 Ply Tar and Gravel Roof applied in accordance with the manufacturer's specifications, and all work shall be done by a roofing contractor approved by the manufacturer.

COMPLETE SPECIFICATION

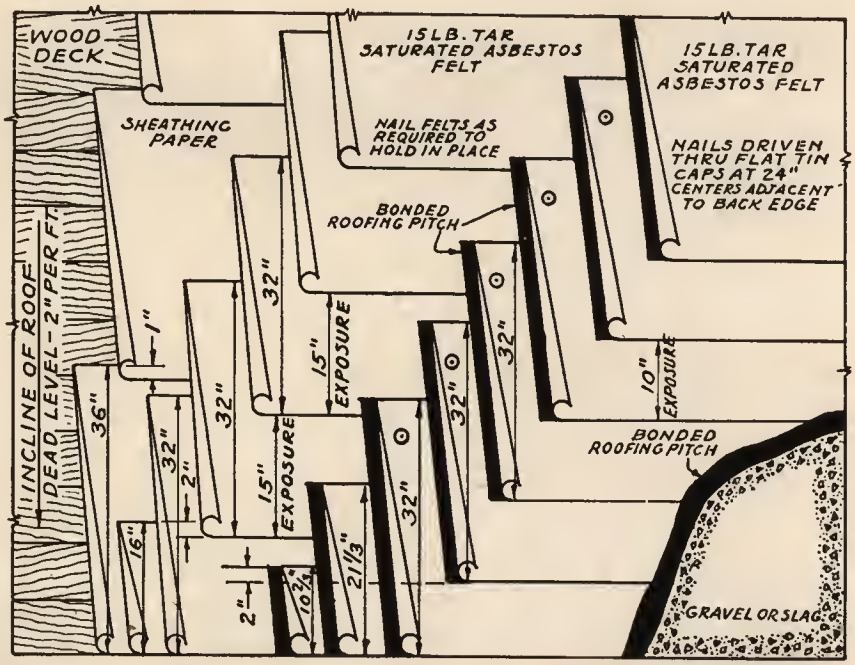
Exactly the same as the 5 Ply Tar and Gravel Roof except for the following changes:

Paragraph "Third" under "Application of Roofing" should read:

Third: Over these felts, lay two additional plies of Johns-Manville 15 lb. Tar Saturated Asbestos Felt,* lapping each sheet 17" over the preceding one, mopping the full width under each with Johns-Manville Bonded Pitch and nailing at 24" centers adjacent to the back edge.

Under General: Change "150 lbs. of pitch" to "125 lbs. of pitch." Change "20 year guarantee bond" to "15 year guarantee bond".

**While the use of asbestos felts is preferable, Johns-Manville 15 lb. Tar Saturated Rag Felt may be used instead of Johns-Manville 15 lb. Asbestos Felt.*



Drawing showing how a Johns-Manville 5-Ply Tar and Gravel Roof is applied over a wood or other nailable type deck.

FOR APPLICATION OVER NON-COMBUSTIBLE (Excluding Nailable Type and Steel*) DECKS OR OVER APPROVED ROOF INSULATION

FOR INCLINES NOT EXCEEDING 2" PER FT.

The 4 Ply Tar and Gravel Roof

CONDENSED SPECIFICATION

Roofing: Shall be a Johns-Manville 4 Ply Tar and Gravel Roof applied in accordance with the manufacturer's specifications, and all work shall be done by a roofing contractor approved by the manufacturer.

COMPLETE SPECIFICATION

Preparation of Deck

Roof deck shall be firm, dry and clean, and properly graded to outlets. Cants shall be installed in the angles formed by the deck and adjoining vertical surfaces. If over roof insulation, insulation shall be properly applied to manufacturer's specifications, and be dry and clean.

Application of Roofing

First: Lay four plies of Johns-Manville 15 lb. Tar Saturated Asbestos Felt,** lapping each sheet 24½" over the preceding one, mopping the full width under each with Johns-Manville Bonded Pitch. If roof construction is of precast units, the pitch applied to the roof surface shall be omitted for a width of 4" each side of all joints between the units. If incline exceeds 1" per ft., the felt shall be nailed adjacent to upper edge so that all nails shall be covered by not less than three layers of felt.

Second: Over the entire surface, pour a uniform coating of Johns-Manville Bonded Pitch, and imbed therein, while hot, not less than 400 lbs. of gravel, or 300 lbs. of slag for each 100 ft. of roof surface.

General: Not less than 200 lbs. of pitch should be used for constructing each 100 square feet of completed roof. (If a bond is required, add the following.) The Approved Roofing Contractor shall furnish a Johns-Manville 20 year guarantee bond.

The 3 Ply Tar and Gravel Roof

CONDENSED SPECIFICATION

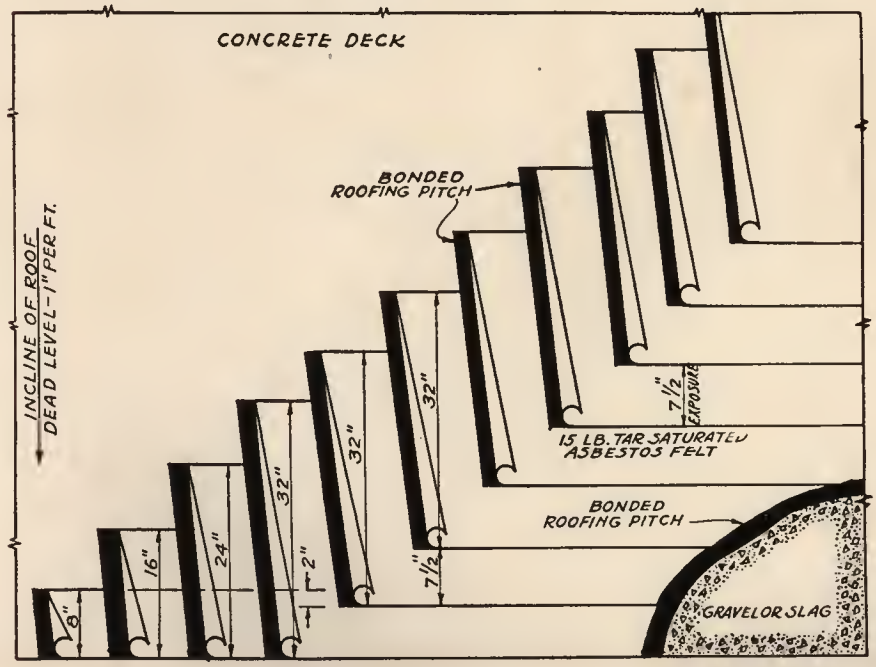
Roofing: Shall be a Johns-Manville 3 Ply Tar and Gravel Roof applied in accordance with the manufacturer's specifications, and all work shall be done by a roofing contractor approved by the manufacturer.

COMPLETE SPECIFICATION

Exactly the same as the 4 Ply Tar and Gravel Roof except for the following changes: Paragraph "First" under "Application of Roofing" should read:

First: Lay three plies of Johns-Manville 15 lb. Tar Saturated Asbestos Felt,** lapping each sheet 22" over the preceding one, mopping the full width under each with Johns-Manville Bonded Pitch. If roof construction is of precast units, the pitch applied to the roof surface shall be omitted for a width of 4" each side of all joints between the units. If incline exceeds 1" per ft. the felt shall be nailed adjacent to upper edge so that all nails shall be covered by not less than two layers of felt.

Under General: Change "200 lbs. of pitch" to "175 lbs. of pitch". Change "20 year guarantee bond" to "15 year guarantee bond".



Drawing showing how a Johns-Manville 4-Ply Tar and Gravel Roof is applied over a non-combustible (except steel) deck or over approved roof insulation on deck inclines not exceeding 1" per ft.

**On steel decks, roof insulation must be installed.*

***While the use of asbestos felts is preferable, Johns-Manville 15 lb. Tar Saturated Rag Felt may be used instead of Johns-Manville 15 lb. Asbestos Felt.*

WITH A COLORED MINERAL SURFACE

Many times it is desirable, for the sake of appearance, to have color in a built-up roof. In the following Specifications, Johns-Manville Split Sheet Slatekote Roofing is specified for the finishing felts. Since Split Sheet Slatekote is surfaced with red, green or black mineral granules, it presents an attractive, colorful appearance. The mineral granules also serve to protect the felts against the drying out action of the sun.

FOR APPLICATION OVER WOOD DECKS

ON INCLINES 3" to 6" PER FT.

The Split Sheet Slatekote Built-Up Roof

CONDENSED SPECIFICATION

Roofing: Shall be a Johns-Manville Split Sheet Slatekote Roof applied in accordance with the manufacturer's specifications, and the work shall be done by a roofing contractor approved by the manufacturer.

COMPLETE SPECIFICATION

Preparation of Deck

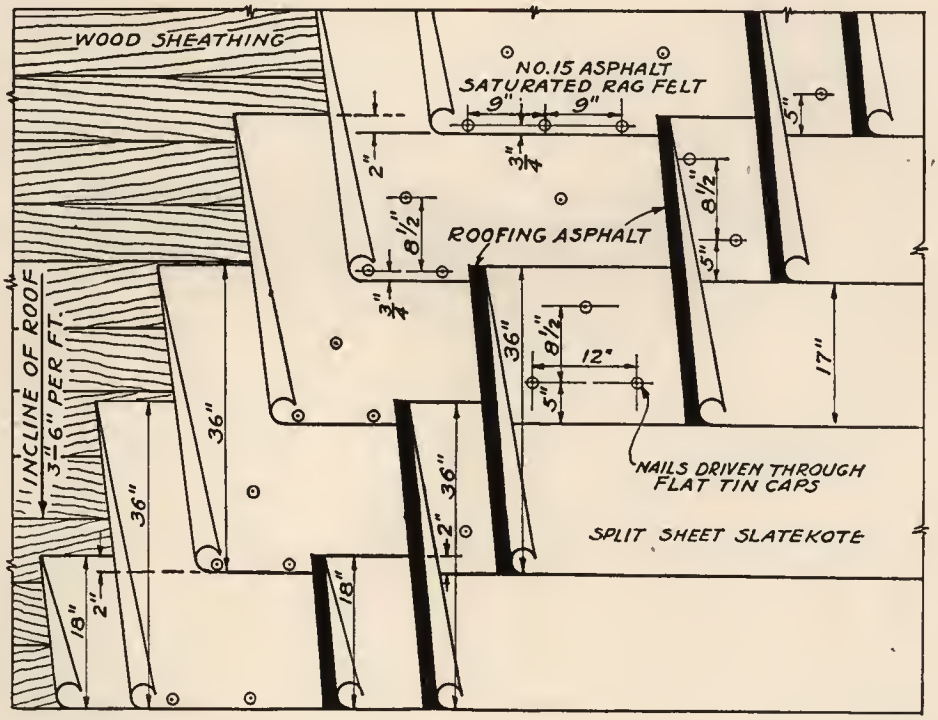
Roof deck shall be firm, dry and clean, and properly graded to outlets. Cants shall be installed in the angles formed by the deck and adjoining vertical surfaces.

Application of Roofing

First: Lay two plies of the No. 15 felt, lapping each sheet 19" over the preceding one and nailing at 9" centers adjacent to exposed edge and at 9" centers, 8½" therefrom, the nails in each row to be in staggered relation.

Second: Over these felts lay the Slatekote, lapping each sheet 19" over the selvaged edge of the preceding one, mopping the full width under each with the asphalt and nailing through the selvaged portion with two rows of nails 8½" apart, the first row to be 5" from the edge of the slate surfacing, nails to be spaced at 12" centers, the nails in each row to be in staggered relation. Lap the ends of the sheets 6". Scrape the slate surfacing from the overlapped portions of the underlying sheet, nail at 6" centers, 2" from the edge, and mop the full width of the lap with the asphalt.

If a bond is required add the following: *The Approved Roofing Contractor shall furnish a Johns-Manville 10-year guarantee bond.*



Drawing showing how a Johns-Manville Split Sheet Slatekote Built-Up Roof is applied over a wood deck.

FOR APPLICATION OVER NON-COMBUSTIBLE DECKS (Including Nailable Types But Excluding Steel*)

ON INCLINES 3" to 6" PER FT.

The Split Sheet Slatekote Built-Up Roof

CONDENSED SPECIFICATION

Roofing: Shall be a Johns-Manville Split Sheet Slatekote Roof applied in accordance with the manufacturer's specifications, and the work shall be done by a roofing contractor approved by the manufacturer.

COMPLETE SPECIFICATION

Preparation of Deck

Roof deck shall be firm, dry and clean, and properly graded to outlets. Cants shall be installed in the angles formed by the deck and adjoining vertical surfaces.

Application of Roofing

First: Coat all surfaces which are to receive the roofing with the primer and allow to dry. If deck is of precast units, the primer shall be omitted 4" each side of all joints.

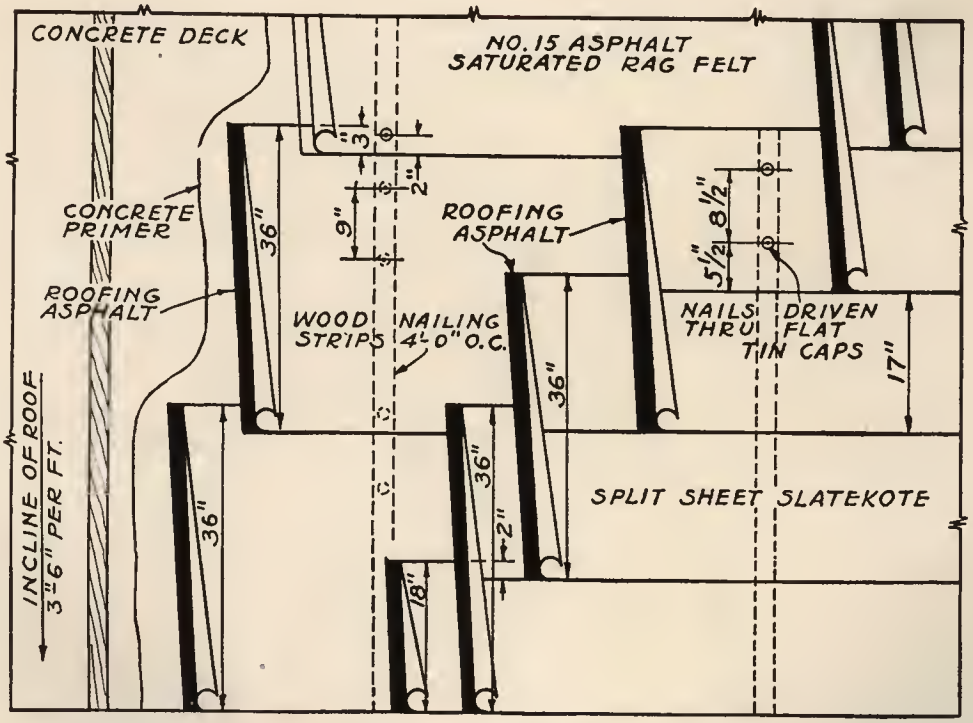
Second: Lay one ply of the No. 15 felt, lapping the sheets 3", mopping the full width under each with the asphalt, and, if roof construction permits, nailing at 12" centers through the laps. If deck is of precast units, the asphalt shall be omitted 4" each side of all joints. If poured-gypsum deck, the asphalt shall be applied by "spot-mopping."

Third: Over the No. 15 felt lay two plies of the Slatekote, lapping each sheet 19" over the unsurfaced portion of the preceding one, mopping the full width under each with asphalt, and, if roof construction permits, nailing through the unsurfaced portion in two lines spaced 8½" apart, the first line to be 5" from the edge of the slate surfacing, the nails to be spaced at 12" centers and staggered. Lap the ends of the sheets 6". Scrape the slate surfacing from the overlapped portion of the underlying sheet, nail at 6" centers, 2" from the edge, and mop the full width of the lap with asphalt.

With nailing strips provided as required, nail each sheet of the No. 15 felt at 9" centers at each nailing strip. Nail each sheet of the Slatekote through the unsurfaced portion with two nails at each nailing strip, spaced at 8½" centers, the first to be 5" from the edge of the slate surfacing.

If a bond is required add the following: *The Approved Roofing Contractor shall furnish a Johns-Manville 10-year guarantee bond.*

**On steel decks, roof insulation must first be installed.*



Drowing showing how a Johns-Manville Split Sheet Slotekote Built-Up Roof is applied over o non-combustible deck.

FOR APPLICATION OVER CONCRETE DECKS TO BE OVERLAID WITH PROMENADE SURFACING

ON INCLINES NOT EXCEEDING 1" PER FT.

CONDENSED SPECIFICATION

Roofing: Shall be a Johns-Manville Built-Up Roof applied in accordance with the manufacturer's specifications, and the work shall be done by a roofing contractor approved by the manufacturer.

COMPLETE SPECIFICATION

Preparation of Deck

Roof deck shall be firm, dry and clean and properly graded to outlets.

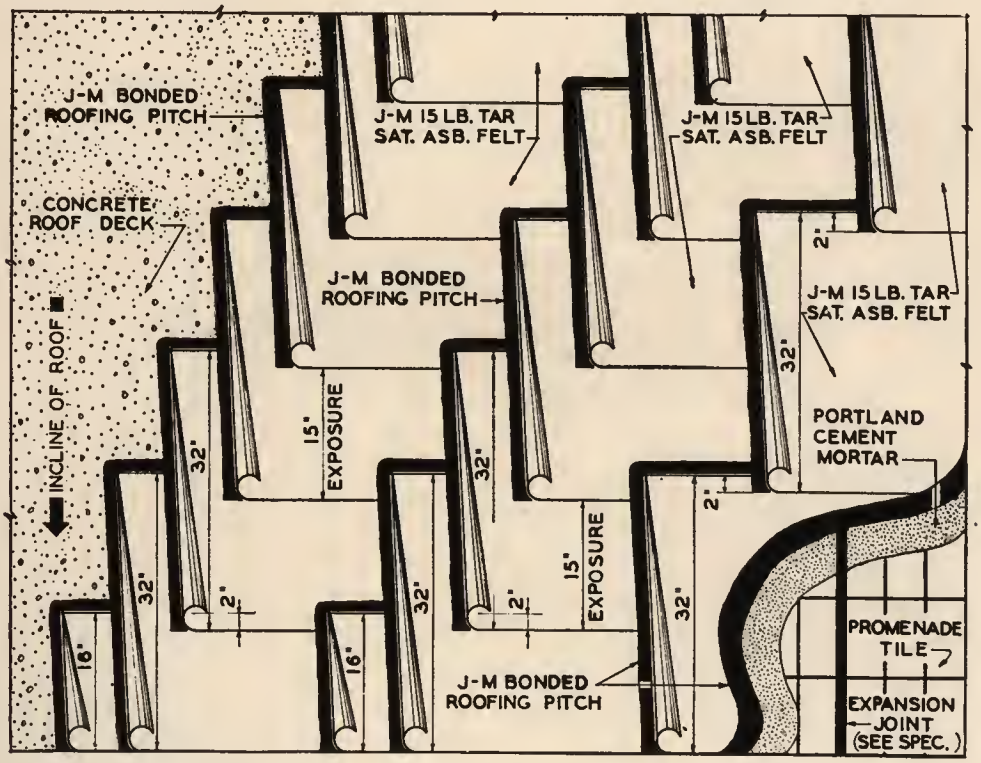
Application of Roofing

First: Lay two plies of Johns-Manville 15 lb. Tar Saturated Asbestos Felt, lapping each sheet 17" over the preceding one, mopping the full width under each with Johns-Manville Bonded Pitch. Then apply two additional layers of the felt, lapping each sheet 17" over the preceding one, mopping the full width under each with the pitch.

Immediately preceding the laying of the promenade tile or other surfacing material, thoroughly clean the roof surface and lay one additional ply of Johns-Manville Tar Saturated Asbestos Felt, lapping each sheet 2" over the preceding one, mopping the full width under each with Johns-Manville Bonded Pitch. Then coat the entire surface with the pitch. No more of the roof surface shall be covered with the last ply of felt and pitch than can be immediately covered with the surfacing material.

Second: Lay the promenade surfacing in a bedding of Portland cement mortar not less than 1" thick, with expansion joints in both directions on not greater than 20 ft. centers, and also at all walls, curbs and other vertical surfaces. Expansion joints shall be not less than 1" wide and shall extend from the top of the surfacing through the mortar bed to the roofing, filled with Johns-Manville Expansion Joint Filler. All joints between the surfacing, other than expansion joints, shall be grouted with Portland cement mortar.

General: All flashing shall be of sheet metal.



Drawing showing how a Johns-Manville Built-Up Roof is applied over a concrete deck which is to be overlaid with a promenade surfacing.

The Johns-Manville Asbestile* System of Flashing . . . Insures Proper Treatment of All Critical Areas

More than any other place on the roof a leak is apt to develop at the junction formed by the roof deck and a vertical surface. To give the required degree of protection at such points, Johns-Manville has developed the Asbestile System of Flashing. Asbestile is a heavy-bodied plastic cement designed to give thorough water tightness where used in conjunction with asbestos flashing felts. As Asbestile sets, it becomes hard and forms an integral part of the wall itself. Johns-Manville offers two methods of Asbestile Flashing:

1. The Johns-Manville *Thru-Wall* Asbestile Flashing System
2. The Johns-Manville *Standard* Asbestile Flashing System

THE THRU-WALL ASBESTILE FLASHING SYSTEM

THIS IS OUR NUMBER ONE RECOMMENDATION AND SHOULD BE USED WHEREVER POSSIBLE

CONDENSED SPECIFICATION

All flashings shall be applied in accordance with the Johns-Manville Thru-Wall Asbestile Flashing System, and shall be installed by a contractor approved by the manufacturer. Cap flashing shall be extended (architect to specify "through the wall" or "up and over the parapet wall").

COMPLETE SPECIFICATION

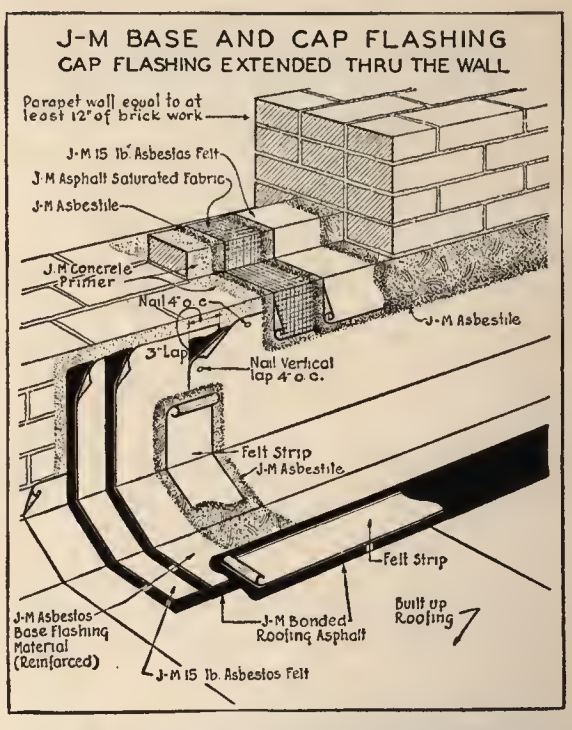
Base Flashing

First: Strike a chalk line 3" above top of base flashing and prime the wall to this line. Allow the primer to dry.

Second: Lay one thickness of the Johns-Manville 15 lb. Asphalt Saturated Asbestos Felt to extend not less than 6" high on the vertical surface to be flashed, and not less than 4" on the roof, lapping the sheets 3", mopping the full width under each with Johns-Manville Bonded Asphalt.

Third: Johns-Manville Reinforced Asbestos Base Flashing shall then be mopped on the fabric side with asphalt and pressed immediately into place directly over and entirely covering the 15 lb. asbestos felt. Nail the top edge into brick joints or wood nailing strips, at not to exceed 4" centers horizontally. The base flashing shall be applied to extend not less than 6" high on the vertical surfaces and not less than 4" on the roof. Such dimensions shall be measured from the top and bottom edges, respectively, of cants, coves or fillets.

The ends of the sheets shall be lapped not less than 3", nailing not to exceeed 4" centers vertically, cemented and covered with ⅛" course of Johns-Manville Asbestile with a 4" wide strip of the Johns-Manville 15 lb. Asbestos Felt imbedded therein and finished with a second course of Asbestile troweled on. The edges of the base flashing on roof shall be covered with a 4" wide Johns-Manville 15 lb. Asbestos Felt strip, imbedded in and coated over with asphalt but shall not be nailed to the deck.



Drawing showing haw Jahns-Manville Thru-Wall Asbestile System of Flashing (base and cap) is applied when extended through the wall.

*Reg. U. S. Pat. Off.

Thru-Wall Asbestile Flashing System (Cont.)

Cap Flashing Extending Through the Wall (For New Work)

Mop the top of the wall with Johns-Manville Bonded Asphalt or trowel a ⅛" thickness of Johns-Manville Asbestile to within 2" of outside face of wall and imbed one ply of Johns-Manville Waterproofing Fabric. Provide sufficient fabric so that same will overhang wall and later overlap base flashing at least 4". Then, over the fabric, apply another mopping of asphalt or troweling of Asbestile, into which imbed one ply of Johns-Manville 15 lb. Asbestos Felt. The felt shall be of sufficient width to cover top of wall to within 2" of outside face and to overhang inside face of wall to later overlap base flashing at least 4". Over this felt on top of wall, apply a finished mopping of asphalt or a ⅛" troweling of Asbestile.

After the parapet is completed, the overhanging fabric and felt shall be brought down over the base flashing in the following manner:

First, coat vertical wall with ⅛" troweling of Asbestile to extend down over base flashing at least 4". Then imbed the overhanging fabric into this troweling of Asbestile. Apply over the fabric a second troweling of Asbestile, into which imbed the overhanging felt. Trowel over the felt a final coating of Asbestile, bringing it to a feather edge over the base flashing and to a straight line at the top edge of the projecting felt.

The face of base and cap flashing shall be coated with Johns-Manville Regal* Roof Coating to extend from the roof surface to the top edge of the projecting felt.

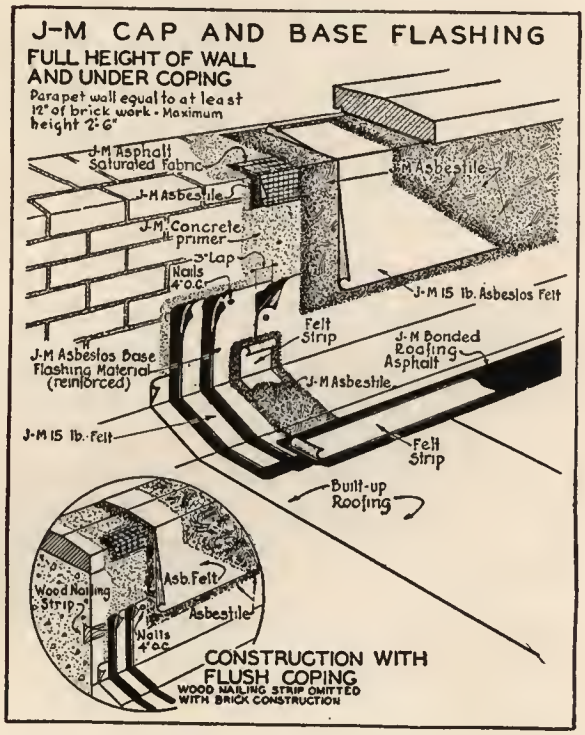
Cap Flashing Extending Up and Over Masonry Parapet Wall (For Existing Work)

At the inner top corner of parapet, imbed in Johns-Manville Asbestile an 8" wide strip of Johns-Manville Waterproofing Fabric so that same extends 4" on top of the wall and 4" on face of wall.

A layer of Asbestile, ⅛" thick, shall then be troweled over the inside face of the wall, extending down to a point 4" below the top edge of base flashing and continued over the top of wall to within 2" of outside face. A ply of Johns-Manville 15 lb. Asbestos Felt shall be imbedded therein, with sheets lapped 3" and sealed with a layer of Asbestile.

Over this felt, apply a second ⅛" layer of Asbestile, troweled over and finished to a feather edge and to a straight line at lower edge, extending below top of base flashing at least 4".

The face of the base and cap flashing shall be coated with Johns-Manville Regal Roof Coating to extend from the roof surface to the under side of the coping.



Drawing showing how Johns-Manville Thru-Wall Asbestile System of Flashing (base and cap) is applied when extended up the parapet and over or under the coping.

*Reg. U. S. Pat. Off.

THE STANDARD ASBESTILE FLASHING SYSTEM

THIS FLASHING METHOD IS SECOND ONLY TO THE THRU-WALL SYSTEM AND CAN BE USED FOR BOTH NEW AND EXISTING WORK. IT IS DESIGNED FOR USE WHERE CONDITIONS DO NOT WARRANT THE APPLICATION OF THE THRU-WALL FLASHING SYSTEM

CONDENSED SPECIFICATION

All flashings shall be applied in accordance with the Johns-Manville Standard Asbestile Flashing System and shall be installed by a contractor approved by the manufacturer.

COMPLETE SPECIFICATION

Base Flashing

First: Strike a chalk line 3" above top of base flashing and prime the wall to this line. Allow the primer to dry.

The surface of the roof and adjoining surfaces which are to receive the base flashing shall be mopped with Johns-Manville Bonded Asphalt which is not to extend above top of base flashing.

Second: Johns-Manville Reinforced Asbestos Base Flashing shall then be mopped on the fabric side with asphalt and pressed immediately into place, nailing the top edge into brick joints or wood nailing strips, at not to exceed 4" centers horizontally. The base flashing shall be applied to extend not less than 6" high on the vertical surfaces and not less than 4" on the roof. Such dimensions shall be measured from the top and bottom edges, respectively, of cants, coves or fillets.

The ends of the sheets shall be lapped not less than 3", nailing not to exceed 4" centers vertically, cemented and covered with ⅛" Course of Johns-Manville Asbestile with a 4" wide strip of Johns-Manville 15 lb. Perforated Asbestos Felt imbedded therein and finished with a second course of Asbestile troweled on. The edge of the base flashing on roof shall be covered with a 4" wide Johns-Manville 15 lb. Perforated Asbestos Felt strip, imbedded in and coated over with asphalt but shall not be nailed to the deck.

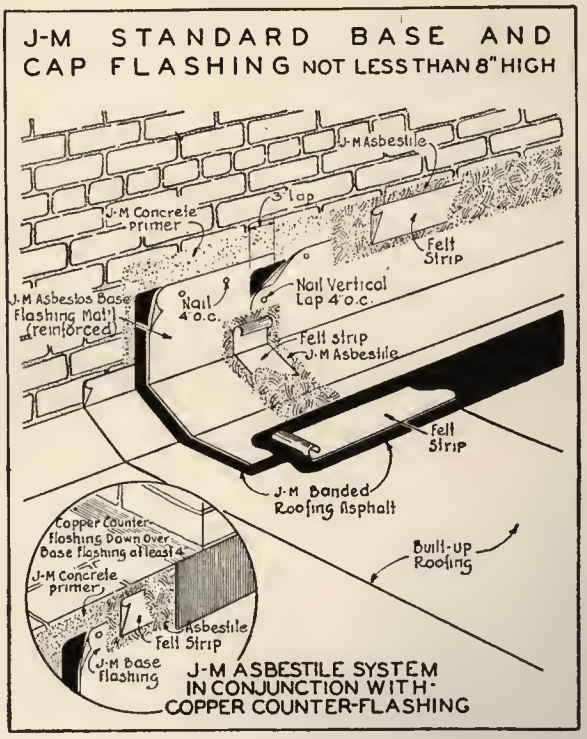
Cap Flashing

Combined cap and base flashing should be not less than 8" high.

Trowel on a layer of Johns-Manville Asbestile 5" wide and ⅛" thick, to cover completely the nails on top of the Johns-Manville Base Flashing. Into this imbed a 4" wide strip of Johns-Manville 15 lb. Asbestos Felt, over which apply another ⅛" troweling of Asbestile.

Bring the Asbestile to a feather edge and finish it neatly in a straight line.

The face of the flashing shall be coated with Johns-Manville Regal Roof Coating to extend from the roof surface to the top of the cap flashing.



Drawing showing how Johns-Manville Standard Asbestile System of Flashing (base and cap) is applied.

Johns-Manville Roof Insulation Pays for Itself

TODAY, these five advantages of roof insulation are well recognized by architects and engineers.

1—Roof insulation retards the passage of heat through the roof; this saves fuel and cuts air-conditioning costs.

2—Insulation helps insure comfortable, uniform working conditions and hence increases production.

3—Insulation helps protect the roof deck against deterioration and rot which may eventually result in the costly necessity of building a completely new roof deck.

4—An insulated roof prevents condensation and roof drip which may ruin finished ceilings and walls, and even damage equipment and stocks of merchandise.

5—Insulation provides protection to the roofing felts. It acts as a "cushion" separating the roofing from the deck and therefore helps prevent the felts from cracking due to the cycles of alternate expansion and contraction in the deck.

It can be readily perceived that these various savings in operating costs, increased efficiency, protection of the building structure and of the roofing felts, will in a short time offset the initial cost of the roof insulation and then continue to pay substantial dividends during the entire life of the roof.

Johns-Manville Furnishes Two Types of Roofing Insulation

JOHNS-MANVILLE ROCK CORK* INSULATION which is basically a mineral insulation that cannot rot or decay. It is exceptionally efficient and moisture resistant.

JOHNS-MANVILLE ROOFINSUL*, a rigid and structurally strong insulation, made of saturated pine fibre, interlaced, felted and rolled into boards of practical size. It provides a light weight, efficient, low cost roof insulation for all types of roof decks.

Johns-Manville specifications for the application of roof insulation have been carefully drawn to insure that it will retain its initial efficiency throughout the lifetime of the roof. Specifications call for the insulation to be sealed below and above from moisture that would cause loss of efficiency.

*Reg. U. S. Pat. Off.

Here Johns-Monville Roofinsul is Being Applied.

Johns-Manville Rock Cork Cannot Rot or Decoy.

Johns-Manville Roofinsul-is Rigid and Structurally Strang.

Note: In these specifications when Johns-Manville Flexstone roofs are specified over the insulation, use J-M Asphalt Saturated Asbestos Felts and J-M Bonded Asphalt (the cementing agent) *under* the insulation.

When Johns-Manville Tar and Gravel Roofs are specified over the insulation, use J-M Tar Saturated Asbestos Felts and Bonded Pitch (the cementing agent) *under* the insulation, except over steel decks. Here Asphalt Saturated Asbestos Felts and Bonded Asphalt are used *under* the insulation even though the finished roof is to be Tar and Gravel.

FOR APPLICATION OF JOHNS-MANVILLE ROOF INSULATION OVER WOOD DECKS

ON INCLINES UP TO 6" PER FT.

CONDENSED SPECIFICATION

Insulation shall be Johns-Manville Roof Insulation (state type and thickness), applied in accordance with the manufacturer's specifications.

COMPLETE SPECIFICATION

Preparation of Deck

Roof deck shall be firm, dry and clean, and properly graded to outlets.

Application of Roof Insulation

First: A wood strip of the same thickness as the insulation by approximately 4" wide shall be provided, secured to the roof deck adjoining all eaves, to act as a stop for the insulation.

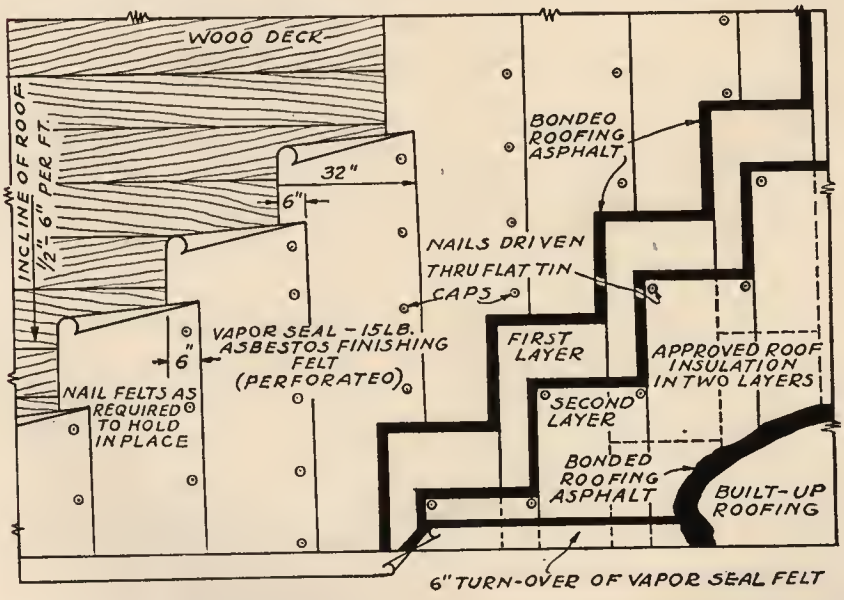
Second: Under insulation lay one ply of Johns-Manville 15 lb. Felt, lapping each sheet 6" over the preceding one and nailing sufficiently to hold in place. If a tar and gravel roof is to be applied over the insulation on a wood deck, under the insulation lay one thickness of Johns-Manville (25 lbs. to 500 sq. ft.) rosin sized sheathing. Then lay two plies of Johns-Manville 15 lb. Tar Saturated Asbestos Felt, lapping each sheet 17" over the preceding one, nailing sufficiently to hold in place. The felt shall be turned up on, but not cemented to, all vertical surfaces to a height 6" greater than the thickness of the insulation, and shall overhang all roof edges a similar amount.

Third: Lay Johns-Manville Roof Insulation with the long-dimension joints continuous and at right angles to the sheathing, and with short-dimension joints broken, mopping the full width under each sheet. The edges of the sheets at the joints shall be thoroughly sealed. Nail each sheet of the insulation at 24" centers adjacent to the longitudinal edges and staggered through the longitudinal center.

If to be applied in more than one layer, succeeding layers shall be applied in the same manner as the first layer, the sheets of each layer to break joints with those of the preceding layer, with all nailing done through the top layer.

The upturned felt at vertical surfaces and roof edges shall be turned down and mopped solidly to the insulation.

General: Insulation shall not be left exposed to the weather. No more insulation shall be laid than can be completely covered with the roofing felts on the same day. At the end of the day's work, roofing felts shall be turned down over the exposed edges of the insulation and mopped solidly.



Drawing showing how Johns-Manville Roof Insulation is applied over a wood deck when a Flexstone roof is to be applied.

FOR APPLICATION OF JOHNS-MANVILLE ROOF INSULATION OVER NON-COMBUSTIBLE DECKS (Including Nailable Types But Excluding Steel)

ON INCLINES UP TO 6" PER FT.

CONDENSED SPECIFICATION

Insulation shall be Johns-Manville Roof Insulation (state type and thickness), applied in accordance with the manufacturer's specifications.

COMPLETE SPECIFICATION

Preparation of Deck

Roof deck shall be firm, dry and clean, and properly graded to outlets.

Application of Roof Insulation

First: A wood strip of the same thickness as the insulation by approximately 4" wide shall be provided, secured to the roof deck adjoining all eaves, to act as a stop for the insulation.

If incline exceeds 3" per foot, roof deck shall permit nailing or wood nailing strips shall be provided.

If asphalt is used as cementing agent, coat the entire surface with Johns-Manville Concrete Primer. On gypsum, where necessary, apply two coats, allowing each to dry. If deck is of precast units, the primer shall be omitted 4" each side of all joints.

Second: Under insulation lay one ply of Johns-Manville 15 lb. Felt, lapping each sheet 6" over the preceding one, mopping the full width under each.

The felt applied under the insulation shall be turned up on, but not cemented to, all vertical surfaces to a height 6" greater than the thickness of the insulation and shall overhang all roof edges a similar amount.

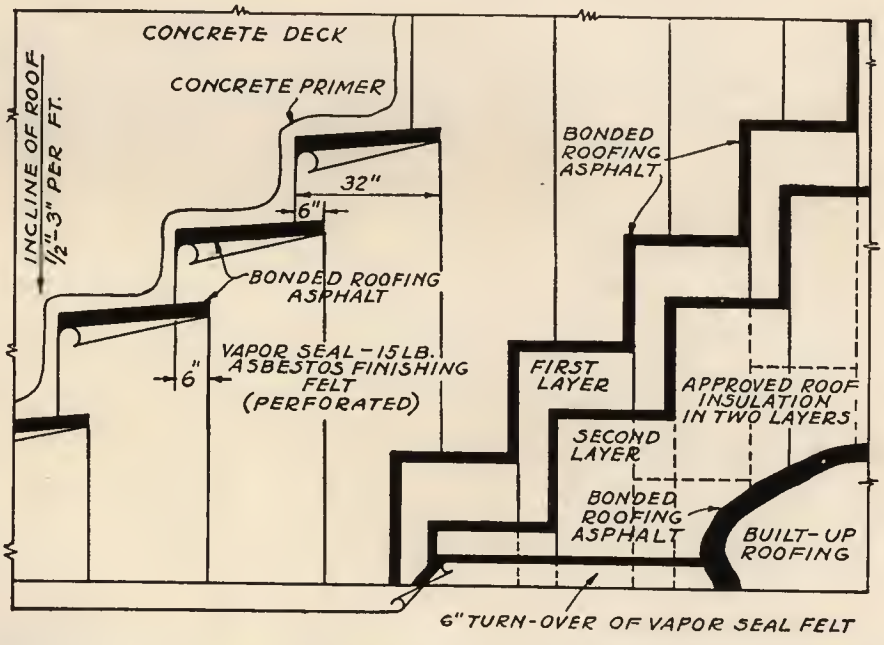
If roof construction is of precast units, the cement applied to the roof surface shall be omitted for a width of 4" each side of all joints between the units. If poured-gypsum deck, the cementing agent shall be applied by "spot-mopping."

Third: Mop solid Johns-Manville Roof Insulation with all end joints broken. The edges of the sheets at the joints shall be thoroughly sealed. If roof construction permits, nail each sheet of the insulation at 24" centers adjacent to the longitudinal edges and staggered through the longitudinal center. With wood nailing strips, provided as required, nail each sheet of the insulation at each nailing strip at 12" centers.

If to be applied in more than one layer, succeeding layers shall be applied in the same manner as the first layer, the sheets of each layer to break joints with those of the preceding layer, with all nailing done through the top layer.

The upturned felt at vertical surfaces and roof edges shall be turned down and mopped solidly to the insulation.

General: Insulation shall not be left exposed to the weather. No more insulation shall be laid than can be completely covered with the roofing felts on the same day. At the end of the day's work, roofing felts shall be turned down over the exposed edges of the insulation and mopped solidly.



Drawing showing how Johns-Manville Roof Insulation is applied over a non-combustible deck (including nailable types but excluding steel) when a Flexstone roof is to be applied on deck inclines of ½" to 3" per ft.

FOR APPLICATION OF JOHNS-MANVILLE ROOF INSULATION OVER STEEL DECKS

ON INCLINES UP TO 6" PER FT.

CONDENSED SPECIFICATION

Insulation shall be Johns-Manville Roof Insulation (state type and thickness), applied in accordance with the manufacturer's specifications.

COMPLETE SPECIFICATION

Preparation of Deck

Roof deck shall be firm, dry and clean, and properly graded to outlets. If steel deck has not been shop primecoated or if coating is incomplete or damaged, the entire deck or uncoated areas shall be painted with Johns-Manville Concrete Primer and allowed to dry.

Application of Roof Insulation

First: A wood strip of the same thickness as the insulation by approximately 4" wide shall be provided, secured to the roof deck adjoining all eaves, to act as a stop for the insulation.

Second: Under insulation lay one ply of Johns-Manville 15 lb. Felt, lapping each sheet 6" over the preceding one, mopping the full width under each. The felt applied under the insulation shall be turned up on, but not cemented to, all vertical surfaces to a height 6" greater than the thickness of the insulation and shall overhang all roof edges a similar amount.

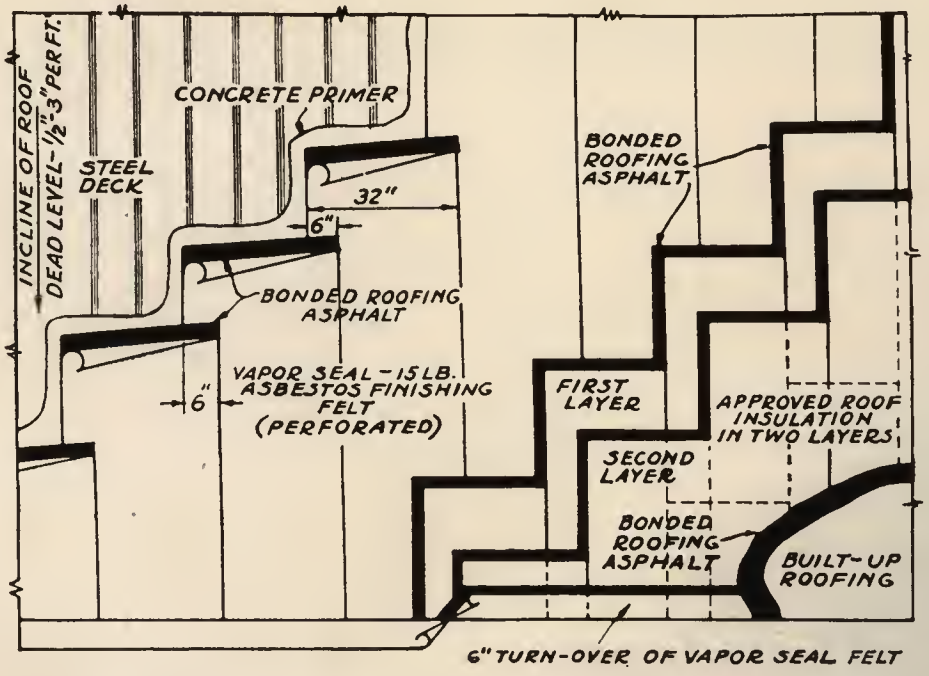
If use of felt is impractical, apply hot asphalt to underside of insulation before laying.

Third: Mop solid Johns-Manville Roof Insulation with all end joints broken, using expanding nails, self tapping screws or other approved fastening devices. The edges of the sheets at the joints shall be thoroughly sealed. If incline exceeds 3" per foot, secure each sheet of the insulation with not less than five fasteners per sheet.

If to be applied in more than one layer, succeeding layers shall be applied in the same manner as the first layer, the sheets of each layer to break joints with those of the preceding layer, with all fastening done through the top layer.

The upturned felt at vertical surfaces and roof edges shall be turned down and mopped solidly to the insulation.

General: Insulation shall not be left exposed to the weather. No more insulation shall be laid than can be completely covered with the roofing felts on the same day. At the end of the day's work, roofing felts shall be turned down over the exposed edges of the insulation and mopped solidly.



Drawing showing how Johns-Manville Roof Insulation is applied over a steel deck, when a Flexstone roof is to be applied on deck inclines of ½" to 3" per ft.

Corrugated Transite* Roofing and Siding

Corrugated Transite Asbestos Roofing and Siding is made of asbestos fibres and cement united under hydraulic pressure into dense, unlaminated, monolithic sheets of great strength and rigidity. It is designed for application directly over purlins or girts of skeleton steel or wood frame construction. It will not burn or rust, rot, split, crack or curl. In color, it is an attractive light gray. It is weatherproof, highly resistant to corrosion and requires no painting to preserve it.

It does not become warped, distorted or weakened in service; in fact, it actually strengthens and toughens with age. It offers high resistance to acid fumes and severe weather conditions and finds a wide use in industrial plants, as well as in hospitals, libraries, office buildings, railway stations, machine shops, garages and residences. Its easy workability and the speed with which the large units can be erected are but two of its many advantages.

Transite can be readily drilled or sawed and is secured with bolts, screws, clips, etc., designed for that purpose. Special shapes of the same material for use as ridge roll, corner roll, louvres, etc., are available.

Sizes—Sheets are furnished 42 in. wide in lengths from ½ ft. through 11 ft. in ½-ft. increments. They are approximately $\frac{7}{16}$ in. thick at ridges and valleys of corrugations and approximately $\frac{5}{16}$ in. thick at the slope. The corrugations are 4.2 in. The over-all thickness of the sheets is 1½ in. Approximate weight is 4.1 lb. per sq. ft.

Application—See details on following page. Transite may be applied over roof purlins spaced on not greater than 54-in. centers (minimum roof pitch 3 in. per foot), and on siding girts not over 66 in. center to center. Sheets are laid with a 6-in. end lap and a one-corrugation side lap, providing an exposure of 37.8 in. Write for complete details.

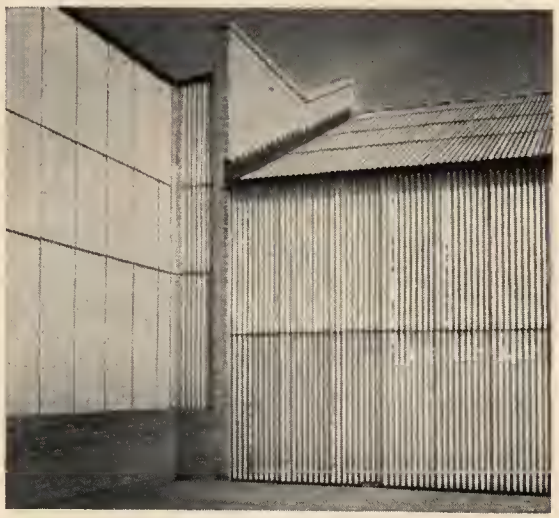
*Reg. U. S. Pat. Off.

Flat Transite* Sheets

Flat Transite has the same characteristics as Corrugated Transite, and is exactly the same material except for form.

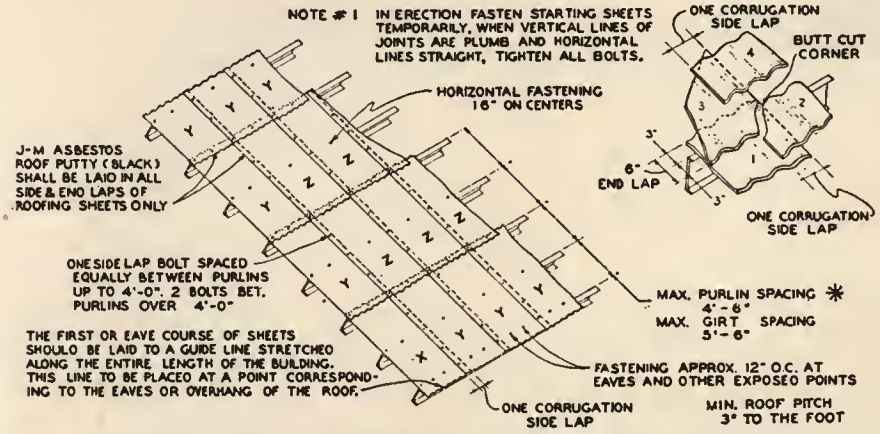
Flat Transite weighs approximately 124 lbs. per cu. ft. Sheets are furnished in sizes 36 x 48, 42 x 48, 48 x 48, 42 x 96 and 48 x 96 in. from ¼ in. to 2 in. thick.

Main building of a large aircraft plant with walls of Corrugated Transite and a facia of Flat Transite.

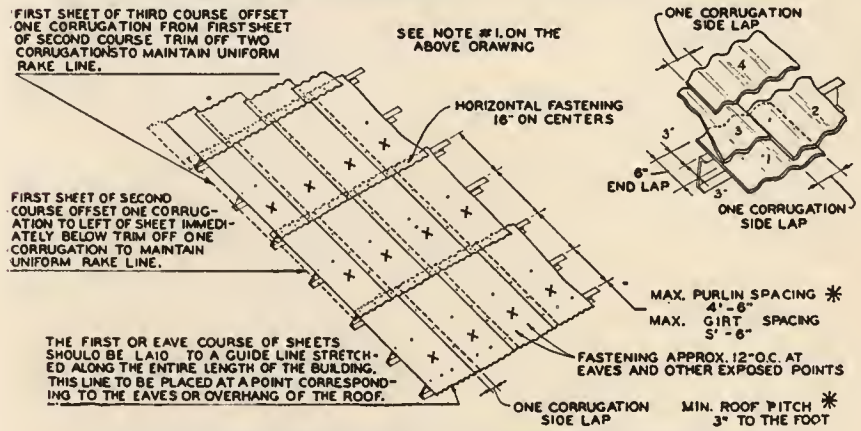


In addition to passessing many structural advantages, Transite is attractive in appearance. Note the neat internal corner construction and the workmanlike step flashing at the brick wall.

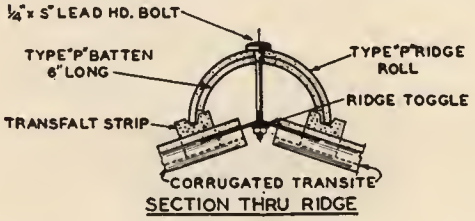
Construction details for 4.2" Corrugated Transite



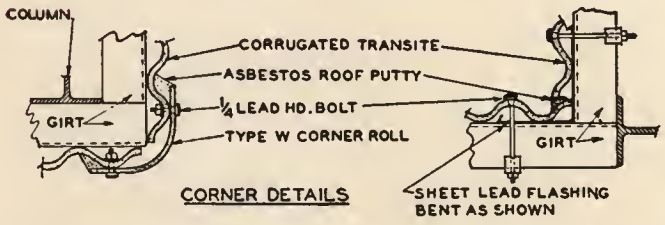
STRAIGHT JOINT CONSTRUCTION WITH CUT-CORNER SHEETS



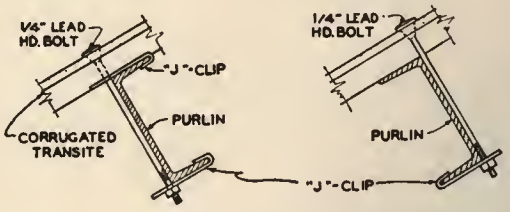
STAGGERED JOINT CONSTRUCTION WITH SQUARE-CORNER SHEETS

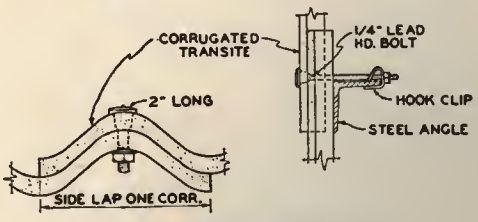


SECTION THRU RIDGE

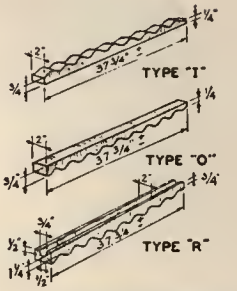


CORNER DETAILS

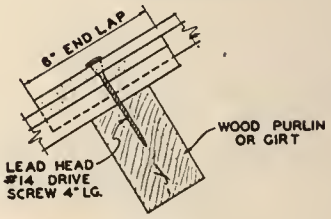


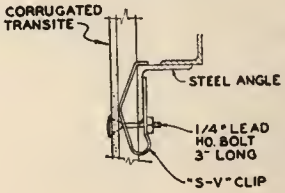


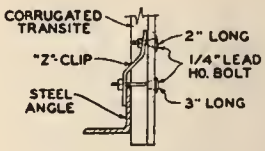
FASTENER DETAILS



TRANSFALT STRIPS







* IN AREAS WHERE STRUCTURAL DESIGN PERMITS ACCUMULATION OF SNOW AND ICE TO CAUSE EXCESSIVE LOADING, REDUCE PURLIN SPACING TO 45" (OR LESS IN EXTREME CASES) AND INCREASE THE MINIMUM ROOF PITCH TO 4".

NOTE BOLT LENGTHS FOR "J" AND HOOK CLIPS = DEPTH OF STEEL PLUS 3". DRILL 9/32" HOLES IN TRANSITE FOR LEAD HD. BOLTS AND 1/4" HOLES FOR ROUND HD. BOLTS. WHERE EXCESSIVE VIBRATION EXISTS, A NUT SECURING METHOD SHALL BE EMPLOYED.

Patents No. 2,015,129, 2,021,929 and 2,169,376
Patented Canada 1937

The J-M Insulated Rot-proof Roof

(Patented)

The J-M Insulated Rot-proof Roof was originally designed to withstand severe moisture, heat and acid conditions encountered over the machine room in paper mills. It is equally suitable for other types of industrial buildings where similar conditions prevail, and many eminently successful installations are now in service.

A section of the Johns-Manville Insulated Rot-proof Roof. For identification of the component parts, see drawing below.

Fastened directly to the steel purlins, its erection presents no unusual problems and makes it particularly well adapted to skeleton steel construction.

Regardless of how carefully a wood deck may be constructed, under severe moisture conditions vapors will penetrate the planking, condense on the underside of the built-up roof and rot will start at the top of the wood deck, unseen, and work down. The sectional view of a paper mill roof after six years of service (shown in the illustration below) demonstrates this disintegrating action.

Sectional view of a wood deck over a paper mill, rotted from the top (under the roofing) down.

To prevent such roof failures, the J-M Insulated Rot-proof Roof was designed. The approved roof insulation, of the proper thickness, prevents the depositing of moisture under the calculated humidity conditions. The impregnated, asbestos-cement Transite deck, which cannot rot, serves as a lasting factor of safety for unforeseen temperature differences. While the problem of rot, alone, can be eliminated by the use of concrete, the others of condensation and roof-drip remain. The J-M Insulated Rot-proof Roof meets all the difficulties satisfactorily.

Advantages of the J-M Insulated Rot-proof Roof

(1) Water-resistant on Both Sides—Neither the corrugated leveling fill, nor the J-M Built-up Roof will absorb moisture. The entire construction is inherently water-resistant.

(2) High Insulating Qualities—The thickness of insulation is varied, according to conditions, as may be required to prevent condensation. The heat transmission through this roof is less than one-third that through wood of equal thickness. The need for special air-conditioning or ventilating systems is reduced through its use. The insulation value of the J-M Insulated Rot-proof Roof will not be impaired during long years of service.

(3) Fire-Resisting—The materials as they are employed in the J-M Insulated Rot-proof Roof afford a highly fire-resistant construction.

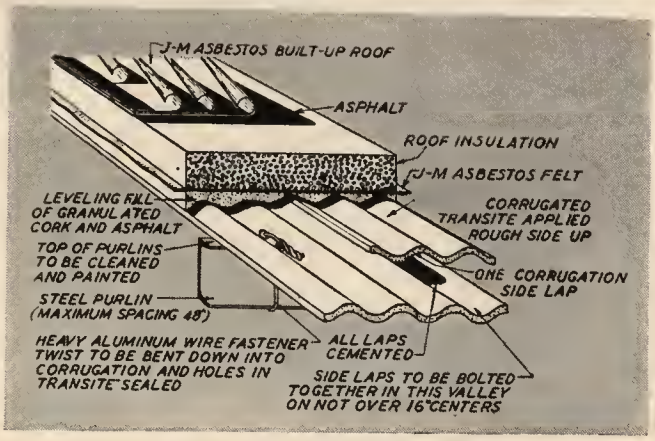
(4) Rot-proof—Because of its thorough water-tightness, no moisture can penetrate the J-M Insulated Rot-proof Roof. The entire construction is rot-proof.

(5) Acid-Resisting—The Transite under-surface and the J-M Asbestos Built-up Roof are unaffected by acid fumes encountered in paper mill and other industrial services.

(6) Floating Construction—The roof is so secured to the steel work that both are allowed to move independently, providing a floating roof construction.

(7) Light Weight—The construction, exclusive of the steel work, weighs about 8 lb. per sq. ft. plus approximately 1½ lb. per sq. ft. per inch thickness of insulation used.

(8) Low Maintenance—The J-M Insulated Rot-proof Roof can be depended upon for many years of service with practically no maintenance.



Insulated Rot-proof Roof construction details.

The J-M Transite* Insulated Roof

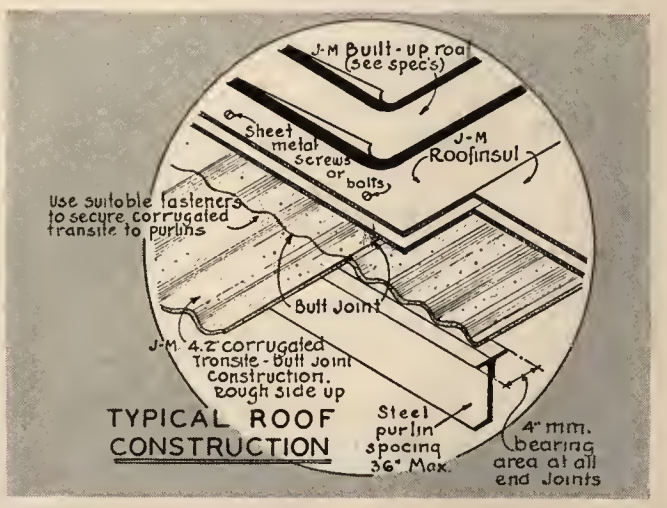
Where roof insulation is desired, but condensation conditions are not severe, a less expensive construction than the Insulated Rot-proof Roof, known as the Transite Insulated Roof, has given satisfactory service under widely varying climatic conditions. This construction uses, as the roof deck, Corrugated Transite over which is applied a minimum of two ½-in. layers of J-M Roofinsul, stapled or cemented together, which serves as a base for a standard J-M Built-up Roof.

Three constructian stoges af an Insulated Roof shawing Carrugoted Transite, Insulating Boord ond Roofing Felts.

The Corrugated Transite, laid rough side up, is bolted to the purlins with butt joints at all edges, and a minimum of two ½-in. layers of Roofinsul applied over it with all joints staggered, the three layers being bolted together as a unit deck. Large washers are used under the bolt heads and the bolts drawn tightly enough to embed the heads slightly and leave a flat upper surface. Over the Roofinsul, the type of J-M Built-up Roof selected is applied in accordance with standard J-M specifications. Detailed construction drawings of the Transite Insulated Roof are available on request.

*Reg. U. S. Pat. Off.

The advantages of this roof lie in its initial economy compared with other types which are used when condensation conditions are severe. It should be remembered that about one-third of the heat lost through uninsulated constructions in winter passes out through



Construction details of Tronsite Insuloted Raaf.

the roof. In summer, two-thirds of the entering heat reaches the inside through the exposed roof area.

Tronsite Insulated Roaf under construction.

In addition to the more comfortable working conditions which are attained through the use of insulation, the reduction in heat transmission during the winter months usually affords measurable savings in fuel.

Johns-Manville

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KOPPERS

COAL TAR PITCH ROOFING

WATERPROOFING

DAMPPROOFING

ROOF INSULATION

FLASHINGS

PLASTIPITCH PROTECTED METAL (Description only)

PROTECTIVE COATINGS (Description only)

Specifications

No. 49

KOPPERS COMPANY INC.

PITTSBURGH 19, PA.

SPECIFICATION INDEX

NEW CONSTRUCTION

Deck Construction		SLOPE of Deck	BOND in Years	Type of SURFACE	No. of PLIES	Spec. No.	Page No.
Wood	FLAT	0"-2"	20	Gravel or Slag	5	1	4
		0"-2"	15	Gravel or Slag	4	2	4
		0"-2"	10	Gravel or Slag	3	30	4
	STEEP	2"-5"	20	Slag	5	3	5
		2"-5"	15	Slag	4	25	5
		3"-9"	15	Mineral		31	6
		3"-9"	10	Mineral		4	6
Poured Concrete or Poured Gypsum	FLAT	0"-2"	20	Gravel or Slag	4	5	7
		Dead Level	20	Gravel or Slag	4	6	7
		0"-2"	15	Gravel or Slag	3	7	7
	STEEP	2"-5"	20	Slag	4	8	8
		2"-5"	15	Slag	3	32	8
		3"-9"	15	Mineral Surface		33	9
		3"-9"	10	Mineral Surface		9	9
Precast Concrete Slabs	FLAT	0"-2"	20	Gravel or Slag	4	10	10
		0"-2"	15	Gravel or Slag	3	11	10
Precast Gypsum, Gypsum Steel Plank	FLAT	0"-2"	20	Gravel or Slag	5	12	11
		0"-2"	15	Gravel or Slag	4	13	11
Precast Gypsum, Gypsum Steel Plank or Concrete Slab	STEEP	2"-5"	20	Slag	5	14	12
		2"-5"	15	Slag	4	26	12
		3"-9"	15	Mineral		34	13
		3"-9"	10	Mineral		35	13
Steel with insulation	FLAT	0"-1"	20	Gravel or Slag	4	17	14
		0"-1"	15	Gravel or Slag	3	18	14
	STEEP	1"-5"	20	Slag	4	19	15
		1"-5"	15	Slag	3	36	15
Promenade Tile over Poured Concrete	FLAT	0"-1"	20	Promenade Tile	5	20	16
Tarmac Wearing Top over Poured Concrete	FLAT	0"-½"	..	Tarmac (Bituminous)	4	27	17
SPRAY POND over poured concrete, poured gypsum, precast concrete slab	FLAT	0"-1"	20		4	23	18
		0"-1"	15	Gravel or Slag	3	24	18

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Poured Concrete, Gypsum and Precast Concrete Slabs	Normal	202	21
	High Humidity	203	21
Steel	High	204	21

FLASHINGS

Type	BOND in Years	Spec. No.	Page No.
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Composition Base and Metal Cap	15	106	22
Composition Base and Metal Cap	10	101	23
Metal Cap and Base Flashing	None	100	23
Raggle Block Flashing	15 or 20	102	24
No Metal Flashings	10	301	25
Flashing Details			25-26
(Vents, Stacks, Steel Columns, Drains and other Projections)			25-26
Finishing Strips for Eaves and Ridges			27

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Termite-proofing and Dampproofing..... 31
Sub-floor Dampproofing 32
Don Graf Waterproofing Sheets.....33 and 34
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Pitchmastic Flooring 35

KOPPERS

A Koppers Slag or Gravel Surfaced Roof consists of alternate layers of tarred felt cemented with pitch to form a continuous skin over the entire roof deck. While the actual waterproofing agent is the pitch, the felt gives an elasticity and tensile strength to the membrane which enables it to bridge cracks and joints, and to adjust itself to the expansion and contraction of the surface to which it is applied.

The number of layers or "plies" of tarred felt required varies from 3 to 5 and depends on the type of deck and the length of service desired. The number of plies used does not affect the impermeability of the roofing, but a greater number does prolong its life.

The pitch used may be either Koppers Coal-Tar Pitch, or Koppers Steep Roofing Pitch, depending on type or incline of the surface to which the roofing is applied. The first is superior for decks of slight incline because of its self-sealing characteristics; the second is ideal for steep roofs because of its ability to resist any tendency to creep due to gravity.

Either slag or gravel provides a satisfactory surface on decks of slight incline, but where steeper slopes are encountered, slag only should be used since its sharp and irregular surfaces enable it to retain a grip on the pitch and, therefore, not slide.

APPLICATION OF BUILT-UP ROOFING FELTS IN GENERAL. All roofing is to be built up in place with alternate moppings and layers of felt over the proper preliminary work as specified in this book under the several sub-heads for various types of deck construction and slope. Application is to be made by experienced workmen only and in the manner hereinafter described and the finished roof is to consist of a number of plies and type of surfacing as specified under the proper sub-head in the specifications.

Apply the roofing so that the direction of the flow of water is over and not against laps. Roll or press all plies of felt into the hot pitch and lay without wrinkles, buckles or kinks, so that the finished roof is free from pockets or blisters. All moppings must completely cover the area to which they are applied so that no part of the surface to be covered shows through the moppings. Overlap ends of all connecting plies of felt not less than 10 inches.

The widths of felt are laid shingle fashion, not only because this method produces a stronger membrane but because it also makes it possible to construct a roof of any desired number of plies in a single progressive mopping. This is accomplished by varying the widths of the edge laps. Three-ply roofing, for example, is achieved by lapping each width approximately two-thirds over the preceding width; for 4 plies, a lap of approximately three-fourths the width is required.

SLAG OR GRAVEL SURFACED ROOFS

KOPPERS FLAT ROOFS

ADVANTAGES OF COAL TAR PITCH FOR FLAT ROOFS

Two important questions should be asked about any roofing to be applied on flat decks:

1. Can it resist prolonged contact with water without deteriorating?
2. Does it have the ability to heal itself automatically?

Roofs built with Koppers Old Style Coal Tar Pitch and Approved Tarred Felt DO resist water and they DO heal themselves.

RESISTANCE TO WATER

1. Prolonged contact with water is a condition almost impossible to avoid on flat roofs. Poor drainage, low spots, or settlement of the building may cause it. Service records of 15 to 50 years by coal tar pitch roofs with little or no attention prove the resistance of tar to water. Koppers Old Style Pitch is practically insoluble in water. None of its constituents has more than a slight water solubility. Koppers Old Style Built-up Roofing is resistant to moisture and sunshine.

THE SELF-HEALING PROPERTY

2. Weathering and rapid changes in atmospheric conditions can cause cracks in the top surfaces of some types of roofing. However the vital consideration is whether these cracks are permanent if they do appear. Old Style Pitch has a property technically known as "cold flow" and even at ordinary temperatures cracks in the surface heal themselves. This can clearly be seen in photomicrographs which show the sides of the cracks moving slowly together until complete fusion takes place and the pitch again forms a continuous layer. Old Style Pitch Roofs readily conform to slight irregularities in the deck and yet remain waterproof.

THE EXTRA HEAVY TOP POURING

Additional protection is given a Koppers Roof by the extra heavy top of roofing pitch which is poured on (not mopped). This pouring amounts to approximately 75 pounds of pitch for every 100 square feet of roof surface.

THE GRAVEL OR SLAG SURFACE

The gravel or slag surface on a Koppers Roof provides an armor against hail, driving rain, sleet and snow. It also provides additional wearing surface which protects the roof against foot traffic. Roofs with gravel or slag surfaces cling to the deck even in severe wind storms.

THE EXTRA SATURATION OF THE FELT

The tarred felt used in Koppers Roofs absorbs one and one-half times its own weight of coal tar pitch during saturation. This large proportion of saturant insures high strength and maximum durability.

PRESERVATIVE AND NON-CORROSIVE ACTION

Koppers Old Style Pitch contains coal tar creosote, which is unsurpassed as a preservative for wood, felt or other materials which are used in roofing construction.

KOPPERS STEEP ROOFS

ADVANTAGES OF COAL TAR PITCH FOR STEEP ROOFS

Koppers Steep Roofing Pitch provides, for steep roofs (slopes of 2 to 5 inches per foot) the same long life, the same resistance to water and weather that have made coal tar pitch and tar-saturated felt the outstanding materials for flat built-up roofs.

On steep roofs constructed in accordance with Koppers specifications, the upper edge of every ply, laid shingle fashion, is nailed to the deck or the insulation, and thus mechanically anchored.

Before the development of steep roofing pitch, it was necessary to apply, on steep slopes, types of roofing which do not have the long service records established by coal tar pitch. This often caused a difficult situation on buildings where both steep and flat roofs were constructed, because bonds could be obtained by the owner on the coal tar pitch roofings on the flat areas, but not on the same type of roofing on the slopes. This difficulty is now eliminated, as roofing bonds can be obtained on Koppers Steep and Flat Built-up Roofings applied by Koppers Approved Roofing Contractors in territories covered by Koppers Roof Inspection Service.

Koppers Steep Roofing Pitch is approximately 30° F. harder than ordinary roofing pitch. It keeps the slag firmly embedded. It complies with the specifications of the Underwriters' Laboratories.

KOPPERS ROOF BONDS

Bonds on Koppers Roofing and Flashings are issued by Koppers Company, Inc., and the National Surety Corporation on roofs constructed according to Koppers specifications and when applied by roofing contractors approved in writing by Koppers Company, Inc. When Koppers Bonded Roofing with Koppers Bonded Flashings are specified, this company will have an inspector on the job to see that it is constructed according to the specifications. It is issued for 10, 15 or 20 years.

Note—*Koppers Company, Inc., will issue Roofing Bonds in such portions of the United States as are covered by its inspection service.*

GENERAL ROOFING INFORMATION

KOPPERS TARRED FELT

Koppers Tarred Felts are sold in standard size rolls, 36 inches wide and containing 432 square feet, except when otherwise specified. Koppers Approved Tarred Felt, the highest grade of roofing and waterproofing felt and the grade used in Koppers Bonded Roofs, has an approximate average weight of 15 lbs. per 108 square feet, or 60 pounds per roll.

KOPPERS OLD STYLE PITCH

Complies with the following standard specifications:

Federal Specifications R. P.-381 Type I (Federal Specifications Board)—"Coal Tar Pitch for Built-up Roofing."

A.S.T.M. D-450 Type A.

Underwriters' Laboratories.

Koppers Old Style Pitch is sold in barrels or metal containers, 450 to 500 lbs.

UNDERWRITERS' LABORATORIES CLASS A RATING

Roofs constructed according to Koppers specifications, with slag or gravel surfaces, carry the Class A rating of the Underwriters' Laboratories.

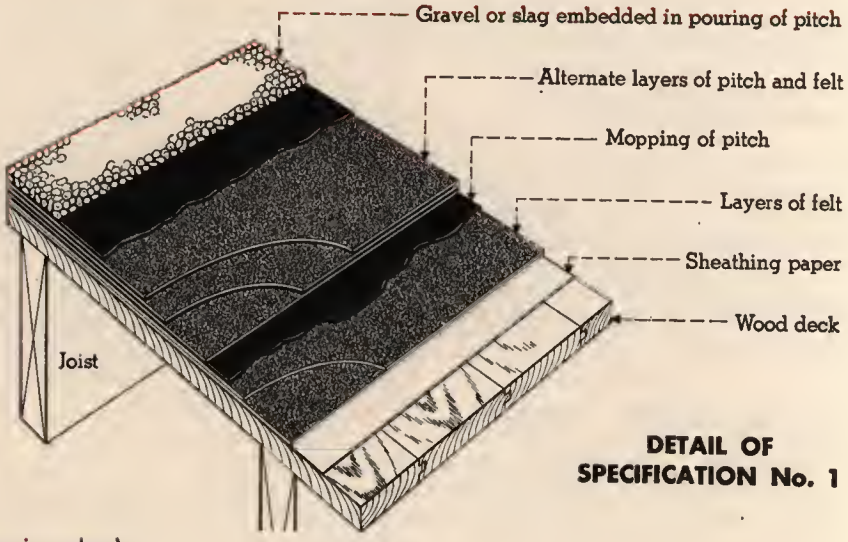
WOOD DECKS

Hot bitumen should never be applied directly to a wood deck. Sandwiched between the heat from above and the heat from below, such coating finds its way through the boards into the building. Good practice demands the cushioning and blotting effect of a layer of sheathing paper followed by layers of dry felt. Shiplap and square edge boards should be avoided where possible. If the inside of the roof deck is exposed to air pressure created from open doors or windows, the tongue-and-grooved sheathing should be used.

FLAT ROOFS

GRAVEL OR SLAG SURFACE
MAXIMUM INCLINE: 2 IN. PER FT.
WOOD DECKS

20 year—5 ply—Spec. No. 1
15 year—4 ply—Spec. No. 2
10 year—3 ply—Spec. No. 30



DETAIL OF SPECIFICATION No. 1

SPECIFICATIONS

(Select clauses as required. Optional clauses in color.)

Condition of Surface to Receive Roofing

Do not apply roofing to any surface which is not reasonably smooth and free from projections or holes which might cause puncture of roofing membrane. Lumber shall be seasoned and dry. Immediately before the application of the roofing, thoroughly clean the surface of dust and all loose material.

Application of Roofing Materials

1st. Apply one (1) thickness of five (5) pound sheathing paper over the entire surface of the deck, lapping each sheet one (1) inch over the preceding sheet. Nail to hold in place.

2nd. (Spec. No. 1—20 year) (Spec. No. 2—15 year)

Apply over the entire surface of the sheathing paper, two (2) dry plies of Koppers Approved Tarred Felt. Lap plies nineteen (19) inches. Nail as required to hold in place.

2nd. (Spec. No. 30—10 year)

Apply over the sheathing paper, one (1) dry ply of Koppers No. 30 Tarred Felt. Lap ply four (4) inches. Nail as required to hold in place.

3rd. Mop with Koppers Old Style Pitch the entire surface, preceding the application of additional plies of felt and apply over the entire surface as follows:

4th. (Spec. No. 1—20 year)

Apply three (3) plies of Koppers Approved Tarred Felt, lapping plies twenty-four and two-thirds (24⅔) inches.

4th. (Spec. No. 2—15 year) (Spec. No. 30—10 year)

Apply two (2) plies of Koppers Approved Tarred Felt, lapping plies nineteen (19) inches.

Nail each sheet of felt with simplex flat head or one (1) inch barbed roofing nails through flat tin discs, two (2) inches from the upper edge on twenty-four inch centers. All laps shall be mopped the full width with Koppers Old Style Pitch so that in no place shall felt touch felt.

5th. Pour over the entire surface of the roofing membrane a uniform coating of approximately seventy-five (75) pounds of Koppers Old Style Pitch into which, while hot, embed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag for each one hundred (100) square feet. Slag or gravel shall be from one-fourth (¼) to five-eighths (⅝) inches in size and shall be clean and dry.

General

Pitch shall not be heated above three hundred and seventy-five (375) degrees F. Tarred felt shall be laid without wrinkles or buckles.

Gravel or slag shall be applied within eight (8) days after application of felts. During freezing weather, all exposed felts shall be either immediately graveled or slagged in, or, if this is impossible, exposed felt surfaces shall be glazed with a mopping of pitch.

Material Required per 100 Sq. Ft.

MATERIAL	Spec. No. 1 (20 year)	Spec. No. 2 (15 year)	Spec. No. 30 (10 year)
Sheathing Paper	5 lbs.	5 lbs.	5 lbs.
Tarred Felt	75 lbs.	60 lbs.	60 lbs.
Pitch	150 lbs.	125 lbs.	125 lbs.
Gravel	400 lbs.	400 lbs.	400 lbs.
OR	OR	OR	OR
Slag	300 lbs.	300 lbs.	300 lbs.

BRIEF SPECIFICATIONS

The roofing is to be applied by a roofing contractor approved by Koppers Company, Inc., who shall apply the roofing in strict accordance with Koppers Specifications (No. 1 for 20 years, No. 2 for 15 years, No. 30 for 10 years) and requirements, and subject to Koppers inspection and approval. Upon completion of the work, the contractor is to furnish Koppers Roofing Bond to the owner.

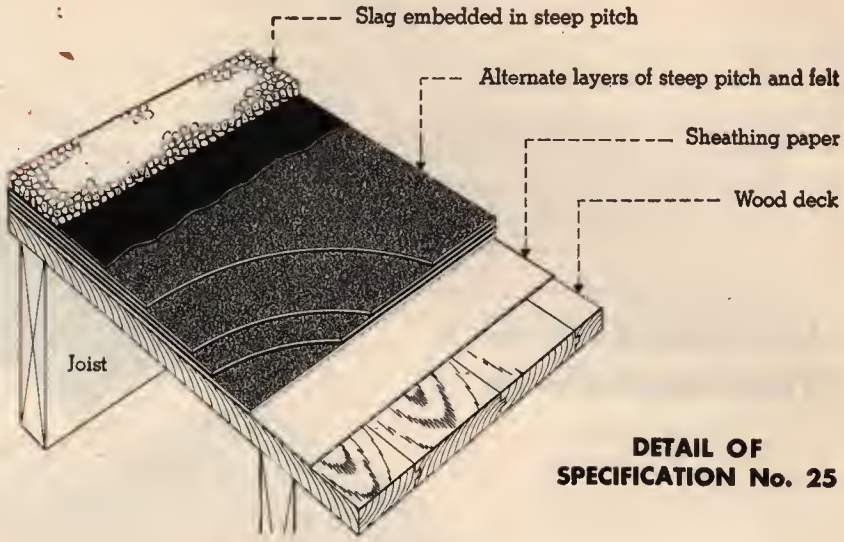
FOR BONDED FLASHINGS, refer to pages 22-23.

Koppers Roofing Bonds furnished where Koppers Inspection Service is available.

STEEP ROOFS

SLAG SURFACE—WOOD DECK
MAXIMUM INCLINE: 5 IN. PER FT.
MINIMUM INCLINE: 2 IN. PER FT.

20 year—5 ply—Spec. No. 3
15 year—4 ply—Spec. No. 25



DETAIL OF SPECIFICATION No. 25

SPECIFICATIONS (Select clauses as required. Optional clauses in color.)

Condition of Surface to Receive Roofing

Do not apply roofing to any surface which is not reasonably smooth and free from projections or holes which might cause puncture of roofing membrane. Lumber shall be seasoned and dry. Immediately before the application of the roofing, thoroughly clean the surface of dust and all loose material.

Application of Roofing Materials

1st. Apply one (1) thickness of five (5) pound sheathing paper over the entire surface of the deck, lapping each sheet one (1) inch over the preceding sheet. Nail to hold in place.

2nd. (Spec. No. 3—20 year)
Apply over sheathing paper, five (5) plies of Koppers Approved Tarred Felt at right angles to the incline of the roof, lapping each sheet twenty-nine (29) inches. Nail each ply of felt with one (1) inch barbed roofing nails through flat tin discs eight (8) inches from upper edge on twelve (12) inch centers. Mop solidly each lap of felt for a distance of twenty-seven (27) inches with Koppers Steep Pitch.

2nd. (Spec. No. 25—15 year)
Apply over the sheathing paper, four (4) plies of Koppers Approved Tarred Felt at right angles to the incline of the roof, lapping each twenty-seven and one-half (27½) inches. Nail each ply of felt with one (1) inch barbed roofing nails through flat tin discs, nine and one-half (9½) inches from the upper edge, on twelve (12) inch centers. Mop solidly each lap of felt for a distance of twenty-five and one-half (25½) inches with Koppers Steep Pitch.

Pitch moppings between plies of felt shall not extend beyond lower edge of overlying ply of felt, so that the finished felt surface is free of pitch. End strips shall not be applied over connecting plies of felt.

3rd. Pour or drip mop over the entire surface of the roofing membrane, a uniform coating of approximately sixty (60) pounds of Koppers Steep Pitch in which, while hot, immediately embed firmly not less than two hundred and seventy-five (275) pounds of clean, dry slag (three-sixteenth ($^3/_{16}$) to one-half (½) inch in size) for each one hundred (100) square feet. In cold weather, slag shall be heated and dry before being applied. The finished slag surface shall be broomed lightly to remove loose slag.

At all two way ridges, for a distance of nine (9) inches on each side, pour a coating of steep pitch over slag and embed a second layer of slag.

General

Steep Pitch shall not be heated above three hundred and seventy-five (375) degrees F., nor applied to roof at less than three hundred and twenty-five (325) degrees F. Tarred felt shall be laid without wrinkles or buckles. At junction of steep and flat roofing, the roofing on the flat surface is to be carried up the inclined surface not less than twenty-four (24) inches before the steep roofing is applied. Application of steep roofing shall start at the point of junction with the flat roof. Extend slag stops one and one-half (1½) inches above roof deck.

Material Required per 100 Sq. Ft.

MATERIAL	Spec. No. 3 (20 year)	Spec. No. 25 (15 year)
Sheathing Paper	5 lbs.	5 lbs.
Tarred Felt	75 lbs.	60 lbs.
Steep Pitch	140 lbs.	120 lbs.
Slag	275 lbs.	275 lbs.

BRIEF SPECIFICATION

The roofing is to be applied by a roofing contractor approved by Koppers Company, Inc., who shall apply the roofing in strict accordance with Koppers Specifications (No. 3 for 20 years, No. 25 for 15 years) and requirements, and subject to Koppers inspection and approval.

Upon completion of the work, the contractor is to furnish Koppers Roofing Bond to the owner.

Koppers Roofing Bonds furnished where Koppers Inspection Service is available.

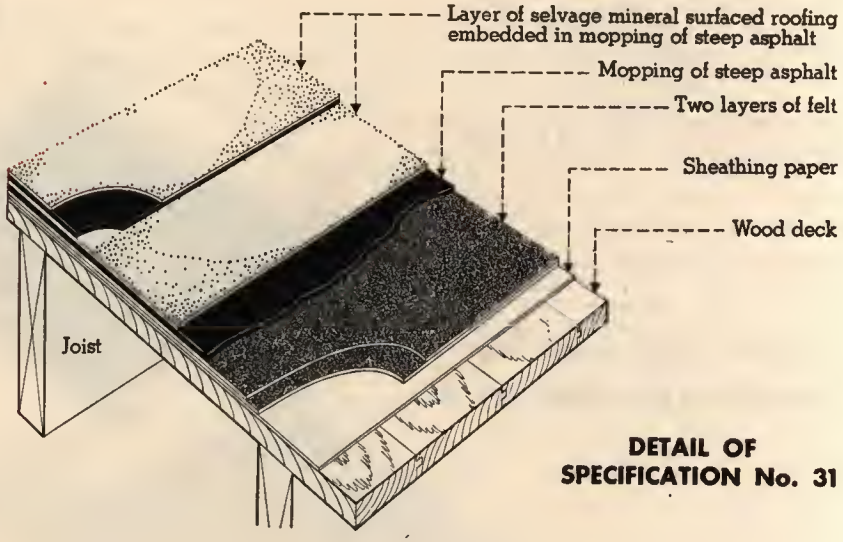
FOR BONDED FLASHINGS, refer to pages 22-23.

STEEP ROOFS

MINERAL SURFACE — WOOD DECKS
MAXIMUM INCLINE: 9 IN. PER FT.
MINIMUM INCLINE: 3 IN. PER FT.

15 year—Specification No. 31

10 year—Specification No. 4



DETAIL OF SPECIFICATION No. 31

SPECIFICATIONS (Select clauses as required. Optional clauses in color.)

Condition of Surface to Receive Roofing

(Same as described for Specifications No. 3 and No. 25, on page 5:)

Application of Roofing Materials

1st. (Spec. No. 31—15 year)

A. Apply at right angles to incline of roof one (1) thickness of 5 pound sheathing paper over the entire surface of the deck, lapping each sheet one (1) inch over the preceding sheet. Nail to hold in place.

B. Apply at right angles to the incline of the roof over the sheathing paper, two (2) plies of Koppers Approved Tarred Felt, lapping each sheet nineteen (19) inches. Mop back solidly each lap of tarred felt for a distance of seventeen (17) inches with Koppers Steep Asphalt.

Each ply of felt shall be nailed with one (1) inch barbed roofing nails through flat tin discs two (2) inches from upper edge on eighteen (18) inch centers.

1st. (Spec. No. 4—10 year)

Apply at right angles to the incline of the roof, one (1) ply of Koppers No. 30 Tarred Felt, lapping each sheet four (4) inches over the preceding sheet. Nail along upper edge on eighteen (18) inch centers.

2nd. Beginning at the low point, thoroughly mop a portion of the tarred felt surface with Koppers Steep Asphalt, into which, while hot, embed a sheet of selvage edge mineral surface roofing, this to run across the slope of the roof. Selvage should be on upper edge. Nail in double staggered course along selvage with one (1) inch barbed roofing nails through flat tin discs, kept two (2) inches from the mineral surfacing and twelve (12) inches o.c. for each course. Mop the selvage of the sheet just laid and the adjacent area of tarred felt surface with steep asphalt and into this, while hot, embed thoroughly the next sheet of mineral surfaced roofing, taking care that the lower edge meets the edge of the mineral surfacing of the sheet below. Nail as described for previous sheet. Repeat the process of laying sheets of mineral surfaced roofing shingle fashion until the entire area has been covered. Lap ends six (6) inches, nailing the underlying sheet with six (6) one (1) inch barbed roofing nails through flat tin discs, starting one (1) inch from the lower edge, spaced five (5) inches o.c. Coat the underside of mineral surfaced roofing at each end lap with Steep Asphalt and firmly embed in the surface of the underlying sheet. Carefully rub down edges.

General

Mineral surfaced roofing is to be cut in strips not exceeding twenty (20) feet in length prior to using, and is to be stacked flat for a sufficient time to permit these strips to become perfectly flat.

Tarred Felt and Mineral Surface Roofing shall be laid without wrinkles or buckles.

Steep Asphalt shall not be heated above four hundred (400) degrees F.

At junction of steep and flat roofing, the roofing on the flat surface is to be carried up the inclined surface not less than twenty-four (24) inches before steep roofing is applied. Application of steep roofing shall start at the point of junction with the flat roof.

Materials Required per 100 Sq. Ft.

MATERIAL	Spec. No. 31 (15 year)	Spec. No. 4 (10 year)
Red Rosin	5 lbs.	
Tarred Felt	30 lbs.	30 lbs.
Steep Asphalt	90 lbs.	60 lbs.
Selvage-edge Roofing	110 lbs.	110 lbs.

BRIEF SPECIFICATION

The roofing is to be applied by a roofing contractor approved by Koppers Company, Inc., who shall apply the roofing in strict accordance with Koppers Specifications (No. 31 for 15 years, No. 4 for 10 years) and requirements and subject to Koppers inspection and approval. Upon completion of the work, the contractor is to furnish Koppers Roofing Bond to the owner.

NOTE: Koppers Company, Inc., will issue roofing bonds where roofing is applied according to Specifications No. 31 and No. 4, only when applied in connection with flat bonded Koppers Roofing.

Koppers Roofing Bonds furnished where Koppers Inspection Service is available.

FOR BONDED FLASHINGS refer to pages 22-23.

POURED CONCRETE AND POURED GYPSUM DECKS

Poured concrete decks sometimes cause trouble because the built-up roofing is laid before the deck is thoroughly dry—such as might happen when the general contractor is anxious to get the building under cover and so urges the roofing contractor to begin work shortly after the deck has been poured. When this happens the result is a blistered and buckled membrane or, just as serious, insulation curls and makes an unsatisfactory job.

The roofing contractor, backed by the Architect, should insist on a thoroughly dry deck before beginning work. He should also see to it that the deck is free of loose sand, frozen scale and other foreign matter. Projections should be removed, low points filled with cement grout or other suitable material, and all cracks pointed up.

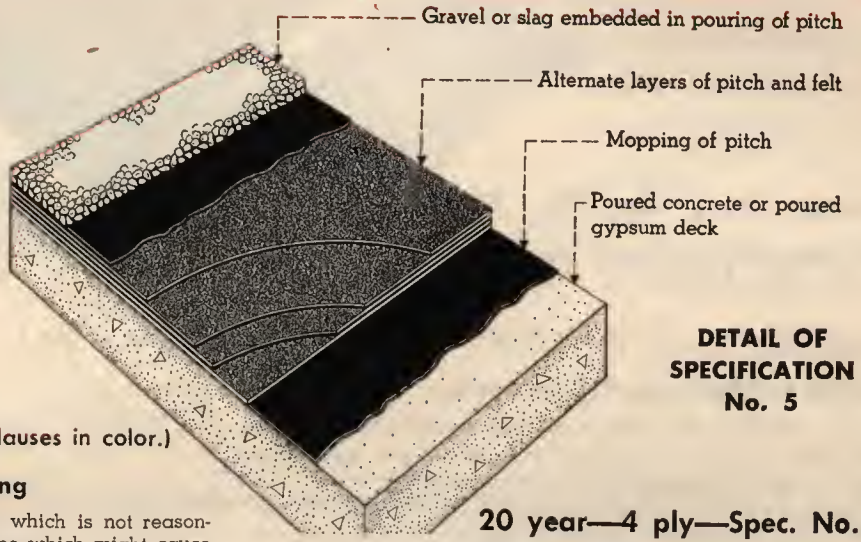
A poured gypsum deck, especially, should be inspected for moisture content, the characteristic of this material being such that even after pouring it quickly takes on a dry appearance. The dryness, however, actually extends only a little distance below the surface, the large mass of the gypsum actually being very moist.

FLAT ROOFS

GRAVEL OR SLAG SURFACE MAXIMUM INCLINE: 2 IN. PER FT. POURED CONCRETE AND POURED GYPSUM DECKS

(Also for wood decks where Koppers Insulation Specification No. 201 is used.)

(If Poured Gypsum Deck is not thoroughly dry, apply roofing according to Specification No. 12 for 20 year and No. 13 for 15 year.)



DETAIL OF SPECIFICATION No. 5

SPECIFICATIONS

(Select clauses as required. Optional clauses in color.)

Condition of Surface to Receive Roofing

Do not apply built-up roofing to any surface which is not reasonably smooth and free from projections or holes which might cause puncture of roofing membrane. Surfaces must be dry. Immediately before the application of the roofing, thoroughly clean the surface of dust and loose materials. Decks of inclines exceeding one (1) inch and less than two (2) inches to the foot shall permit nailing, or nailing strips must be set in the deck flush with its surface, these strips to be spaced three (3) feet apart and placed up and down and not across the slope of the roof.

Application of Roofing Materials

1st. (A) Over Poured Concrete: Mop deck completely with Koppers Old Style Pitch.

(B) Over Poured Gypsum: Strip mop the deck with two (2) foot wide moppings of Koppers Old Style Pitch, with one (1) foot of space between moppings.

2nd. (Spec. No. 5—20 year)

Apply over the entire surface, four (4) plies of Koppers Approved Tarred Felt, lapping plies twenty-seven and one-half (27½) inches.

Mop solidly between each 27½ inch lap with Koppers Old Style Pitch so that in no place shall felt touch felt.

2nd. (Spec. No. 7—15 year)

Apply over the entire surface three (3) plies of Koppers Approved Tarred Felt, lapping plies twenty-four and two-third (24⅔) inches.

Mop solidly between the 24⅔ inch lap with Koppers Old Style Pitch so that in no place shall felt touch felt.

2nd. (Spec. No. 6—20 year)

Apply over the entire surface, two (2) plies of Koppers Approved Tarred Felt, lapping plies nineteen (19) inches, mopping solidly between each 19 inch lap with Koppers Old Style Pitch so that in no place shall felt touch felt.

Mop the entire surface of the first two plies of felt.

Apply over the entire surface two (2) plies of Koppers Approved Tarred Felt, lapping plies nineteen (19) inches, mopping solidly between the 19 inch lap with Koppers Old Style Pitch so that in no case shall felt touch felt.

Where slope of deck is more than one (1) inch but less than two (2) inches per foot and deck permits nailing, nail along upper edge of sheet, nails to be spaced twenty-four (24) inches o.c. Where nailing strips are installed, nail each ply of felt with one (1) inch barbed roofing nails through flat tin discs three (3) inches from upper edge on three (3) foot centers.

20 year—4 ply—Spec. No. 5

20 year—4 ply—Spec. No. 6
(for Dead Level Decks)

15 year—3 ply—Spec. No. 7

3rd. Pour over the entire surface of the roofing membrane a uniform coating of approximately seventy-five (75) pounds of Koppers Old Style Pitch, in which, while hot, embed not less than four hundred (400) pounds of one-quarter (¼) to five-eighth (⅝) inch clean dry gravel or three hundred (300) pounds of slag for each one hundred (100) square feet.

General

Pitch shall not be heated above three hundred seventy-five (375) degrees F. Tarred felt shall be laid without wrinkles or buckles.

Gravel or slag shall be applied within eight (8) days after application of felts. During freezing weather, all exposed felts shall be either immediately graveled or slagged in, or, if this is impossible, exposed felt surfaces shall be glazed with a mopping of pitch.

Materials Required per 100 Sq. Ft.

MATERIAL	Spec. No. 5 (20 year)	Spec. No. 6 (20 year)	Spec. No. 7 (15 year)
Pitch	200 lbs.	200 lbs.	175 lbs.
Felt	60 lbs.	60 lbs.	45 lbs.
Gravel	400 lbs.	400 lbs.	400 lbs.
OR	OR	OR	OR
Slag	300 lbs.	300 lbs.	300 lbs.

BRIEF SPECIFICATION

The roofing is to be applied by a roofing contractor approved by Koppers Company, Inc., who shall apply the roofing in strict accordance with Koppers Specifications (No. 5 for 20 years, No. 6 for 20 years on dead level deck, No. 7 for 15 years) and requirements, and subject to Koppers inspection and approval. Upon completion of the work the contractor is to furnish Koppers Roofing Bond to the owner.

Koppers Roofing Bonds furnished where Koppers Inspection Service is available.

FOR BONDED FLASHINGS, refer to pages 22-23.

POURED CONCRETE AND POURED GYPSUM DECKS

STEEP ROOFS

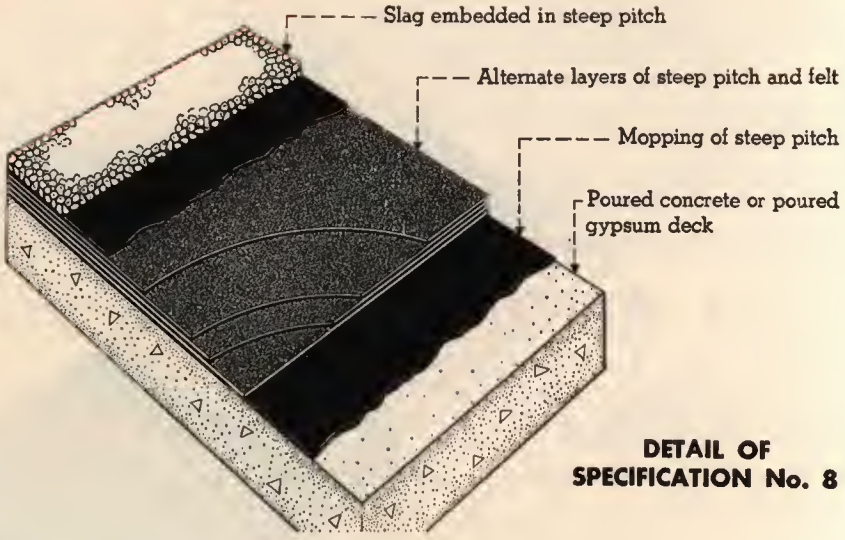
SLAG SURFACE
MAXIMUM INCLINE: 5 IN. PER FT.
MINIMUM INCLINE: 2 IN. PER FT.
POURED CONCRETE AND POURED GYPSUM DECKS

(Also for wood decks where Koppers Insulotion Specificotion No. 201 is used.)

(If poured gypsum is not thoroughly dried, opply occording to Specificotion No. 14 for 20 yeors, ond Specificction No. 26 for 15 yeors.)

20 year—4 ply—Spec. No. 8

15 year—3 ply—Spec. No. 32



DETAIL OF SPECIFICATION No. 8

SPECIFICATIONS (Select clauses as required. Optional clauses in color.)

Condition of Surface to Receive Roofing

Do not apply built-up roofing to any surface which is not reasonably smooth and free from projections or holes which might cause puncture of roofing membrane. Surfaces must be dry. Immediately before the application of the roofing, thoroughly clean the surfaces of dust and loose material. Decks not permitting nailing shall have creosoted nailing strips set flush with the surface, these strips to be spaced three (3) feet apart up and down, not across slope of the roof.

Application of Roofing Materials

1st. (A) Over Poured Concrete: Mop deck completely with Koppers Steep Pitch.

(B) Over Poured Gypsum: Strip mop the deck with two (2) foot wide moppings of Koppers Steep Pitch with one (1) foot between moppings.

2nd. (Spec. No. 8—20 year)

Apply at right angles to the incline over the entire surface, four (4) plies of Koppers Approved Tarred Felt, lapping plies twenty-seven and one-half (27½) inches.

Mop solidly each ply of felt the full 27½ inch lap with Koppers Steep Pitch.

2nd. (Spec. No. 32—15 year)

Apply at right angles to the incline over the entire surface, three (3) plies of Koppers Approved Tarred Felt, lapping plies twenty-four and two-third (24⅔) inches.

Mop solidly each ply of felt the full 24⅔ inch lap with Koppers Steep Pitch.

Nail each ply of felt with one (1) inch suitable nails through flat tin discs (or with staples for gypsum decks) nine and one-half (9½) inches from upper edge on twelve (12) inch centers. Where nailing strips are used, the felt shall be secured with two nails (at each nailing strip) spaced seven and one-half (7½) inches and nine and one-half (9½) inches respectively from the upper edge of each sheet. Pitch moppings between plies shall not extend beyond lower edge of overlying ply of felt so that finished felt surface is free of pitch. End strips shall not be applied over connecting plies of felt.

3rd. Pour or drip mop over the entire surface of the roofing membrane a uniform coating of approximately sixty (60) pounds of Koppers Steep Pitch in which, while hot, immediately embed firmly not less than two hundred seventy-five (275) pounds of clean, dry slag (from three-sixteenth (3/16) to one-half (½) inch in size) for each one hundred (100) square feet. In cold weather slag shall be heated and dry before being applied. The finished slag surface shall be broomed lightly to remove loose slag.

General

At all two way ridges, for a distance of nine (9) inches on each side, pour a coating of steep pitch over slag and embed a second layer of slag.

Steep pitch shall not be heated above three hundred seventy-five (375) degrees F., nor applied to roof at less than three hundred twenty-five (325) degrees F.

Tarred felt should be laid without wrinkles or buckles.

At junction of steep and flat roofing, the roofing on the flat surface is to be carried up the inclined surface not less than twenty-four (24) inches before the steep roofing is applied. Application of steep roofing shall start at the point of junction with the flat roof.

Extend slag stops one and one-half (1½) inches above roof deck.

Materials Required per 100 Sq. Ft.

MATERIAL	Spec. No. 8 (20 year)	Spec. No. 32 (15 year)
Steep Pitch	160 lbs.	140 lbs.
Tarred Felt	60 lbs.	45 lbs.
Slag	275 lbs.	275 lbs.

BRIEF SPECIFICATION

The roofing is to be applied by a roofing contractor approved by Koppers Company, Inc., who shall apply the roofing in strict accordance with Koppers Specifications (No. 8 for 20 years, No. 32 for 15 years) and requirements, and subject to Koppers inspection and approval. Upon completion of the work contractor to furnish Koppers Roofing Bond to the owner.

Koppers Roofing Bonds furnished where Koppers Inspection Service is available.

FOR BONDED FLASHINGS, refer to pages 22-23.

POURED CONCRETE AND POURED GYPSUM DECKS (continued)

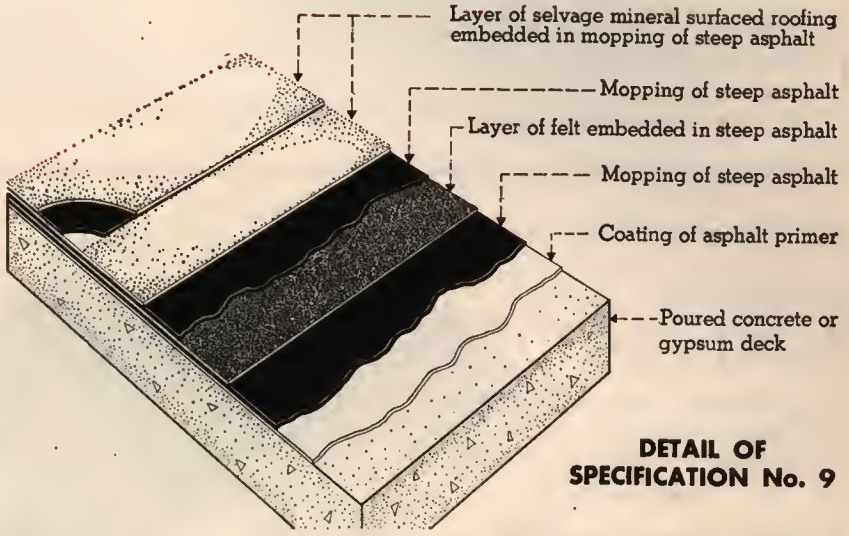
STEEP ROOFS

MINERAL SURFACE
MAXIMUM INCLINE: 9 IN. PER FT.
MINIMUM INCLINE: 3 IN. PER FT.
POURED CONCRETE AND POURED GYPSUM DECKS

(Also for wood decks where Koppers Insulation Specification No. 201 is used.)

15 year—Specification No. 33

10 year—Specification No. 9



DETAIL OF SPECIFICATION No. 9

SPECIFICATIONS (Select clauses as required. Optional clauses in color.)

Condition of Surface to Receive Roofing

(Same as described under Specifications No. 8 and No. 32, page 8.)

Application of Roofing Materials

1st. Apply to the entire surface of the deck a priming coat of Asphalt Primer and allow to dry for a period of not less than six (6) hours.

2nd. (A) Over Poured Concrete: Mop deck completely with Koppers Steep Asphalt.

(B) Over Poured Gypsum: Strip mop the deck with two (2) foot wide moppings of steep asphalt with one (1) foot between moppings.

3rd. (Spec. No. 33—15 year)

Apply at right angles to the incline over the entire surface, two (2) plies of Koppers Approved Tarred Felt, lapping plies nineteen (19) inches.

Mop solidly each ply of felt the full 19 inch lap with Koppers Steep Asphalt.

Nail two (2) inches from upper edge on 18 inches o.c.

3rd. (Spec. No. 9—10 year)

Apply at right angles to the incline over the entire surface, one (1) ply of Koppers Approved Tarred Felt, lapping sheets six (6) inches.

Mop solidly each 6 inch lap with Koppers Steep Asphalt.

Nail two (2) inches from lower edge on 18 inches o.c.

Each ply of felt shall be nailed with suitable nails through flat tin discs (or with staples for gypsum decks). Where nailing strips are used the felt shall be secured with three (3) one (1) inch barbed roofing nails through flat tin discs two (2), ten (10) and eighteen (18) inches from the upper edge respectively at each nailing strip.

4th. (Same as described in paragraph No. 2 in Specification No. 31 for 15 years, or Specification No. 4 for 10 years on page 6, except that if nailing strips are installed the following is to be inserted):

When nailing strips are installed, sheets shall be nailed along the selvage edge with three (3) nails driven through flat tin discs spaced five (5) inches apart at each nailing strip and kept back two (2) inches from mineral surfacing.

General

(Same as under "General" in Specifications No. 31 and No. 4, on page 6.)

Materials Required per 100 Sq. Ft.

MATERIAL	Spec. No. 33 (15 year)	Spec. No. 9 (10 year)
Asphalt Primer	1 gal.	1 gal.
Steep Asphalt	120 lbs.	90 lbs.
Tarred Felt	30 lbs.	15 lbs.
Selvage-edge Roofing	110 lbs.	110 lbs.

BRIEF SPECIFICATION

The roofing is to be applied by a roofing contractor approved by Koppers Company, Inc., who shall apply the roofing in strict accordance with Koppers Specifications (No. 33 for 15 years, No. 9 for 10 years) and requirements, and subject to Koppers inspection and approval. Upon completion of the work, the contractor is to furnish Koppers Roofing Bond to the owner. NOTE: Koppers Company, Inc., will issue roofing bond when roofing is applied according to Specifications No. 33 and No. 9, only when applied in connection with Flat Bonded Koppers Roofing.

Koppers Roofing Bonds furnished where Koppers Inspection Service is available.

FOR BONDED FLASHINGS, refer to pages 22-23.

PRECAST CONCRETE SLAB DECKS

Precast concrete slab decks should receive the same careful scrutiny recommended for poured concrete or gypsum decks, although as a rule the possibility of moisture being present due to insufficient drying time is not likely to be encountered. However, the contractor will often find one or more slabs resting unevenly which results in edges projecting above the surface. This may have been due to poor workmanship in laying the slab and should be corrected by resetting or leveling off. Where it is necessary to fill low areas, the use of cinder aggregate is not recommended since this material traps air and moisture, causing it to expand and crack when covered. The result is a badly blistered built-up roofing surface.

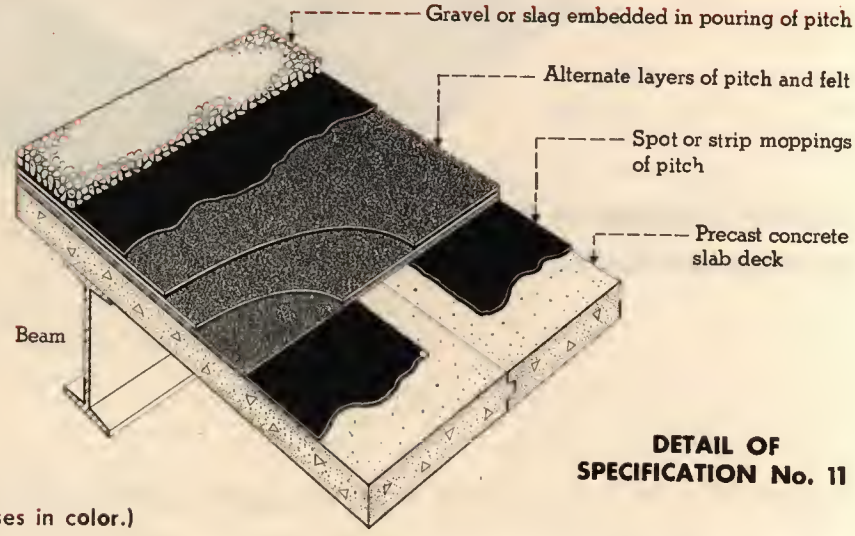
Because the steel work supporting concrete slabs will expand and contract, the resultant movement of the slabs will cause cracks in the roof membrane unless "spot mopping" is employed. This provides for the keeping back of pitch moppings for a certain distance from the cracks, thereby permitting the roofing felts some freedom of movement over the joints. Spot moppings also insure against the possibility of the pitch seeping through the joints into the interior of the building.

FLAT ROOFS

GRAVEL OR SLAG SURFACE
MAXIMUM INCLINE: 2 IN. PER FT.
PRECAST CONCRETE SLAB

20 year—4 ply—Spec. No. 10

15 year—3 ply—Spec. No. 11



DETAIL OF SPECIFICATION No. 11

SPECIFICATIONS

(Select clauses as required. Optional clauses in color.)

Condition of Surface to Receive Roofing

Do not apply built-up roofing to any surface which is not reasonably smooth and free from projections or holes which might cause puncture of the membrane. Surfaces must be dry. Immediately before the application of the roofing, thoroughly clean the surface of dust and loose material. Decks of inclines exceeding one (1) inch and less than two (2) inches to the foot shall permit nailing, or nailing strips must be set in the deck flush with the surface, these strips to be spaced three (3) feet apart and placed up and down and not across the slope of the roof. All joints between precast concrete slabs shall be pointed up with plastic cement which shall be troweled so that the top surface is level with the deck.

Application of Roofing Materials

1st. Each slab shall be spot or strip mopped with Koppers Old Style Pitch, keeping pitch moppings back at least four (4) inches from edge of each slab joint.

2nd. (Spec. No. 10—20 year)

Apply over the entire surface four (4) plies of Koppers Approved Tarred Felt, lapping plies twenty-seven and one-half (27½) inches.

Mop solidly between each 27½ inch lap with Koppers Old Style Pitch so that in no place shall felt touch felt.

2nd. (Spec. No. 11—15 year)

Apply over the entire surface three (3) plies of Koppers Approved Tarred Felt lapping plies twenty-four and two-third (24⅔) inches.

Mop solidly between the 24⅔ inch lap with Koppers Old Style Pitch so that in no place shall felt touch felt.

Where slope of deck is more than one (1) inch but less than two (2) inches per foot and deck permits nailing, nail along the upper edge of sheet, nails to be spaced twenty-four (24) inches o.c. Where nailing strips are installed, nail each ply of felt with one (1) inch barbed roofing nails through flat tin discs three (3) inches from upper edge on three (3) foot centers.

3rd. Pour over the entire surface of the roofing membrane a uniform coating of approximately seventy-five (75) pounds of Koppers Old Style Pitch, into which, while hot, embed not less than four hundred (400) pounds of one-quarter (¼) to five-eighth (⅝) inch clean dry gravel or three hundred (300) pounds of slag for each one hundred (100) square feet.

General

Pitch shall not be heated above three hundred seventy-five (375) degrees F. Tarred felt shall be laid without wrinkles or buckles.

Gravel or slag shall be applied within eight (8) days after application of felts. During freezing weather, all exposed felts shall be either immediately graveled or slagged in, or, if this is impossible, exposed felt surfaces shall be glazed with a mopping of pitch.

Materials Required per 100 Sq. Ft.

MATERIAL	Spec. No. 10 (20 year)	Spec. No. 11 (15 year)
Pitch	200 lbs.	175 lbs.
Felt	60 lbs.	45 lbs.
Gravel	400 lbs.	400 lbs.
OR	OR	OR
Slag	300 lbs.	300 lbs.

BRIEF SPECIFICATIONS

The roofing is to be applied by roofing contractor approved by Koppers Company, Inc., who shall apply the roofing in strict accordance with Koppers Specifications (No. 10 for 20 years, No. 11 for 15 years) and requirements, and subject to Koppers inspection and approval. Upon completion of the work, contractor is to furnish Koppers Roofing Bond to the owner.

Koppers Roofing Bonds furnished where Koppers Inspection Service is available.

FOR BONDED FLASHINGS, refer to pages 22-23.

PRECAST GYPSUM OR GYPSUM STEEL PLANK DECKS

The same recommendations applying to precast concrete slabs apply to precast gypsum slabs and gypsum steel planks. All uneven slabs should be reset or leveled off so that the roof will be laid on a flat and even surface, free from projections and low areas.

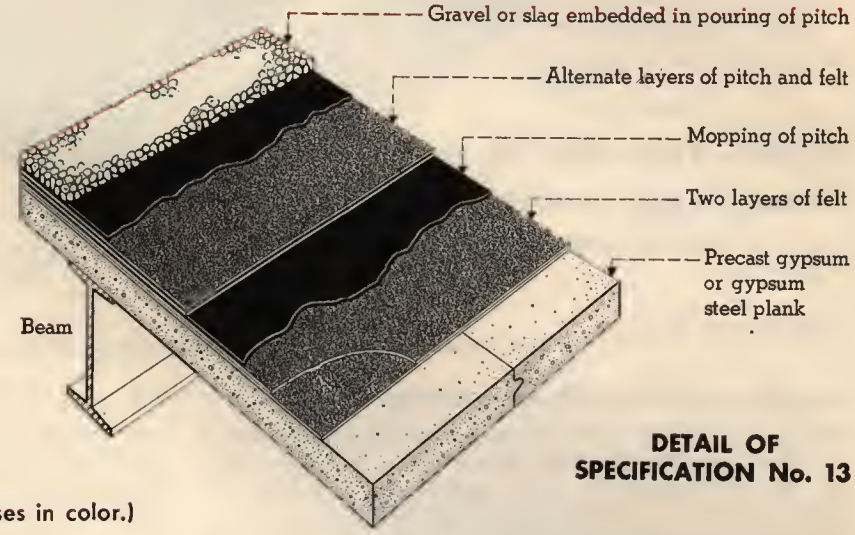
Because these slabs are precast, the possibility of a high moisture content being present is more remote than in the poured gypsum deck and the precautions are not therefore necessary.

FLAT ROOFS

GRAVEL OR SLAG SURFACE
MAXIMUM INCLINE: 2 IN. PER FT.
PRECAST GYPSUM — GYPSUM STEEL PLANK DECKS (on Poured Gypsum, refer to Specifications No. 5 or No. 7.)

20 year—5 ply—Spec. No. 12

15 year—4 ply—Spec. No. 13



DETAIL OF SPECIFICATION No. 13

SPECIFICATIONS

(Select clauses as required. Optional clauses in color.)

Condition of Surface to Receive Roofing

Do not apply built-up roofing to any surface which is not reasonably smooth and free from projections or holes which might cause puncture of the membrane. Surfaces must be dry. Immediately before the application of the roofing, thoroughly clean the surface of dust and loose material. Decks of inclines exceeding one (1) inch and less than two (2) inches to the foot shall permit nailing, or nailing strips must be set in the deck flush with the surface, these strips to be spaced three (3) feet apart and placed up and down and not across the slope of the roof. All joints between precast concrete slabs shall be pointed up with plastic cement which shall be troweled so that the top surface is level with the deck.

Application of Roofing Materials

1st. Apply over the entire surface two (2) dry plies of Koppers Approved Tarred Felt. Lap plies nineteen (19) inches. Nail as required to hold in place.

2nd. Mop with Koppers Old Style Pitch the entire surface preceding the application of additional plies of felt.

3rd. (Spec. No. 12—20 year)

Apply three (3) plies of Koppers Approved Tarred Felt, lapping plies twenty-four and two-third (24⅔) inches. Nail each sheet of felt with one and one-half (1½) inch barbed roofing nails through flat tin discs or with staples, six (6) inches from the upper edge on twenty-four (24) inch centers. All laps shall be mopped with pitch the full 24⅔ inches, so that in no place shall felt touch felt.

3rd. (Spec. No. 13—15 year)

Apply two (2) plies of Koppers Approved Tarred Felt, lapping plies nineteen (19) inches. Nail each sheet with one and one-half (1½) inch barbed roofing nails through flat tin discs or with staples, six (6) inches from the upper edge on twenty-four (24) inch centers. All laps shall be mopped with pitch the full nineteen (19) inches so that in no place shall felt touch felt.

4th. Pour over the entire surface of the roofing membrane a uniform coating of approximately seventy-five (75) pounds of Koppers Old Style Pitch, into which, while hot, embed not less than four hundred (400) pounds of one-quarter (¼) to five-eighth (⅝) inch clean dry gravel or three hundred (300) pounds of slag for each one hundred (100) sq. ft.

General

Pitch shall not be heated above three hundred and seventy-five (375) degrees F. Tarred Felt shall be laid without wrinkles or buckles.

Gravel or slag shall be applied within eight (8) days after application of felts. During freezing weather, all exposed felts shall be either immediately graveled or slagged in, or, if this is impossible, exposed felt surfaces shall be glazed with a mopping of pitch.

Materials Required per 100 Sq. Ft.

MATERIAL	Spec. No. 12 (20 year)	Spec. No. 13 (15 year)
Pitch	150 lbs.	125 lbs.
Torred Felt	75 lbs.	60 lbs.
Grovel	400 lbs.	400 lbs.
OR	OR	OR
Slag	300 lbs.	300 lbs.

BRIEF SPECIFICATION

The roofing is to be applied by a roofing contractor approved by Koppers Company, Inc., who shall apply the roofing in strict accordance with Koppers Specifications (No. 12 for 20 years, No. 13 for 15 years) and requirements, and subject to Koppers inspection and approval. Upon completion of the work, the contractor is to furnish Koppers Roofing Bond to the owner.

Koppers Roofing Bonds furnished where Koppers Inspection Service is available.

FOR BONDED FLASHINGS, refer to pages 22-23.

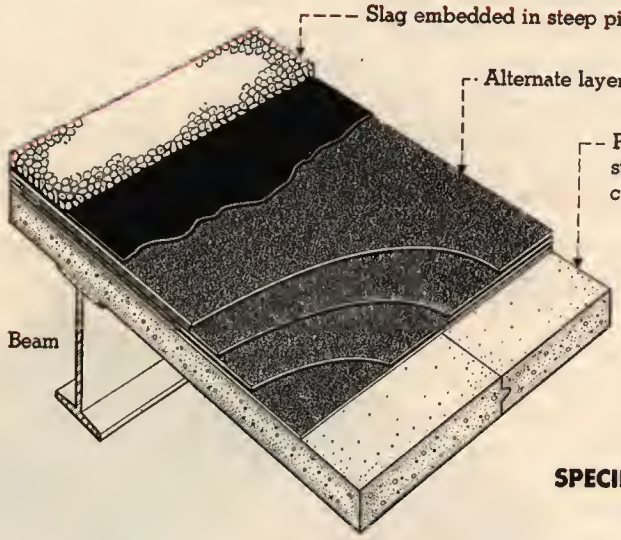
PRECAST GYPSUM, GYPSUM STEEL PLANK OR CONCRETE SLABS

STEEP ROOFS

SLAG SURFACE
MAXIMUM INCLINE: 5 IN. PER FT.
MINIMUM INCLINE: 2 IN. PER FT.
PRECAST GYPSUM—GYPSUM STEEL PLANK OR CONCRETE SLAB DECKS

20 year—5 ply—Spec. No. 14

15 year—4 ply—Spec. No. 26



DETAIL OF SPECIFICATION No. 26

SPECIFICATIONS (Select clauses as required. Optional clauses in color.)

Condition of Surface to Receive Roofing

Do not apply built-up roofing to any surface which is not reasonably smooth and free from projections or holes which might cause puncture of the membrane. Surface must be dry. Immediately before the application of the roofing, thoroughly clean the surface of dust and loose material. Concrete slabs not permitting nailing shall have creosoted nailing strips set flush with the surface, spaced three (3) feet apart and set parallel to the incline of the roof.

All joints between precast concrete slabs shall be pointed up with plastic cement which shall be troweled so that the top surface is level with the deck.

Application of Roofing Materials

1st. Each slab shall be spot or strip mopped with Koppers Steep Pitch; keeping pitch moppings back at least four (4) inches from edge of each slab joint.

2nd. (Spec. No. 14—20 year) Apply at right angles to the incline over the entire surface, five (5) plies of Koppers Approved Tarred Felt, lapping each sheet twenty-nine (29) inches. Nail each ply with one and one-half (1½) inch cut nails through flat tin discs eight (8) inches from the upper edge on twelve (12) inch centers.

Mop back each lap for a distance of twenty-seven (27) inches with Koppers Steep Pitch.

2nd. (Spec. No. 26—15 year) Apply at right angles to the incline over the entire surface four (4) plies of Koppers Approved Tarred Felt, lapping each sheet twenty-seven and one-half (27½) inches. Nail each ply with one and one-half (1½) inch cut nails through flat tin discs nine and one-half (9½) inches from upper edge on twelve (12) inch centers.

Mop back each lap for a distance of twenty-five and one-half (25½) inches with Koppers Steep Pitch.

When nailing strips are used each ply of felt shall be secured with two (2) one (1) inch barbed roofing nails through flat tin discs at each nailing strip, placed seven and one-half (7½) and nine and one-half (9½) inches respectively from the upper edge of each sheet.

Pitch moppings between plies shall not extend beyond the lower edge of the overlying ply of felt, so that the finish felt surface is free of pitch. End strips shall not be applied over connecting plies of felt.

3rd. Pour or drip mop over the entire surface of the roofing membrane a uniform coating of approximately sixty (60) pounds of Koppers Steep Pitch, into which, while hot, immediately embed firmly not less than two hundred and seventy-five (275) pounds of clean, dry slag (three-sixteenth ($3/16$) to one-half (½) inch in size) for each one hundred (100) sq. ft.

In cold weather, slag shall be heated and dry before being applied. The finished slag surface shall be broomed lightly to remove slag.

General

At all ridges, for a distance of nine (9) inches on each side, pour a coating of steep pitch over slag and embed a second layer of slag.

Steep Pitch shall not be heated above three hundred seventy-five (375) degrees F., nor applied to roof at less than three hundred and twenty-five (325) degrees F.

Tarred Felt shall be laid without wrinkles or buckles.

At junction of steep and flat roofing, the roofing on the flat surfaces is to be carried up the inclined surface not less than twenty-four (24) inches before steep roofing is applied. Application of steep roofing shall start at the point of junction with the flat roof.

Extend slag stops one and one-half (1½) inches above roof deck.

Materials Required per 100 Sq. Ft.

MATERIAL	Spec. No. 14 (20 year)	Spec. No. 26 (15 year)
Tarred Felt	75 lbs.	60 lbs.
Steep Pitch	140 lbs.	120 lbs.
Slag	275 lbs.	275 lbs.

BRIEF SPECIFICATION

The roofing is to be applied by a roofing contractor approved by Koppers Company, Inc., who shall apply the roofing in strict accordance with Koppers Specifications (No. 14 for 20 years, No. 26 for 15 years) and requirements, and subject to Koppers inspection and approval. Upon completion of the work, the contractor is to furnish Koppers Roofing Bond to the owner.

Koppers Roofing Bonds furnished where Koppers Inspection Service is available.

FOR BONDED FLASHINGS, refer to pages 22-23.

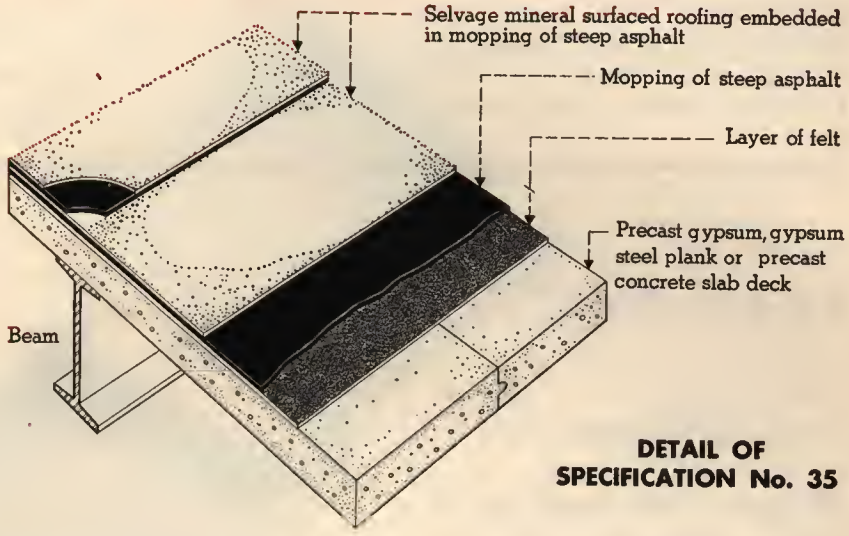
PRECAST GYPSUM, GYPSUM STEEL PLANK OR CONCRETE SLABS

STEEP ROOFS

MINERAL SURFACE
MAXIMUM INCLINE: 9 IN. PER FT.
MINIMUM INCLINE: 3 IN. PER FT.
PRECAST GYPSUM — GYPSUM STEEL PLANK OR PRECAST CONCRETE SLAB DECKS

15 year—Specification No. 34

10 year—Specification No. 35



DETAIL OF SPECIFICATION No. 35

SPECIFICATIONS (Select clauses as required. Optional clauses in color.)

Condition of Surface to Receive Roofing

Do not apply built-up roofing to any surface which is not reasonably smooth and free from projections or holes which might cause puncture of the membrane. Surface must be dry. Immediately before the application of the roofing, thoroughly clean the surface of dust and loose material. Concrete slabs not permitting nailing shall have creosoted nailing strips set flush with the surface, spaced three (3) feet apart and set parallel to the incline of the roof. All joints between precast concrete slabs shall be pointed up with plastic cement which shall be troweled so that the top surface is level with the deck.

Application of Roofing Materials

1st. (Spec. No. 34—15 year)

Apply at right angles to the incline over the entire surface, two (2) plies of Koppers Approved Tarred Felt, lapping plies nineteen (19) inches. Nail each ply of felt two (2) inches from upper edge eighteen (18) inches o.c., with one and one-half (1½) inch barbed roofing nails through flat tin discs (or with staples for gypsum decks).

Mop back each ply of felt for a distance of seventeen (17) inches with Koppers Steep Asphalt.

1st. (Spec. No. 35—10 year)

Apply at right angles to the incline over the entire surface, one (1) ply of Koppers No. 30 Tarred Felt, lapping ply four (4) inches. Nail each ply along lapped edge on eighteen (18) inch centers with one and one-half (1½) inch barbed roofing nails through flat tin discs (or with staples for gypsum decks).

When nailing strips are used, the felt shall be secured with three (3) one (1) inch barbed roofing nails through flat tin discs, two (2) inches, ten (10) inches, and eighteen (18) inches respectively from the upper edge at each nailing strip.

2nd. Beginning at the low point, thoroughly mop a portion of the tarred felt surface with Koppers Steep Asphalt, into which, while hot, embed a sheet of selvage edge mineral surface roofing, this to run across the slope of the roof. Selvage should be on upper edge. Nail in double staggered course along selvage with one (1) inch barbed roofing nails through flat tin discs, kept two (2) inches from the mineral surfacing and twelve (12) inches o.c. for each course. Mop the selvage of the sheet just laid and the adjacent area of tarred felt surface with Steep Asphalt and into this, while hot, embed thoroughly the next sheet of mineral surfaced roofing, taking care that the lower edge meets the edge of the mineral surfacing of the sheet below. Nail as described for previous sheet. Repeat the process of laying sheets of mineral surfaced roofing shingle fashion until the entire area has been covered. Lap ends six (6) inches, nailing the underlying sheet with six (6) one (1) inch barbed roofing nails through flat tin discs, starting one (1) inch from the lower edge, spaced five (5) inches o.c. Coat the underside of mineral surfaced roofing on each end lap with Steep Asphalt and firmly embed in the surface of the underlying sheet. Carefully rub down edges.

When nailing strips are installed, sheets shall be nailed along the selvage edge with three (3) inch nails driven through flat tin discs, spaced five (5) inches apart, at each nailing strip and set back two (2) inches from the mineral surface.

General

Mineral surfaced roofing is to be cut in strips not exceeding twenty (20) feet in length, prior to using, and is to be stacked flat for a sufficient time to permit these strips to become perfectly flat.

Tarred Felt and Mineral Surfaced Roofing should be laid without wrinkles or buckles.

Steep Asphalt shall not be heated above four hundred (400) degrees F.

At junction of steep and flat roofing, the roofing on the flat surface is to be carried up the inclined surface not less than twenty-four (24) inches before steep roofing is applied. Application of steep roofing shall start at the point of junction with the flat roof.

Materials Required per 100 Sq. Ft.

MATERIAL	Spec. No. 34 (15 year)	Spec. No. 35 (10 year)
Felt	30 lbs.	30 lbs.
Asphalt	90 lbs.	60 lbs.
Minerol Surfaced Roofing	110 lbs.	110 lbs.

BRIEF SPECIFICATION

The roofing is to be applied by a roofing contractor approved by Koppers Company, Inc., who shall apply the roofing in strict accordance with Koppers Specifications (No. 34 for 15 years, No. 35 for 10 years) and requirements, and subject to Koppers inspection and approval. Upon completion of the work, the contractor is to furnish Koppers Roofing Bond to the owner.

NOTE: Koppers Company, Inc., will issue roofing bonds where roofing is applied according to Specifications No. 34 and No. 35 only when applied in connection with flat bonded Koppers Roofing.

Koppers Roofing Bonds furnished where Koppers Inspection Service is available.

FOR BONDED FLASHINGS, refer to pages 22-23.

STEEL DECK WITH INSULATION

It is absolutely necessary to insulate steel decks in order to obtain a roofing bond.

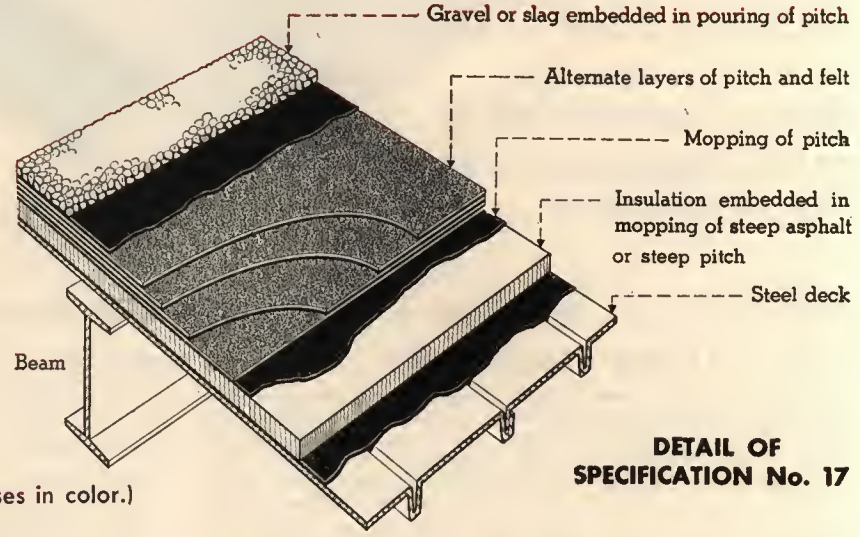
Because condensation quickly forms on all metals, steel decks should be covered with at least one thickness of rigid board insulation to protect the built-up roofing against the harmful effects of moisture. The insulation should be applied only when it is absolutely dry; applying or laying damp insulation will undoubtedly result in serious trouble. A steel deck should be cleaned smooth and properly anchored to the steel purlins and all joints correctly lapped. A shop coat applied before the steel is delivered to the job is recommended.

FLAT ROOFS

GRAVEL OR SLAG SURFACE
MAXIMUM INCLINE: 1 IN. PER FT.
STEEL DECK WITH INSULATION

20 year—4 ply—Spec. No. 17

15 year—3 ply—Spec. No. 18



DETAIL OF SPECIFICATION No. 17

SPECIFICATIONS

(Select clauses as required. Optional clauses in color.)

Condition of Surface to Receive Roofing

Steel roof decks shall be dry, clean and free from rust or oily substances. Immediately before the application of the insulation, thoroughly clean the surface of rust and loose material.

Application of Insulation and Roofing Materials

1st. Apply over the entire surface a mopping of Steep Asphalt or Steep Pitch, into which, while hot, embed the insulation, pressing firmly into the asphalt or pitch. The insulation must be thoroughly dry and of approved type and must be able to retain nails. When more than one (1) layer of insulation is used the top surface of each layer shall be coated with Old Style Pitch into which, while hot, embed the succeeding layer. (This is optional because layers may be laid dry if desired.) All joints shall be broken between the layers of insulation. All layers of insulation shall be parallel to preceding layers. Edges shall be brought closely together and shall not be forced into place. No more insulation shall be installed at any one time than can be protected by pitch and felt in case of sudden weather changes. Cut-offs consisting of two (2) plies of Tarred Felt and moppings of Steep Asphalt or Steep Pitch extending on to the deck at least six (6) inches and four (4) inches on top of the insulation shall be applied at the end of each day's work over exposed edges of insulation.

All edges of insulation adjoining parapet walls, cants, eaves, vertical surfaces, etc., shall be sealed by applying two (2) plies of Tarred Felt and moppings of Asphalt.

2nd. Mop a uniform coating of Koppers Old Style Pitch over the insulation preceding the application of roofing membrane.

3rd. (Spec. No. 17—20 year)

Apply over the entire surface, four (4) plies of Koppers Approved Tarred Felt, lapping plies twenty-seven and one-half (27½) inches.

Mop solidly between each 27½ inch lap with Koppers Old Style Pitch so that in no place shall felt touch felt.

3rd. (Spec. No. 18—15 year)

Apply over the entire surface, three (3) plies of Koppers Approved Tarred Felt, lapping plies twenty-four and two-third (24⅔) inches.

Mop solidly between each 24⅔ inch lap with Koppers Old Style Pitch so that in no place shall felt touch felt.

4th. Pour over the entire surface of the roofing membrane a uniform coating of approximately seventy-five (75) pounds of Koppers Old Style Pitch into which, while hot, embed not less than four hundred (400) pounds of one-quarter (¼) to five-eighth (⅝) inch clean dry gravel or three hundred (300) pounds of slag for each one hundred (100) sq. ft.

General

Pitch shall not be heated above three hundred seventy-five (375) degrees F. Tarred Felt shall be laid without wrinkles or buckles.

Gravel or slag shall be applied within eight (8) days after application of felts. During freezing weather, all exposed felts shall be either immediately graveled or slagged in, or, if this is impossible, exposed felt surfaces shall be glazed with a mopping of pitch.

Material Required per 100 Sq. Ft.

MATERIAL	Spec. No. 17 (20 year)	Spec. No. 18 (15 year)
Asphalt	25 lbs.	25 lbs.
Felt	60 lbs.	45 lbs.
Pitch	(*) 200 lbs.	(*) 175 lbs.
Slag	300 lbs.	300 lbs.
OR	OR	OR
Gravel	400 lbs.	400 lbs.

(*) When more than one layer of insulation is installed and pitch is mopped between layers, add 35 pounds per square for each mopping.

BRIEF SPECIFICATION

The roofing is to be applied by a roofing contractor approved by Koppers Company, Inc., who shall apply the roofing in strict accordance with Koppers Specifications (No. 17 for 20 years, No. 18 for 15 years) and requirements and subject to Koppers inspection and approval. Upon completion of the work, the contractor is to furnish Koppers Roofing Bond to the owner.

Koppers Roofing Bonds furnished where Koppers Inspection Service is available.

Koppers Company, Inc., will not be responsible for any damage to or below built-up roofing caused by or as the result of the use of insulation.

FOR BONDED FLASHINGS, refer to pages 22-23.

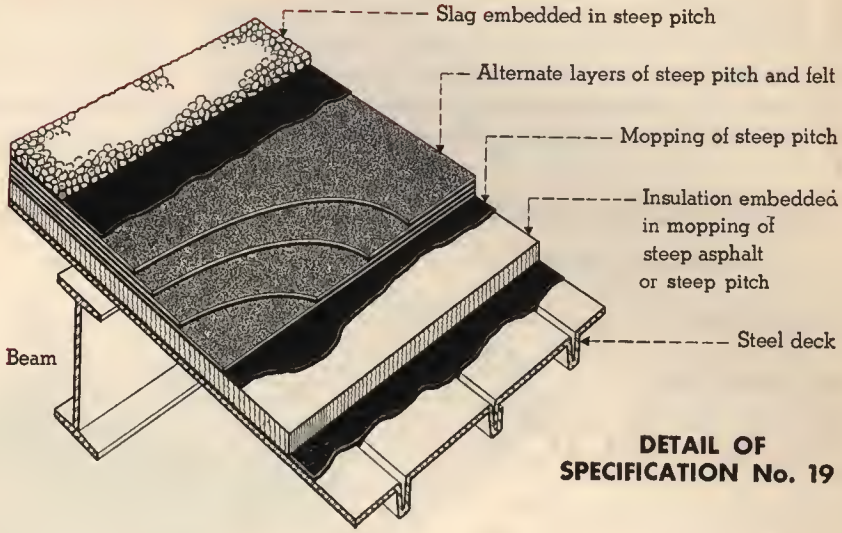
STEEL DECK WITH INSULATION (continued)

STEEP ROOFS

SLAG SURFACE
MAXIMUM INCLINE: 5 IN. PER FT.
MINIMUM INCLINE: 1 IN. PER FT.
STEEL DECK WITH INSULATION

20 year—4 ply—Spec. No. 19

15 year—3 ply—Spec. No. 36



DETAIL OF SPECIFICATION No. 19

SPECIFICATIONS (Select clauses as required. Optional clauses in color.)

Condition of Surface to Receive Roofing

(Same as described in Specification No. 17 and No. 18, page 14.)

Application of Insulation and Roofing Materials

1st. Apply over the entire surface a mopping of Steep Asphalt or Steep Pitch, into which, while hot, embed the insulation, pressing firmly into the asphalt or pitch. The insulation must be thoroughly dry and of an approved type and must be able to retain nails. Insulation shall be securely fastened to the deck by means of approved screws, expanding nails or cleats which shall be placed at each corner and at the center of each sheet of insulation. When more than one (1) layer of insulation is applied, fasteners shall be driven after the top layer has been applied. The top surface of each layer of insulation shall be coated with Steep Pitch into which embed the succeeding layers. (This is optional, because insulation sheets may be laid dry if desired.) All joints shall be broken between layers of insulation. All layers of insulation shall be parallel to succeeding layers. Edges shall be brought closely together and shall not be forced into place.

No more insulation shall be installed at any one time than can be protected by pitch and felt in case of sudden weother changes.

Cut offs consisting of two (2) plies of tarred felt and moppings of steep asphalt or steep pitch extending on to the deck at least six (6) inches and four (4) inches on top of the insulation, shall be applied at the end of each day's work over exposed edges of insulation.

All edges of insulation adjoining parapei walls, cants, eaves, vertical surfaces, etc., shall be sealed by applying two (2) plies of tarred felt and moppings of asphalt or pitch.

2nd. Mop a uniform coating of Koppers Steep Pitch over the insulation preceding the application of roofing membrane.

3rd. (Spec. No. 19—20 year)

Apply at right angles to the incline over the entire surface four (4) plies of Koppers Approved Tarred Felt, lapping plies twenty-seven and one-half (27½) inches.

Mop solidly each ply of felt the full 27½ inch lap with Koppers Steep Pitch.

3rd. (Spec. No. 36—15 year)

Apply at right angles to the incline over the entire surface three (3) plies of Koppers Approved Tarred Felt, lapping plies twenty-four and two-third (24⅔) inches.

Mop solidly each ply of felt the full 24⅔ inch lap with Koppers Steep Pitch.

Nail each ply of felt with nails of sufficient length to completely penetrate the insulation, but not long enough to puncture the steel deck. Nails to be through flat tin discs nine and one-half (9½) inches from upper edge and on twelve (12) inch centers.

Pitch moppings between plies shall not extend beyond lower edge of overlying ply of felt, so that the finished felt surface is free of pitch.

4th. Pour or drip mop over the entire surface of the roofing membrane a uniform coating of approximately 60 pounds of Koppers Steep Pitch into which, while hot, immediately embed firmly not less than two hundred seventy-five (275) pounds of clean, dry slag (from three-sixteenth ($\frac{3}{16}$) to one-half (½) inch for each 100 sq. ft.). In cold weather, slag shall be heated before being applied. The finished slag surface shall be broomed lightly to remove loose slag.

General

At all two way ridges, for a distance of nine (9) inches on each side, pour a coating of steep pitch over slag and embed a second layer of slag.

Steep Pitch shall not be heated above three hundred seventy-five (375) degrees F., nor applied to roof at less than three hundred twenty-five (325) degrees F. Tarred felt shall be laid without wrinkles or buckles.

At junction of steep and flat roofing the roofing on the flat surface is to be carried up the inclined surface not less than twenty-four (24) inches before the steep roofing is applied. Application of steep roofing shall start at the point of junction with the flat roof.

Extend slag stops one and one-hali (1½) inches above roof deck.

Material Required per 100 Sq. Ft.

MATERIAL	Spec. No. 19 (20 year)	Spec. No. 36 (15 yeor)
Asphalt	30 lbs.	30 lbs.
Tarred Felt	60 lbs.	45 lbs.
Steep Pitch	160 lbs.	140 lbs.
Slag	275 lbs.	275 lbs.

BRIEF SPECIFICATION

The roofing is to be applied by a roofing contractor approved by Koppers Company, Inc., who shall apply the roofing in strict accordance with Koppers Specifications (No. 19 for 20 years, No. 36 for 15 years) and requirements, and subject to Koppers inspection and approval. Upon completion of the work the contractor is to furnish Koppers Roofing Bond to the owner.

Koppers Roofing Bonds furnished where Koppers Inspection Service is available.

FOR BONDED FLASHINGS, refer to pages 22-23.

PROMENADE TILE SURFACING

Although it is practical to set promenade tiles in bitumen or mastic, it is not recommended if tile is to be exposed to long periods of sunlight since heat will cause the material to come up through the joints to the surface. This is not only expensive but difficult to remedy.

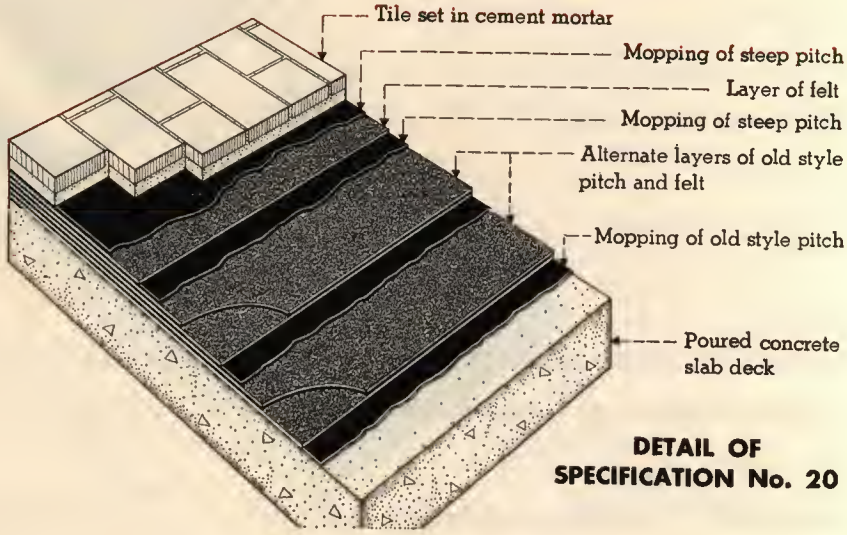
In order to insure against damage due to expansion and contraction, expansion joints should be provided for all surfaces exceeding 400 square feet.

After tile has been laid all traffic should be barred for at least 24 hours, after which the tile should be thoroughly scoured and flushed with water.

FLAT ROOFS

PROMENADE TILE SURFACING
MAXIMUM INCLINE: 1 IN. PER FT.
POURED CONCRETE DECKS

20 year—5 ply—Spec. No. 20



DETAIL OF SPECIFICATION No. 20

SPECIFICATIONS

Condition of Surface to Receive Roofing

Do not apply built-up roofing to any surface which is not smooth and free from projections and holes which might cause puncture of the membrane. Surfaces must be dry. Immediately before the application of the roofing, thoroughly clean the surface of dust and loose material.

Application of Roofing Material

1st. Mop deck completely with Koppers Old Style Pitch.

2nd. Apply over the entire surface two (2) plies of Koppers Approved Tarred Felt, lapping each ply nineteen (19) inches. Mop Koppers Old Style Pitch solidly between each 19 inch lap so that in no place shall felt touch felt.

3rd. Mop the entire surface of the first two plies of felt preceding the application of additional plies with Koppers Old Style Pitch.

4th. Apply over the entire surface two (2) plies of Koppers Approved Tarred Felt, lapping plies nineteen (19) inches. Mop Old Style Pitch solidly between each 19 inch lap so that in no place shall felt touch felt.

5th. Before laying the tile, the surface of the roofing shall be thoroughly cleaned and the roofing mopped with Steep Roof Pitch into which, while hot, embed one (1) layer of tarred felt, lapping each sheet two (2) inches over the preceding sheet. Over this surfacing and immediately preceding the laying of the tile, spread a heavy uniform coating of Steep Roofing Pitch. Only part of the roof surface shall be covered with the last ply of felt and mopping of pitch at one time, the tile then being laid over that portion at once.

6th. The vitrified clay tile shall be set in not less than three-quarter (¾) inches of Portland Cement Mortar (1 to 3 mix). The joints shall be grouted full with Portland Cement Mortar (1 to 2 mix). The tile shall be laid to show three-sixteenths ($^3/_{16}$) inch to one-fourth (¼) inch joints. Expansion joints three-quarters (¾) inch wide filled with plastic mixture, which must be approved by the architect, shall be provided between the tile and all flashings. Either metal or mastic expansion joints shall be provided throughout the roof surface as may be necessary. Expansion joints shall extend through to the roofing and shall be spaced not more than twenty (20) feet apart in any direction. They shall also be installed at all walls, skylights, curbs, etc.

General

Pitch shall not be heated above three hundred and seventy-five (375) degrees F.

Felt shall be laid without wrinkles or buckles.

All end laps shall be staggered at least six (6) inches.

Tile shall be applied within eight (8) days after application of felts. During freezing weather, exposed felt surfaces shall be glazed with a mopping of pitch.

Material Required per 100 Sq. Ft.

MATERIAL	Spec. No. 20 (20 year)
Old Style Pitch	125 lbs.
Steep Pitch	75 lbs.
Felt	75 lbs.

BRIEF SPECIFICATION

The roofing is to be applied by roofing contractor approved by Koppers Company, Inc., who shall apply the roofing in strict accordance with Koppers Specification No. 20, and requirements, and subject to Koppers inspection and approval. Upon completion of the work, the contractor is to furnish Koppers Roofing Bond to the owner.

Koppers Roofing Bonds furnished where Koppers Inspection Service is available.

Notice: Koppers Company, Inc., will not be responsible or liable for leaks due to the installation, contraction or expansion of Promenade Tile and will not be responsible for the taking up and replacing of tile in order to locate leaks through the roofing.

FOR BONDED FLASHINGS, refer to pages 22-23.

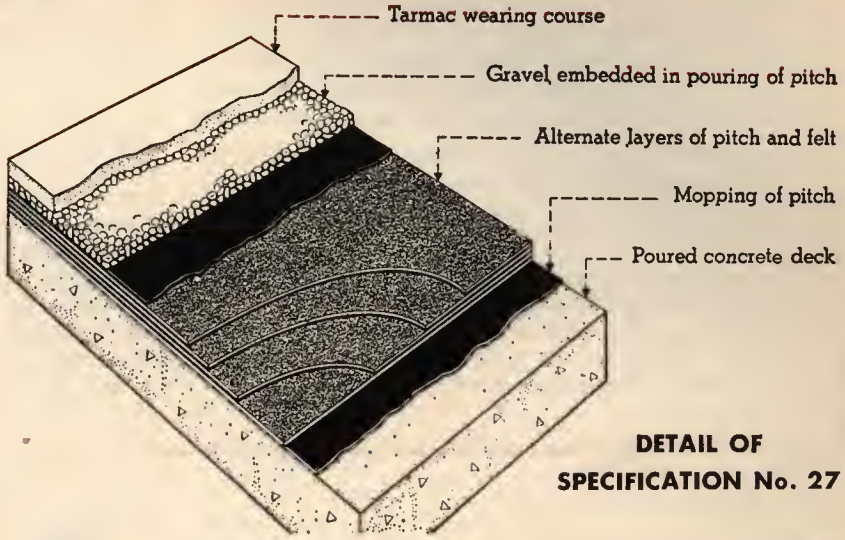
TARMAC CONCRETE WEARING SURFACE

Where it is desirable to utilize a roof deck for a parking area or similar purpose, Koppers Tarmac Concrete Wearing Surface should be installed. This provides a tough, durable mixture which is resilient, dustless, and unaffected by water or gasoline and oil drippings. It provides a sanitary and lasting surface. The roof deck should be of sufficient strength to permit compaction of the Tarmac Concrete with a power roller.

FLAT ROOFS

TARMAC WEARING TOP
MAXIMUM INCLINE: ½ IN. PER FT.
POURED CONCRETE DECKS

Specification No. 27 — 4 ply



DETAIL OF SPECIFICATION No. 27

SPECIFICATIONS

Condition of Surface to Receive Roofing

Do not apply built-up roofing to concrete surfaces which are not reasonably smooth and free from projections and holes which might puncture the membrane. All outlets shall be installed to sufficient height above the roof deck to permit placing around the outlets, the specified depth of Tarmac Concrete Wearing Surface over the membrane roofing. The outlets shall be suitably flanged and screened. When the roof deck is dry and immediately before the application of the membrane roofing, thoroughly clean all dust and loose material from the surface.

Application of Built-Up Roofing

1st. Mop deck completely with Koppers Old Style Pitch.

2nd. Apply over the entire surface four plies of Koppers Approved Tarred Felt, lapping plies twenty-seven and one-half (27½) inches. Mop solidly between each 27½ inch lap with Koppers Old Style Pitch so that in no place shall felt touch felt.

3rd. Pour over the entire surface of the roofing membrane a uniform coating of approximately eighty-five (85) pounds of Koppers Old Style Pitch, into which, while hot, embed not less than three hundred (300) pounds of clean dry one-quarter (¼) inch to five-eighths (⅝) inch gravel for each 100 sq. ft.

The gravel cover shall be spread directly from wheel barrows or from stock piles dumped on metal sheets or tarpaulins placed over the roofing membrane. No excess areas or ridges of pitch around the edges of the stock piles will be permitted.

Application of Tarmac Concrete Wearing Surface

1st. After the roofing gravel has been applied, sweep up and remove all excess loose gravel. Over this surface, apply the Tarmac Concrete Wearing Surface in two courses. The bottom or binder course, shall consist of a coarse mix spread to a compacted depth of 1½ inch, over which shall be placed the top coarse compacted to a depth of 1 inch.

2nd. Composition of Mixtures: The mixtures shall have the following composition:

	Binder Course Stone and Gravel; Slag		Top Course Stone and Gravel; Slag	
Tar Cement (Tarmac T-10, 11 or 12), percent by weight...	3.5– 5.5	4.5– 7.5	6.5– 8.5	8.0–11.0
Mineral Aggregate percent by weight	94.5–96.5	92.5–95.5	91.5–93.5	89.0–92.0

3rd. Grading of Aggregate: The mixtures, when tested by standard laboratory sieves with square openings, shall meet the following requirements:

	Binder Course	Top Course
Passing 1½ inch sieve.....	100	..
Passing 1 inch sieve, percent.....	75–100	..
Passing ½ inch sieve, percent.....	45–75	100
Passing ⅜ inch sieve, percent.....	..	85–100
Passing No. 4 sieve, percent.....	20–45	55–85
Passing No. 10 sieve, percent.....	10–30	35–65
Passing No. 40 sieve, percent.....	0–10	15–35
Passing No. 80 sieve, percent.....	0–5	7–20
Passing No. 200 sieve, percent.....	..	4–10

4th. Preparation of Mixtures: The materials shall be mixed in a modern mixing plant, which shall be equipped with approved weighing, heating and mixing facilities. The aggregate shall be heated and dried and enter the mixer at a temperature of 150°–225° F. The mixing plants shall be reasonably close to the job so that truck deliveries can be made to the job and the mixtures spread at a temperature of 150°–225° F.

5th. Placing Mixtures: The mixtures shall be placed on dumping boards or metal or metal sheets rather than dumped on the roof surface, and spread into place by means of shovels and rakes to the specified depth. The depth of the mixtures may be controlled by the use of cubical blocks. Adjacent to walls and curbs, the mixtures shall be spread uniformly high so that when compacted, they will be slightly higher than the rest of the surface.

6th. Compacting Mixtures: After spreading, the mixtures shall be compacted by means of a power driven roller weighing not less than 3 tons. The wheels of the roller shall be kept clean at all times. They may be kept moist with water or a mixture of water with not more than 10% lubricating oil. Rolling and compaction shall continue until the mix does not creep under the roller wheels. In all places inaccessible to the roller, the required compaction shall be obtained by hand tamps. If depressions remain after rolling, more mixture shall be added at such points and firmly rolled into place.

7th. Surface Tolerance: A standard ten-foot straight edge for checking the surface shall be used. The surface of the finished Tarmac Wearing Surface shall be such that it will not vary more than one-fourth (¼) inch from a ten-foot straight edge applied in any direction.

8th. Cement Dust: Apply cement dust lightly and uniformly over the Tarmac Wearing Surface and use stiff brooms to draw the cement dust into the surface.

FLASHINGS

All flashings shall be properly installed before the Tarmac Concrete Wearing Surface is applied and shall be adequately protected to prevent injury rfom traffic using the roof surface.

NOTE: It is recommended that the Contractor be approved by Koppers and that he sublet the Tarmac Concrete Wearing Surface to an approved paving contractor who has had experience with similar surfaces, and that the work be done under the general supervision of the approved contractor.

WATER COOLED ROOFS

A roof deck intended for spray pond or water cooling is preferably dead level but may have a slight incline providing that such slope does not exceed 1 inch per foot.

The specifications for Spray Pond roofing do not provide for the expansion due to ice formations in winter, it being assumed that the water will be drained from the roof when cold weather sets in. Provision could be made, however, if necessary, by installing flashings of the proper design to take care of this pressure.

Water cooled roofs operate on the principle that (1) water on the roof deflects the sun's rays and thereby cuts down summer heat within the building. (2) the evaporation of the water dissipates heat at the rate of 1,000 B.T.U. per pound of water.

Various tests show that water cooled roofs reduce the peak temperatures on the top floor of any building by 10° to 20° F. during the summer. A recent experiment showed that roof cooling would prevent 90% of the heat, due to solar radiation, from passing through roof surface into the building.

The water cooled roof may be used alone or in conjunction with air conditioning equipment. When it is an adjunct of an air conditioning system, less refrigeration will be required for cooling of the air within the structure. It should also be noted that it is possible to pipe the water required for cooling from the condenser to the roof and, if the water is expensive or scarce, it is practical to have it recycled to the air conditioning equipment.

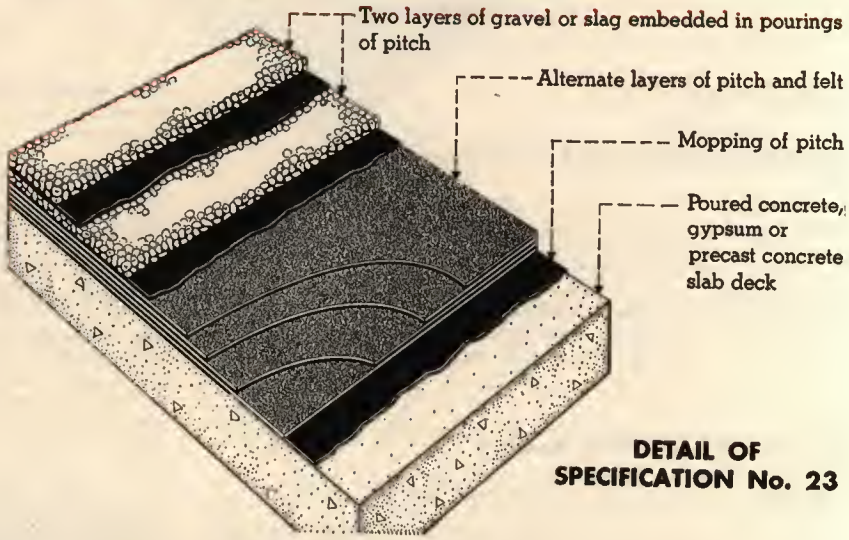
The roof should be kept wet or damp either by means of sprays or by allowing water to flow onto the surface of the roof and be retained to a certain level to form a "lake." In the warmest weather a spray system will require approximately ⅓ gallon of water per square foot per day for maximum cooling. On roofs where water is held to a specified height so as to completely cover the slag or gravel, the cooling efficiency will be less, due to the fact that the effective evaporative area has been decreased. Water cooled or spray pond roofs are similar in construction to slag or gravel roofs, with the exception that another layer of coal-tar pitch embedded slag or gravel is added.

SPRAY POND

OVER POURED CONCRETE, POURED GYPSUM, AND PRECAST CONCRETE SLAB PREFERABLY DEAD LEVEL MAXIMUM INCLINE: 1 IN. PER FT.

20 year—4 ply—Spec. No. 23

15 year—3 ply—Spec. No. 24



DETAIL OF SPECIFICATION No. 23

SPECIFICATIONS (Select clauses as required. Optional clauses in color.)

Condition of Surface to Receive Roofing

Do not apply built-up roofing to concrete surfaces which are not reasonably smooth and free from projections and holes which might cause puncture of the membrane. Surfaces must be dry. Immediately before the application of the roofing, thoroughly clean the surfaces of dust and loose material.

Application of Built-Up Roofing

1st. Mop deck completely with Koppers Old Style Pitch.

2nd. (Spec. No. 23—20 year) Apply over the entire surface four (4) plies of Koppers Approved Tarred Felt, lapping plies twenty-seven and one-half (27½) inches.

Mop solidly between each 27½ inch lap with Koppers Old Style Pitch so that in no place shall felt touch felt.

2nd. (Spec. No. 24—15 year) Apply over the entire surface three (3) plies of Koppers Approved Tarred Felt, lapping plies twenty-four and two-third (24⅔) inches.

Mop solidly between each 24⅔ inch lap with Koppers Old Style Pitch so that in no place shall felt touch felt.

All felt shall be turned up not less than four (4) inches at vertical surfaces.

3rd. Pour over the entire surface of the roofing membrane, a uniform coating of approximately eighty-five (85) pounds of Koppers Old Style Pitch, into which, while hot, embed not less than four hundred (400) pounds of clean dry gravel or three hundred (300) pounds of slag for each 100 sq. ft.

4th. All loose gravel or slag shall be swept from surface and a second uniform pouring of approximately ninety (90) pounds of Koppers Old Style Pitch shall be applied over the gravel or slag, into which, while hot, shall be applied a second layer of three hundred (300) pounds of gravel or two hundred (200) pounds of slag for each 100 sq. ft.

The entire surface shall then be thoroughly broomed free from all loose gravel or slag. It is advisable to roll the finished surface with a light roller so that aggregate is thoroughly embedded.

General

Pitch shall not be heated above three hundred seventy-five (375) degrees F.

WATER COOLED ROOFS (continued)

Tarred felt shall be laid without wrinkles or buckles.

Cant strips are required at all vertical surfaces.

At points where water pressure from the spray is excessive, the roof surface shall be protected with creosoted board platform or other suitable construction to break the force of the water. These platforms shall be laid on top of the roof surface and not fastened to the deck.

Material Required per 100 Sq. Ft.

MATERIAL	Spec. No. 23 (20 year)	Spec. No. 24 (15 year)
Pitch	300 lbs.	275 lbs.
Felt	60 lbs.	45 lbs.
Gravel	700 lbs.	700 lbs.
OR	OR	OR
Slag	500 lbs.	500 lbs.

BRIEF SPECIFICATION

The roofing is to be applied by a roofing contractor approved by Koppers Company, Inc., who shall apply the roofing in strict accordance with Koppers Specifications (No. 23 for 20 years, No. 24 for 15 years) and requirements, and subject to Koppers inspection and approval. Upon completion of the work, the contractor is to furnish Koppers Roofing Bond to the owner.

Koppers Roofing Bonds furnished where Koppers Inspection Service is available.

FOR BONDED FLASHINGS, refer to pages 22-23.

RE-ROOFING SPECIFICATIONS

Due to varying conditions of the roof deck and surface of the old roofing, it will be necessary for a representative of Koppers Company, Inc., to approve the type of specifications for re-roofing if a Koppers Roofing Bond is to be issued. However, in general we recommend the following practice and specifications for re-roofing work.

WHEN OLD ROOFING IS TO BE ENTIRELY REMOVED

Condition of Surface to Receive Roofing

If the old roofing membrane has disintegrated to the extent that it has little value, or if the deck and/or insulation will not render satisfactory service for the period expected of the new roofing, then all old roofing shall be entirely removed. Deck should then be made smooth and any places where it has disintegrated, or where lumber is defective, should be replaced.

Application of New Roofing

New built-up roofing shall then be applied according to the specification over the respective type of deck described in this Specification Book.

WHEN OLD ROOFING IS NOT TO BE REMOVED

Condition of Surface to Receive Roofing

If the deck and/or insulation is in satisfactory condition and will render service for the period expected of the new roofing, and the old roofing membrane can be made smooth and clean by the removal of slag, gravel, or excess asphalt coatings, it will not be necessary to remove old roofing. If new roofing is to be applied over old asphalt roofing, cut open all buckles and blisters, and remop, over which shall be applied 2 plies of Felt.

Before the application of new roofing, the surface of old roofing shall be made smooth and clean. In places where surface is slightly rough, a flood coat of Coal Tar Pitch (for pitch roofs), Asphalt (for asphalt roofs), may be applied to level the surface, or it may be advisable to apply rigid insulation set in Asphalt (over asphalt roofs and Pitch over pitch roofs) over the entire surface of the area to be re-roofed.

Application of New Roofing

Over Tarred Felt and Pitch Roofing

New roofing shall be applied according to Koppers Specifications for over Foured Concrete Decks with the exception that on Wood Decks, 2 plies of Dry Felt shall be applied at all places where there is a possibility of pitch seepage through the deck before the application of new built-up roofing.

Over Asphalt Roofing on Decks Where Nailing Is Possible

Roofing shall be applied according to Koppers Wood Deck Specifications with the exception that the red rosin paper is to be eliminated. If new insulation is installed, apply roofing according to Koppers Specification for over Poured Concrete Decks, setting insulation in asphalt.

Over Asphalt Roofing on Decks Where Nailing Is Not Possible

Roofing shall be applied according to Koppers Concrete Deck Specifications with the exception that each lower sheet of felt shall be strip mopped to the old roofing, and these strip moppings shall be not less than 6 inches apart. If new insulation is applied, set in mopping of asphalt to old roofing.

General

All flashing, vent pipes, skylights, ventilators, parapet walls, and copings shall be replaced or properly repaired so that they will render the same length of service as the new roofing.

NOTE: Koppers Company, Inc., Guarantee Bond does not cover roof insulation or failure of roof deck. The application of a Koppers Bonded Roof over an old roof or insulation shall not constitute a waiver of these conditions.

INSULATION SPECIFICATIONS

General

The following specifications for the installation of insulation are recommended so as to provide and insure the owner the maximum effect and life of the insulation.

The roofing insulation must be kept dry both before and after application.

Koppers Company, Inc., Guarantee Bond Covering Built-Up Roofing and Flashing does not cover roof insulation nor will Koppers Company, Inc., be responsible for any damage caused by or the result of the use of insulation.

WOOD NAILING STRIPS

The general contractor shall provide wood nailing strips which shall form a nailing base under all metal flashing aprons and flanges. Strips shall be the full thickness of the insulation and shall extend not less than one (1) inch beyond the apron or flange and shall be securely fastened to the roof deck.

CANT STRIPS

Cant strips on wood decks shall be set on top of the insulation and secured by nailing through the insulation to the deck. On noncombustible decks where the cant is formed with gypsum or concrete, a square shoulder the full thickness of the insulation at the bottom of the cant shall be formed.

NAILS

Nails shall be galvanized roofing nails driven through flat tin discs, or Simplex flat head roofing nails.

Nails for use with insulation shall be of sufficient length to pass through the insulation and penetrate into, but not through, the deck construction, with the exception that on steel decks where nailing is necessary, the nails shall be soft-nosed roofing nails which shall not penetrate the steel deck.

CUT-OFFS

Cut-offs consisting of two (2) plies of tarred felt and moppings of Old Style Pitch or Asphalt extending onto the deck at least six (6) inches and four (4) inches on top of the insulation, shall be applied at the end of each day's work over exposed edges of insulation. *When cork insulation is used, cut-offs should be removed when work is resumed, or should all run in one direction.*

All edges of insulation adjoining parapet walls, cants, eaves, vertical surfaces, etc., shall be sealed by applying two (2) plies of Tarred Felt and moppings of Pitch or Asphalt, except when cork insulation is used.

General Application of Insulation

Insulation must be thoroughly dry and of approved type, and must be able to retain nails.

No more insulation shall be laid at any one time than can be protected by pitch and felt in case of sudden weather changes.

Edges of insulation shall be brought closely together and shall not be forced into place. Where insulation joins vertical surfaces, the insulation shall be cut in a neat manner allowing at least one-half (½) inch clearance.

When more than one (1) layer of insulation is used, joints between layers shall be broken. All layers shall be parallel to preceding layers.

OVER WOOD, PRECAST GYPSUM, GYPSUM STEEL DECKS. FOR NORMAL CONDITIONS

Insulation Specification No. 200

Application of Insulation

The roof deck shall be covered with one (1) layer of red rosin sheathing paper weighing not less than five (5) pounds per one hundred (100) square feet. Sheathing paper shall be lapped two (2) inches and secured to the deck by occasional nailing. Over Precast Gypsum and Gypsum Steel Decks, sheathing paper may be omitted.

Sheathing paper may be omitted when insulation is laid in two (2) layers providing there are no pitch moppings between the layers.

On decks having inclines up to two (2) inches per foot, each sheet of insulation shall be secured to the deck by nails at each of the four corners and on inclines exceeding two (2) inches per foot, nails are to be spaced one (1) foot apart, and stagger nailed through the longitudinal center of each sheet. All nails shall penetrate the deck at least three-fourths (¾) inch. Nailing of two layers of insulation shall be through the second or top layer only.

Application of Roofing Above Insulation

If more than one layer of insulation is installed and joints broken or if ship-lap type is used, roofing above insulation shall be constructed according to Koppers Specifications No. 5, No. 6, No. 7, No. 8, No. 9, No. 32 or No. 33.

If only one layer of insulation is installed or if ship-lap type is not used, the roofing shall be applied according to Koppers Specifications No. 1, No. 2, No. 4, No. 30, No. 3, No. 25 or No. 31, on wood decks, with the exception that the red rosin paper may be omitted; and according to Specifications No. 12, No. 13, No. 14, No. 26, No. 34 or No. 35 on Precast Gypsum or Gypsum Steel Plank Decks.

OVER WOOD, PRECAST GYPSUM AND GYPSUM STEEL DECKS. FOR HIGH HUMIDITY

Insulation Specification No. 201

Application of Membrane Below Insulation

1. The wood roof deck shall be covered with one (1) layer of red rosin sheathing paper weighing not less than five (5) pounds per one hundred (100) square feet. The sheathing paper shall be lapped two (2) inches and secured to the deck by occasional nailing. On precast gypsum or gypsum steel plank, sheathing may be omitted.

2. Two full thicknesses of Tarred Felt shall be laid over the entire surface, lapping each sheet nineteen (19) inches over the preceding sheet and nailing as often as may be necessary to hold the sheets in place.

Extend all felts up vertical surfaces not less than eight (8) inches. After the insulation has been laid, turn these eight (8) inch extensions down over the exposed surface of the insulation and thoroughly mop with Old Style Pitch when installing flat roofs, and steep pitch when installing steep roofs.

Application of Insulation

1. Mop the entire surface with a uniform coating of Old Style Pitch into which, while hot, firmly embed the insulation. When roofs have an incline of from two (2) inches to five (5) inches per foot, use Steep Roofing Pitch.

2. On decks having inclines up to five (5) inches per foot, each sheet of insulation shall be secured to the deck by nails at each of the four corners, and on inclines exceeding five (5) inches per foot, nails are to be spaced one (1) foot apart along edges and stagger nailed through the longitudinal center of each sheet. All nails shall penetrate the deck at least three-fourths (¾) inch. Nailing of two layers of insulation shall be through the second or top layer only.

When insulation is laid in two layers, mop the entire surface of the first layer with Old Style Pitch on flat roofs and Steep Pitch on steep roofs into which, while hot, embed the second layer of insulation. (This is optional.)

Application of Roofing Above Insulation

Roofing shall be applied according to Koppers Specifications No. 5, No. 6, No. 7, No. 8, No. 9, No. 32 or No. 33.

INSULATION SPECIFICATIONS (continued)

OVER POURED CONCRETE, GYPSUM AND PRE-CAST CONCRETE SLAB. FOR NORMAL CONDITIONS

Insulation Specification No. 202

FOR FLAT DECKS

Application of Insulation

1. Apply a uniform coating of Old Style Pitch to the deck.

If precast concrete slab or tile deck, strip or spot mop with Old Style Pitch up to four (4) inches from the edge of each joint. While the pitch is hot immediately embed the insulation.

2. If there are two (2) layers of insulation, mop the entire first layer with Old Style Pitch into which, while hot, embed the second layer of insulation.

FOR STEEP DECKS (Incline 2 to 5 Inches per Ft.)

Application of Insulation

1. Apply a uniform coating of Steep Roofing Pitch to the deck into which, while hot, embed the insulation.

On precast tile or slab deck, spot or strip mop with Steep Roofing Pitch up to four (4) inches from the edge of each joint.

2. If there are two (2) layers of insulation, the entire first layer shall be coated with Steep Roofing Pitch into which, while hot, embed the second layer of insulation. Each sheet of insulation shall be secured in place by nailing. If two (2) layers of insulation are used nailing shall be through the top layer only. Nails shall be spaced one (1) foot apart and shall penetrate the deck at least three-quarters (¾) of an inch and shall be spaced along the edge and stagger nailed through the longitudinal center of each sheet of insulation.

When the deck will not permit nailing (which necessitates nailing strips), insulation shall be secured to each nailing strip with nails spaced approximately one (1) foot apart.

Application of Roofing Above Insulation

The roofing shall be applied according to Koppers Company, Inc.'s Specifications Nos. 5, 6, 7, 8, 9, 20, 23, 24 or 33.

OVER POURED CONCRETE, GYPSUM AND PRE-CAST CONCRETE SLAB FOR HIGH HUMIDITY

Insulation Specification No. 203

FOR FLAT DECKS

Application of Membrane Below Insulation

1. Apply a uniform coating of Old Style Pitch to the deck. On precast concrete slab or tile deck, spot or strip mop with Old Style Pitch up to four (4) inches from the edge of each joint.

2. Lay over the entire surface two (2) full thicknesses of Koppers Approved Tarred Felt, lapping each sheet nineteen (19) inches over the preceding sheet—mopping with Old Style Pitch the full nineteen (19) inches so that in no place shall felt touch felt.

3. Extend all plies of felt up vertical surfaces not less than eight (8) inches and after insulation has been installed turn this eight (8) inch extension down over the exposed edge of insulation and thoroughly mop with coal tar pitch.

Application of Insulation

Apply a uniform coating of Old Style Pitch over the entire surface into which, while hot, embed the insulation. If there are two (2) layers of insulation mop the entire surface of the first layer with Old Style Pitch into which, while hot, embed the second layer of insulation.

Application of Roofing Above Insulation

The roofing shall be applied according to Koppers Company, Inc.'s Specifications Nos. 5, 6, 7, 20, 23, or 24.

FOR STEEP DECKS (Incline 2 to 5 Inches per Ft.)

Application of Membrane Below Insulation

1. Apply a uniform coating of Steep Roofing Pitch to the deck. On precast concrete or tile, spot or strip mop with Steep Pitch up to four (4) inches from the edge of each joint.

2. Lay over the entire surface two (2) full thicknesses of Koppers Approved Tarred Felt at right angles to the incline of the roof lapping each sheet nineteen (19) inches over the preceding sheet.

Each sheet shall be nailed with one (1) inch barbed roofing nails through flat tin discs eight (8) inches from the upper edge and nails shall be spaced not more than one (1) foot apart. Where nailing strips are used the felt shall be nailed with two (2) nails through flat tin discs at each nailing strip placed six (6) inches and eight (8) inches respectively from the upper edge of each sheet.

3. Extend all plies of felt up vertical surfaces not less than eight (8) inches and after insulation has been installed turn this eight (8) inch extension down over the exposed edge of insulation and thoroughly mop with Steep Pitch.

Application of Insulation

Apply a uniform coating of Steep Roofing Pitch over the entire surface into which, while hot, embed the insulation. Each sheet of insulation shall be secured in place by nailing. Nails shall be spaced approximately one (1) foot apart and shall penetrate the deck at least three-fourths (¾) of an inch and shall be placed along edge and stagger nailed through the longitudinal center of each sheet of insulation.

When the deck will not permit nailing (which necessitates providing nailing strips), insulation shall be secured to each nailing strip with nails spaced approximately one (1) foot apart. Nailing of two layers of insulation shall be through the top layer only. Do not nail the first layer.

Application of Roofing Above Insulation

The roofing shall be applied according to Koppers Company, Inc.'s Specifications Nos. 8 and 32.

OVER STEEL DECKS FOR HIGH HUMIDITY

Insulation Specification No. 204

NOTE: Koppers Company, Inc., will not bond roofing over steel decks unless the steel deck is insulated.

Application of Membrane Below Insulation

1. Mop the steel deck with Steep Asphalt.

2. Lay over the entire surface two (2) full thicknesses of fifteen (15) pound Asphalt Felt, lapping each sheet nineteen (19) inches over the preceding sheet, mopping with Steep Asphalt the full width of the nineteen (19) inch lap.

Extend all felts up on vertical surfaces not less than eight (8) inches. After the insulation has been laid turn these eight (8) inch extensions down over the exposed surface of the insulation and thoroughly mop with Old Style Pitch when installing flat roofs and Steep Pitch when installing Steep Roofs.

Application of Insulation

Apply a uniform coating of Steep Asphalt into which, while hot, embed the insulation.

When more than one (1) layer of insulation is applied, the top surface of each layer shall be coated with Steep Asphalt into which, while hot, embed the succeeding layer.

When the incline of the roof exceeds one (1) inch per foot, the insulation shall be secured to the deck through the top layer with the proper devices provided by the deck manufacturer.

Application of Roofing Above Insulation

The roofing shall be installed according to Koppers Company, Inc.'s Specifications Nos. 17, 18, 19 or 36 above insulation.

OVER FOAMGLASS INSULATION

Application of roofing to be the same as over other types of rigid insulation on flat roofs where nailing is not necessary. We will not bond roofing when nailing of insulation or felts over insulation is required.

OVER CONCRETE VERMICULITE INSULATION

When the mix has had sufficient time to set up to withstand normal traffic (subject to Koppers approval) roofing shall be applied according to Specifications Nos. 12, 13 with the exception that nails shall not be used and first two plies of felt shall be secured by spot mopping or sprinkling of pitch.

KOPPERS FLASHING

Flashings should be installed at all intersections formed by vertical surfaces, at all changes of pitch, and wherever stacks, chimneys or other structures penetrate the roof. Their importance cannot be stressed too strongly—the value of a good roof installation will be completely lost if inadequate or poorly installed flashings are employed.

Koppers flashings are an integral part of a Koppers roof. Designed for flexibility so that slight movements do not dislodge them and fastened securely to the wall, they give many years of service.

Flashing is not only affected by expansion and contraction of the material itself, but also by the expansion and contraction of the construction to which it is attached. In addition, the effects of disintegration and its resulting harm to the flashing adhesion must be taken into consideration since this action will eventually separate flashing from the wall. For this reason it is particularly important that the top edges of the flashing be protected by counter-flashing which will insure a diversion of the water away from any opening that might develop between flashing and wall.

ROOFING AND FLASHING BRIEF SPECIFICATION

Flashing and roofing shall be installed by a roofing contractor approved by Koppers Company, Inc., and he shall apply the roofing and flashing in strict accordance with Koppers Specifications and requirements for 10, 15 or 20 year bonds, and subject to Koppers inspection and approval. Upon completion of the work, the contractor is to furnish Koppers Roofing and Flashing Bond to the owner.

The flashing can be bonded for no longer period than the roof is bonded.

COMPOSITION BASE AND METAL CAP FLASHINGS

20 year—Specification No. 107 15 year—Specification No. 106

Application

Extend plies of roofing felts and pitch mopping up all walls, parapets and curbs for a distance of two (2) inches above cant strip.

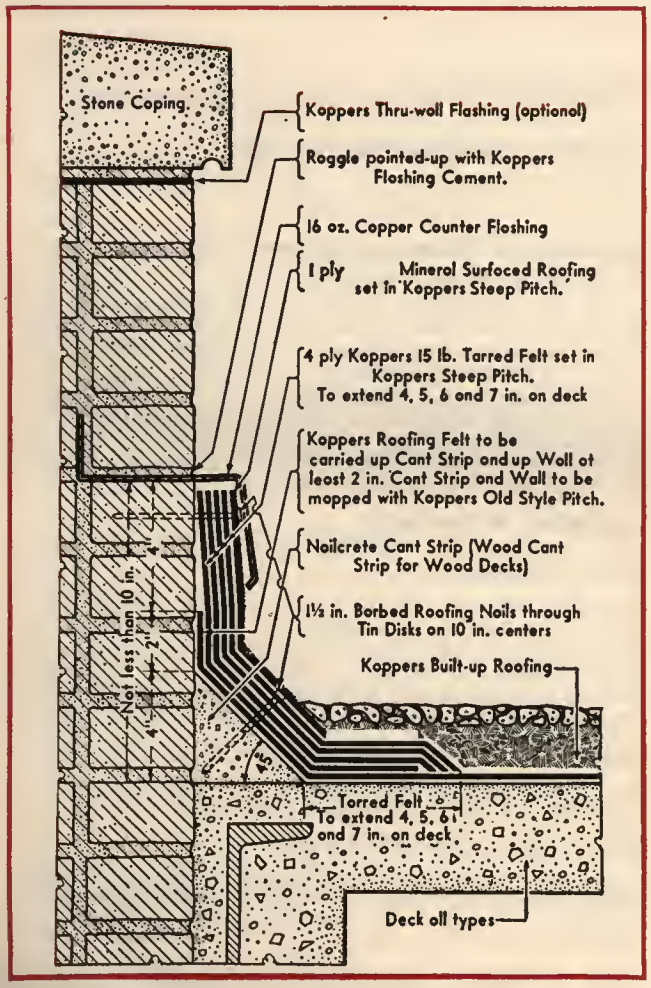
A raggle not less than ten (10) inches above the roof deck is to be provided.

Mop on with Koppers Steep Pitch a strip of tarred felt extending from the raggle of not less than two (2) inches on the roof deck.

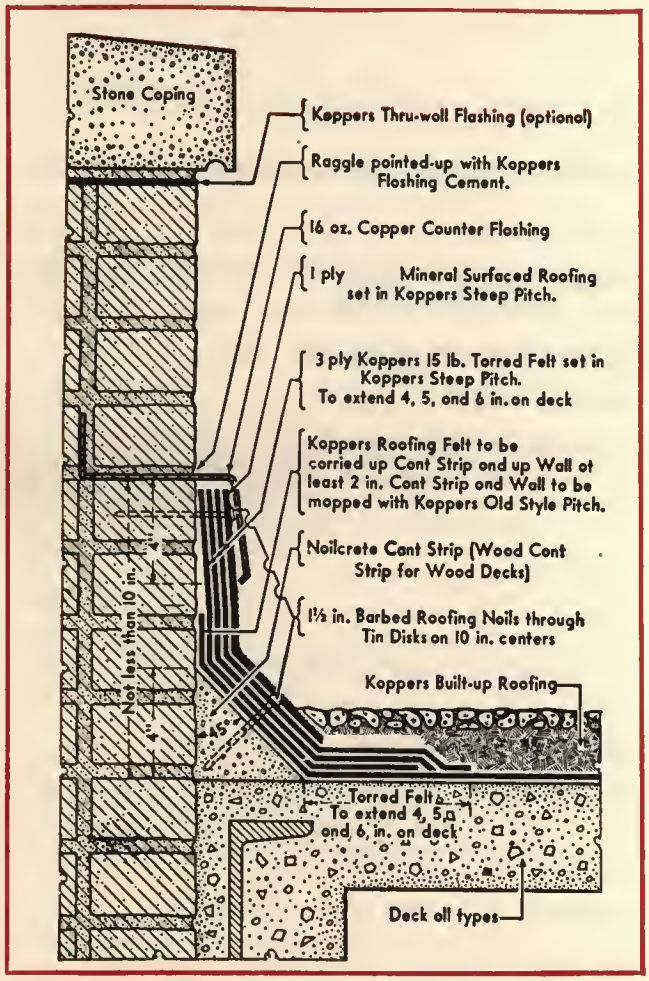
On top of this apply a second strip of tarred felt with moppings of hot Steep Pitch, extending the felt onto the roof deck one (1) inch beyond the preceding strip. Mop on additional strips in a similar fashion until a four ply 20 year Specification No. 107 or a three-ply 15 year Specification No. 106 reinforcement has been obtained.

Nail the top ply of flashing reinforcement on center line of cant with one and one-half (1½) inch barbed roofing nails through flat tin discs on ten (10) inch centers.

(Continued next page)



Koppers 20-Year Bonded Flashing
Specification No. 107



Koppers 15-Year Bonded Flashing
Specification No. 106

We suggest that when it is impossible to obtain the type or grade of metal indicated in our flashing specifications, or drawings, you substitute whatever type is available.

FLASHINGS SPECIFICATIONS (continued)

Mop on with hot steep roofing pitch a strip of 85 pound mineral surface roofing felt of sufficient width to extend from the raggle to the surface of the deck. Nail with one and one-half (1½) inch barbed roofing nails through flat tin discs at upper edge approximately ten (10) inches o.c. (For brick construction, nail into vertical mortar joints. For concrete construction nail to creosoted wood nailing strips set in flush with the surface.)

Tarred Felt or mineral surface roofing felts are not to exceed ten foot three inches (10' 3") in length. Ends of connecting strips are to overlap three (3) inches and are to break at least twenty-four (24) inches with end laps of underlying strip. End laps shall be thoroughly mopped with steep pitch.

All plies of felt shall be firmly pressed into moppings of steep pitch so that there will be no wrinkles in the finished surface.

Metal Cap Flashing (Not Bonded)

Metal cap flashing is to be inserted in the raggle immediately upon completion of base flashings. The cap flashing is to extend onto the raggle not less than two (2) inches and is to have not less than a four (4) inch exposed apron extending down over base flashing.

Completely fill raggle groove with Koppers Flashing Cement.

NOTE: If a Koppers 10, 15 or 20 year Flashing Bond is required, the flashing must be installed in connection with a Koppers Bonded Roof. The flashing can be bonded for no longer period than the roof is bonded.

COMPOSITION BASE AND METAL CAP FLASHING

10 year—Specification No. 101

Application

Extend plies of roofing felts and pitched moppings up all walls, parapets and curbs for a distance of not less than six (6) inches above the roof deck.

A raggle of not less than ten (10) inches above the roof deck is to be provided.

Mop on with Koppers Steep Roofing Pitch a strip of Tarred Felt extending from a height of not less than ten (10) inches on the perpendicular surface to four (4) inches out on the roof deck. On top of this apply a second strip of tarred felt with moppings of hot steep roofing pitch, extending the roofing felt onto the roof deck one (1) inch beyond the preceding strip.

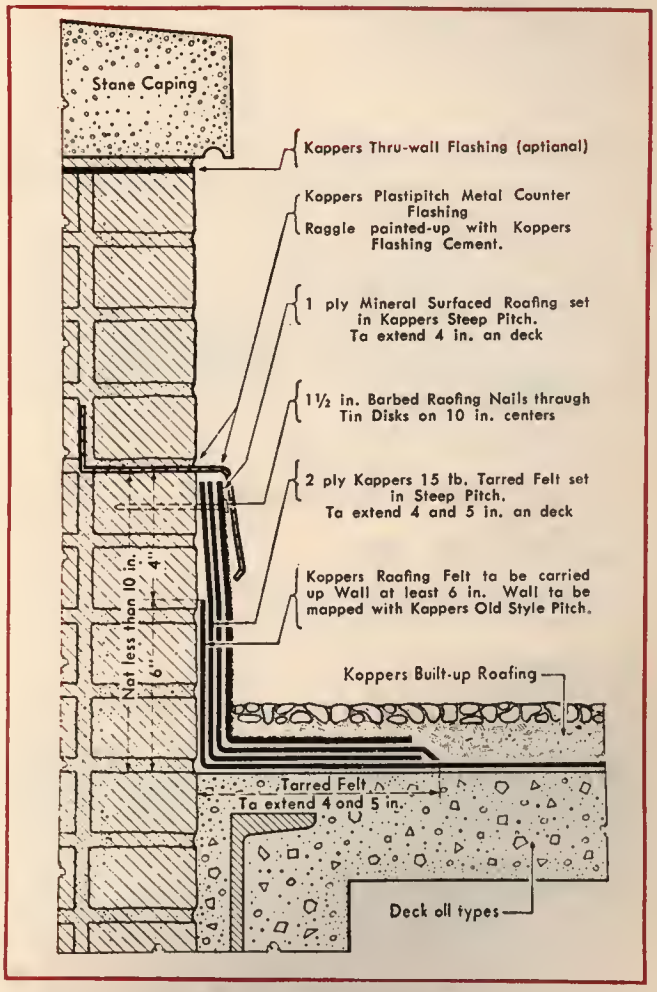
Mop on with Hot Steep Roofing Pitch a strip of 85 pound mineral surface roofing felt of sufficient width to extend from the raggle to the surface of the deck. Nail with one and one-half (1½) inch barbed roofing nails through flat tin discs at upper edge approximately ten (10) inches o.c.

(For brick construction, nail into vertical mortar joints. For concrete construction, nail to creosoted wood nailing strips set in flush with the surface.)

Tarred felt or mineral surface roofing felts are not to exceed ten foot three inches (10' 3") in length. Ends of connecting strips are to overlap three inches and are to break at least twenty-four (24) inches with end laps of underlying strips. End laps shall be thoroughly mopped with steep pitch.

Koppers Plastipitch Metal Cap Flashing

A Plastipitch metal cap flashing is to be inserted in the raggle immediately upon completion of base flashing. The cap flashing is to extend into the raggle not less than two (2) inches and is to have not less than a four (4) inch exposed apron extending down over the base flashing. Completely fill the raggle groove with Koppers flashing cement.



Koppers 10-Year Bonded Flashing Specificotion No. 101

METAL CAP AND BASE FLASHING (Not Bonded)

Specification No. 100

Where a metal base flashing is used, felt reinforcement at all wall angles, skylight curbs and other vertical surfaces shall be installed as follows before metal base flashing is installed.

For Wood and Precast Gypsum Decks:

Extend first two (2) plies of dry roofing felt up vertical surfaces for a distance of not less than four (4) inches and cut off the remaining plies at the angle of the roof deck.

For Concrete or Poured Gypsum Decks:

Terminate plies of roofing membrane at vertical surfaces.

Mop on with Koppers Steep Pitch a strip of tarred felt extending from a distance of not less than six (6) inches (or the height of the raggle) up the perpendicular surface to not less than four (4) inches out on flat roofing membrane. On top of this apply a second strip of tarred felt set in mopping of steep roofing pitch, extending not less than one (1) inch beyond edge of preceding strip. If 5 ply flat roofing is installed, a third reinforcing ply of felt set in steep pitch is to be applied. *(Continued next page)*

We suggest that when it is impossible to obtain the type or grade of metal indicated in our flashing specifications, or drawings, you substitute whatever type is available.

FLASHINGS SPECIFICATIONS (continued)

Mop the surface of last ply immediately before installing metal base flashing so that metal base flashing is set in hot pitch.

All end joints of reinforcing plies shall break joints and all end laps shall be thoroughly mopped.

Installation of Metal Base and Counter Flashing

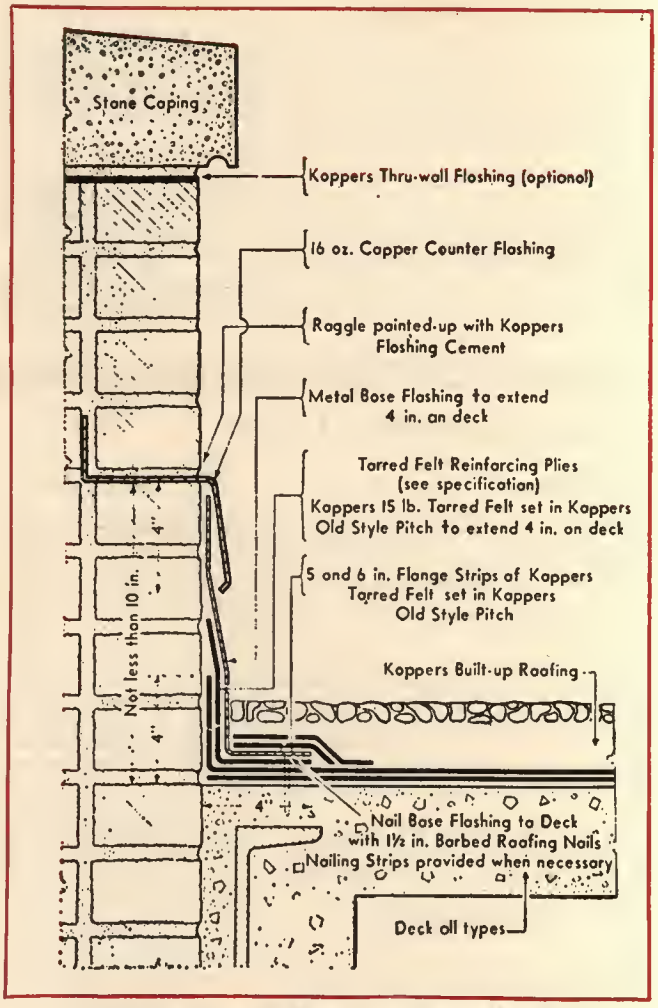
A raggle not less than ten (10) inches above the roof deck is to be provided.

The metal base flashing shall extend up the vertical surface not less than ten (10) inches and onto the roof deck not less than four (4) inches. Nail base flashing to the deck with one and one-half (1½) inch barbed roofing nails one (1) inch from outer edge of metal flange on four (4) inch center. For concrete deck, a nailing strip of creosoted wood shall be set in the concrete flush with the surface.

Over the part of the metal base flashing extending onto the roof, apply two (2) strips of tarred felt with alternate moppings of roofing pitch. The top strip is to extend two (2) inches beyond the lower strip and both are to be not less than double the width of the flange.

Metal cap flashing shall be installed immediately so as to prevent seepage of water behind base flashing.

Metal cap flashing shall extend into the raggle not less than two (2) inches and shall have a four (4) inch exposed apron extending down over the top edge of metal base flashing. After the metal cap flashing has been installed, completely fill the raggle groove with Koppers flashing cement.



Koppers Flashing Specification No. 100 (Not Banded)

RAGGLE BLOCK FLASHING

Specification No. 102

Raggle block shall be installed so that the raggle groove is in direct line with the cant strip. (See drawing.)

Application

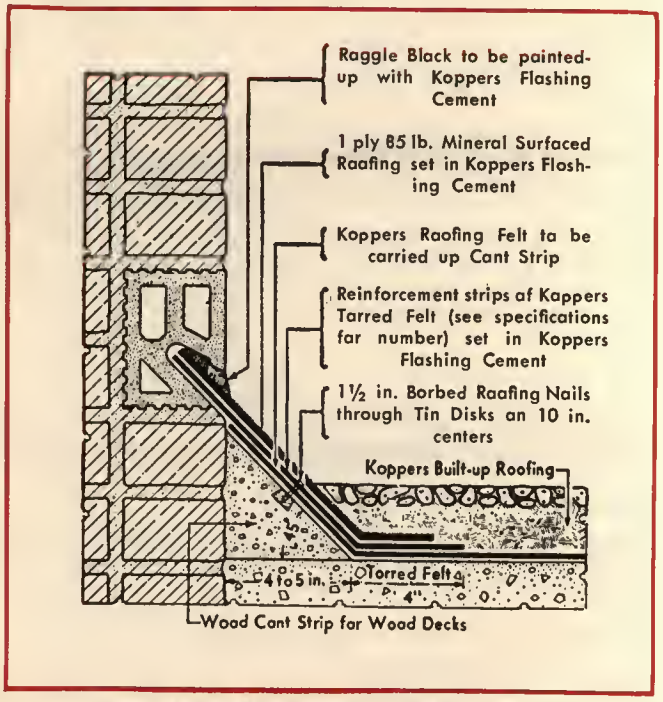
Extend all plies of roofing felt and moppings of pitch up the cant to the wall angle.

Remove all foreign material from groove in raggle block. Trowel with Koppers Flashing Cement the underside of a strip of tarred felt (extending from two (2) inches out on the roof deck into the full depth of the raggle groove) and immediately press into place. On top of this apply a second strip of tarred felt and troweling of Flashing Cement. Trowel on additional plies until a 3 ply (for 15 year type) or 4 ply (for 20 year type) reinforcement has been completed. Each reinforcement ply shall extend beyond lower ply onto the roof deck. Nail the top ply of flashing reinforcement with one and one-half (1½) inch barbed roofing nails through flat tin discs on ten (10) inch centers in middle of cant. Apply into Koppers Flashing Cement a strip of 85 pound mineral surface roofing felt of sufficient width to extend not less than three (3) inches out on the roof deck and into the full depth of the raggle groove. Fill raggle completely with Koppers Flashing Cement.

Tarred Felt and mineral surface roofing shall be free from wrinkles.

The strips of Mineral Surfaced Roofing shall be cut from across the roll so that the end of each strip shall have a two (2) inch selvage. The two (2) inch selvage shall be coated with Flashing Cement and shall be overlapped by the overlying sheet and be thoroughly pressed into place.

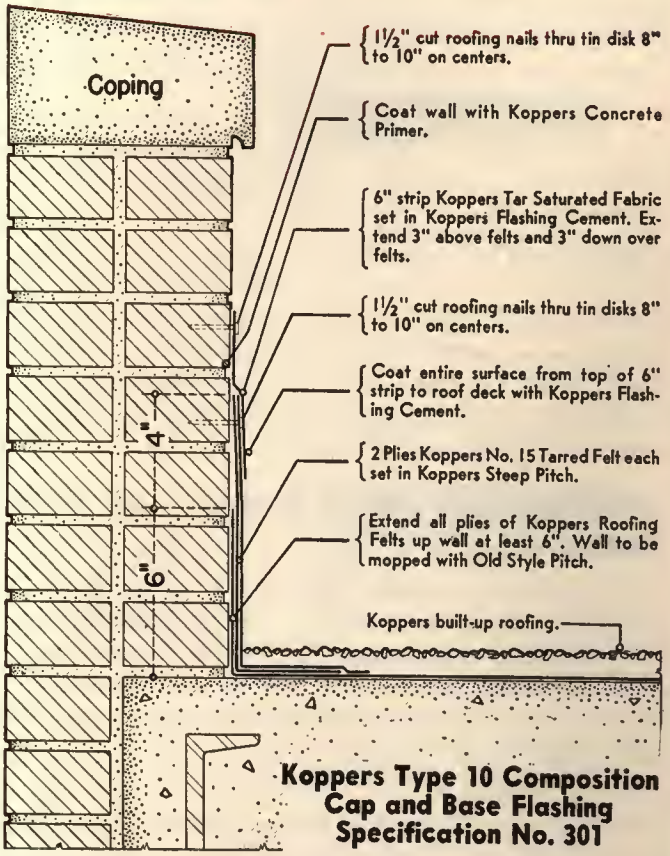
NOTE: If a Koppers 10, 15 or 20 year Flashing Bond is required, the flashing must be installed in connection with a Koppers Bonded Roof. The flashing can be bonded for no longer period than the roof is bonded.



Koppers Roggle Block Flashing Specification No. 102

We suggest that when it is impossible to obtain the type or grade of metal indicated in our flashing specifications, or drawings, you substitute whatever type is available.

KOPPERS NO-METAL FLASHINGS



Koppers Type 10 Composition Cap and Base Flashing Specification No. 301

OTHER FLASHINGS

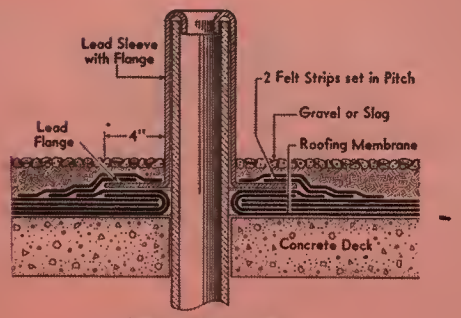
SPECIFICATIONS FOR FLASHINGS ON VENT PIPES, STACKS, FLAGPOLES, AND OTHER PROJECTIONS.

All (. . . vent pipes . . . stacks . . . flagpoles . . . or other projections . . .) penetrating the built-up roofing, whether indicated on drawings or not, are to have a proper metal (. . . sleeve flashing with flange . . . pan flashing with flange . . . or . . . other flanged flashing . . .) installed.

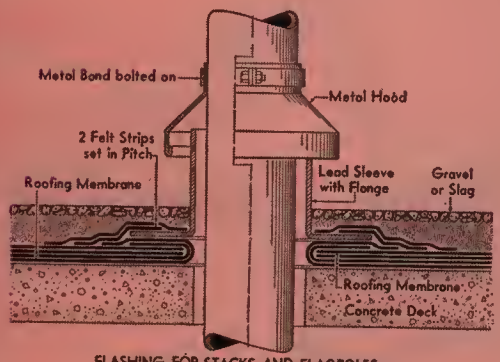
The sheet metal flange is to be cemented to the surface of the felt with a mopping of hot coal-tar pitch. Over flange apply, with alternate moppings, 2 reinforcing plies of tarred felt so that the first extends not less than three (3) inches beyond the outer edge of the flange and the second not less than six (6) inches. See detail, this page.

SPECIFICATIONS FOR FLASHINGS ON STUB COLUMNS.

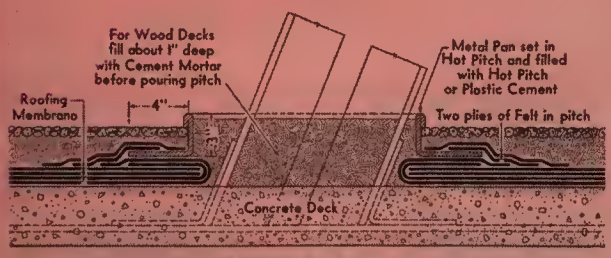
Exposed surface of all stub column projections are to be protected with 3 plies of tarred roofing felt cemented on with a trowel application of Flashing Cement. Felt is to be carried out onto the surface of the roofing felts so that the first extends not less than



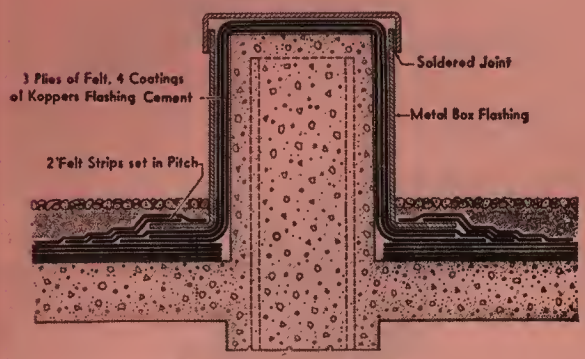
FLASHING FOR VENT PIPES



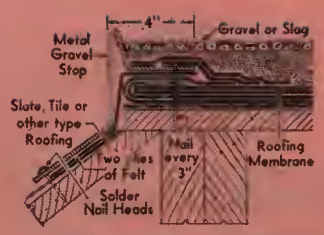
FLASHING FOR STACKS AND FLAGPOLES



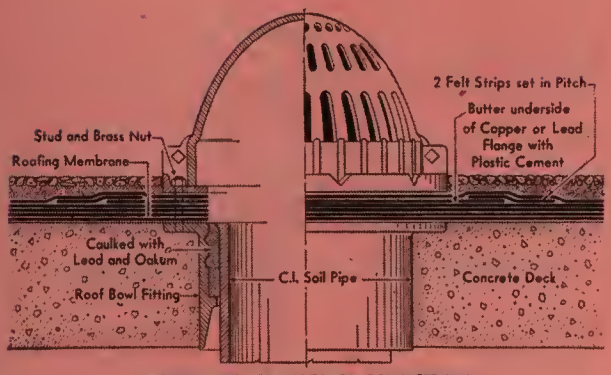
PITCH POCKETS FOR SIGN SUPPORTS AND ANGLE IRONS



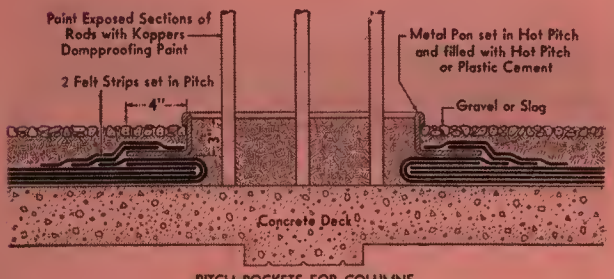
METAL CASING FOR STUB COLUMNS



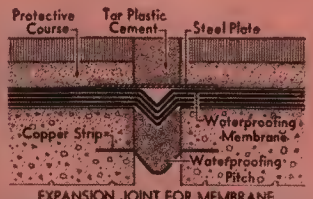
DETAIL OF FLAT AND SLOPING ROOF CONNECTION



ROOF DRAIN FOR WOOD OR CONCRETE DECK



PITCH POCKETS FOR COLUMNS



EXPANSION JOINT FOR MEMBRANE WATERPROOFING AND PROMENADE TILE ROOFS

three (3) inches, the second not less than four (4) inches, and the third not less than five (5) inches.

Trowel over the entire surface of felts just applied, one (1) coat of Flashing Cement.

All stub column projections are to have a metal box flashing with flange furnished and installed over the cemented felts.

The flange of the metal box flashing is to be cemented to surface of the roofing felts with a mopping of hot coal-tar pitch. Over the flange apply with alternate moppings, 2 reinforcing plies of tarred felt so that the first extends not less than three (3) inches beyond the outer edge of the flange, and the second not less than six (6) inches. See detail, page 25.

SPECIFICATIONS FOR FLASHINGS ON ROOF DRAINS.

The sheet metal flange furnished with the drain is to be cemented to the surface of the felt with hot coal-tar pitch or flashing cement. Over the flange apply with alternate moppings or trowelings 2 reinforcing plies of tarred felt so that the first extends not less than three (3) inches beyond the outer edge of the flange, and the second not less than six (6) inches.

Roof drains should be of a type provided with a wide lead or copper flange. Strainer construction should provide adjustment for meeting variations in roof level or slope. See detail, this page.

SPECIFICATIONS FOR FLASHINGS ON PITCH POCKETS FOR FUTURE COLUMNS.

At all locations where future columns are to penetrate built-up roofing, pitch pockets are to be provided with a flanged metal pan.

The sheet metal flange is to be cemented to the surface of the felt with flashing cement. Over the flange apply, with alternate moppings, 2 reinforcing plies of tarred felt so that the first extends not less than three (3) inches beyond the outer edge of the flange and the second not less than six (6) inches.

Fill metal pan with hot coal-tar pitch or flashing cement. Paint exposed sections of all reinforcing rods with dampproofing paint. See detail, this page.

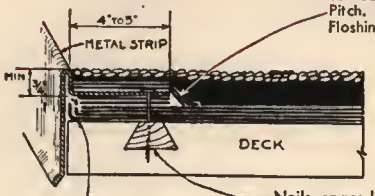
SPECIFICATIONS FOR EXPANSION JOINTS

Membrane waterproofing is to be applied on all expansion joints. Membrane is to be supported top and bottom by metal or other stable construction designed to meet the service conditions. Sheet copper pan (illustrated in drawing) is to be cast in place when the slab is poured. Where this is not feasible the copper may be set on top of the slab, directly under the membrane.

KOPPERS FINISHING STRIP

FOR GRAVEL AND SLAG ROOFING WITHOUT INSULATION

EAVE # 1000



5" and 6" flange strips of Koppers No. 15 Tarred Felt embedded in Koppers Old Style Pitch. (On No. 1001, embed in Koppers Flashing Cement.)

Slag embedded in Koppers Steep Pitch.

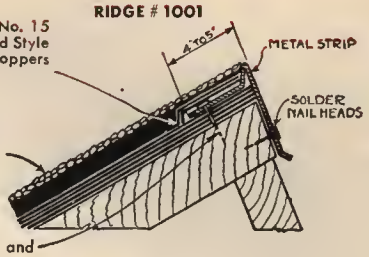
FLAT ROOFS

Nails, spaced 1" from edge of metal strip and 3" apart.

Creosoted wood nailing strip furnished when deck does not permit nailing.

Two lower plies of roofing felt are to be turned up over top plies of felt and run back on deck at least five inches.

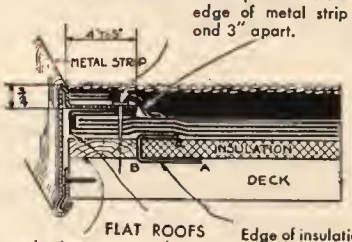
RIDGE # 1001



FOR GRAVEL AND SLAG ROOFING WITH INSULATION

EAVE # 1002

Nails spaced 1" from edge of metal strip and 3" apart.



FLAT ROOFS

Creosoted edging strip. See note opposite.

Two lower plies of roofing felt are to be turned up over top plies of felt and run back on deck at least 5".

Edge of insulation to be sealed with 2 plies tarred felt strips, extending 6" under insulation and 5" over insulation.

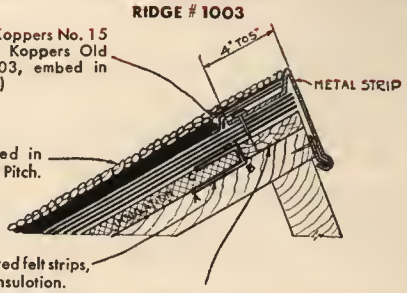
With concrete, poured gypsum, precast concrete and book tile decks, mop with pitch from points A to C. On steel decks with Koppers Type S Asphalt.

With wood and precast gypsum decks, mop with pitch from points B to C and nail felt strips securely to deck.

When there is waterproofing under insulation, extend waterproofing plies of felt and moppings of pitch so that they can be turned back over the top of insulation 5".

RIDGE # 1003

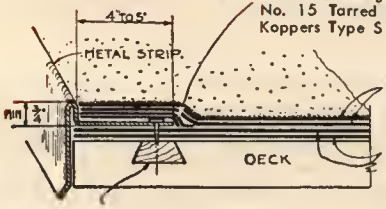
5" and 6" flange strips of Koppers No. 15 Tarred Felt embedded in Koppers Old Style Pitch. (On No. 1003, embed in Koppers Flashing Cement.)



Note: Creosoted wood edging strip securely fastened to deck cut to the same width as metal flange and the thickness of the insulation.

FOR MINERAL SURFACED ROOFING WITHOUT INSULATION

SIDE EAVE # 1004



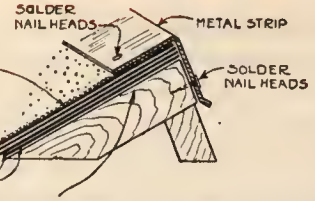
5" and 6" flange strips of Koppers No. 15 Tarred Felt embedded in Koppers Type S Asphalt.

Mineral surfaced roofing embedded in Koppers Type S Asphalt.

Two ply Koppers No. 15 Tarred Felt nailed to deck in the case of wood or precast gypsum decks. 1 ply felt embedded in Koppers Type S Asphalt in the case of concrete, poured gypsum, steel deck, etc.

Nails spaced 1" from edge of metal strip and 3" apart. Creosoted wood nailing strip furnished when deck does not permit nailing.

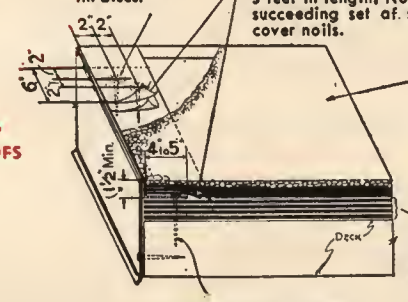
RIDGE # 1005



Creosoted wood nailing strip furnished when deck does not permit nailing

FOR STEEP SLAG ROOFS

SIDE EAVE #1008



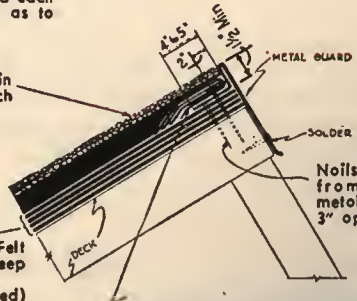
5" and 6" flange strips of Koppers No. 15 Tarred Felt embedded in Koppers Steep Pitch. Strips to be 3 feet in length. Nailed to deck as shown and each succeeding set of strips to lap over 6" so as to cover nails.

Slag embedded in Koppers Steep Pitch

Koppers No. 15 Tarred Felt embedded in Koppers Steep Pitch. (No. of plies as specified)

Nails spaced 1" from edge of metal guard and 3" apart.

RIDGE #1009



Nails spaced 1" from edge of metal guard and 3" apart.

12" and 14" flange strips of Koppers No. 15 Tarred Felt embedded in Koppers Steep Pitch. Folded in half and the underside of the fold nailed through tin discs spaced 1" apart as shown with the top side turned down so as to cover the nail head with two plies of felt and moppings of pitch.

We suggest that when it is impossible to obtain the type or grade of metal indicated in our flashing specifications, or drawings, you substitute whatever type is available.

WATERPROOFING-DAMPPROOFING

GENERAL

1. WATERPROOFING is employed to prevent water under pressure from entering the building or to resist the erosive action of running water.

2. MEMBRANE WATERPROOFING provides a continuous blanket which seals the entire area of the surface protected. It consists of a strong and elastic fabric or felt membrane mopped on with coal-tar pitch. It is applied to the water side of the construction to be protected. The water pressure pushes the membrane against the walls and floors and thus tends to preserve the contact between the membrane and the construction.

3. DAMPPROOFING is intended to render the surface of a material impermeable to water intermittently present in small quantities and not amounting to a head of water pressure. It is therefore evident that while waterproofing is also naturally and inherently dampproofing, dampproofing can **not** be waterproofing.

Dampproofing generally consists of a water-repellent surface coating applied by brush, spray or trowel. A good dampproofing will penetrate into and fill the pores of a surface, is sufficiently elastic to conform to expansion and contraction, and is insoluble in and unaffected by acids or alkalis that may come in contact with it either in the water it is intended to repel or the surfaces to which it is applied.

4. THROUGH-WALL FLASHING, employing tarred fabric cemented with a flashing cement, is designed to prevent the penetration of intermittently present water through a wall or similar construction by diverting the direction of flow. It is essentially the same as dampproofing in principle, but differs in that dampprcofing is generally an all-over surface treatment, while flashing is restricted to a vulnerable point.

Why Coal Tar Materials Should be Used

The function of waterproofing and dampproofing is to protect masonry or concrete from attacks by water. The most important property that must be possessed by any waterproofing or dampproofing material is ability to resist prolonged contact with water. It cannot be assumed that all materials used for this work are actually resistant to water. True water-resistance *is* obtained with coal tar pitches. This is proved by the records of 30, 40 or even more years of leak-proof service life from coal tar pitch roofs and by the fact that coal tar pitch on water-cooled roofs is constantly or intermittently exposed to water for years without damage.

WATERPROOFING

PITCH

Koppers Coal Tar Waterproofing Pitch is manufactured by distilling blends of coal tars to the proper consistency for waterproofing work. It is resistant to attack by termites, is self-healing and self-sealing if slight breaks occur in the pitch and it possesses a ductility which permits it to conform to irregularities in waterproofed surfaces.

Koppers Waterproofing Pitch complies with the following specifications:

A.S.T.M. D-450-41 Type B

Federal Specification R. P.-381—Type II

Underwriters' Laboratories

FABRIC

Open-mesh cotton fabric is thoroughly saturated with coal tar pitch by being passed successively through hot melted pitch and hot squeeze rolls. In Koppers Waterproofing Fabric, the cotton weighs not less than four ounces per square yard before treatment and not less than 11 ounces after treatment.

The finished fabric is sufficiently porous to permit the moppings of hot waterproofing pitch to seep through during the application of the waterproofing and become firmly anchored in place.

Koppers Tar Saturated Waterproofing Fabric complies with the following specifications:

A.S.T.M. D-173-42

Federal Specifications HH-C-591

WHEN TO USE FABRIC

Fabric has greater strength than felt and is especially effective where vibration or deflection is encountered. It is particularly recommended under heavily-loaded columns, on machine isolation and on railroad track isolation in buildings, as well as on bridges, roadways, tunnels, etc. It is also used on waterproofing where no protection course is to be used. In corners, angles and on irregular surfaces, it can be applied without entrapping air, thus making a firmer bond.

FELT

Dry rag felt is produced by the "felting" of fibers of vegetable and animal origin. The dry felt is passed through a hot bath of coal tar and hot squeeze rolls. Koppers Tar-saturated Felt increases in weight not less than 140% during saturation. The felt most frequently used in waterproofing weighs 15 pounds per 108 square feet.

WHEN TO USE FELT

Felt is sometimes used in alternate layers with fabric, or is used in the first plies and covered with fabric on the outermost ply. Felt, when mopped with pitch, increases the impermeability of membrane waterproofings.

Fabric membranes are not superior to felt except in their greater toughness and strength.

PROTECTION COURSE

In swimming pools, shower baths, dairy and hotel kitchen floors, a course of cement concrete is applied against the waterproofing and is used as a bedding course for the vitrified brick, tile or other surface. On bridge decks, elevated highways and ramps, protection courses and wearing surfaces may be made of brick, granite block, cement concrete or bituminous materials.

On culverts and bridge arches, the protection course is sometimes omitted, and gravel or other fill, free from cinders and sharp stone, is placed directly upon the waterproofing.

In tunnels, subways, sidewalk vaults, sub-basements and reservoirs, the waterproofing may be placed between two courses of cement concrete.

DAMPPROOFING

Dampproofing applications are usually made with Koppers HP Primer and Koppers Seal Coat.

HP Primer penetrates the surface of the concrete and makes it water-repellent.

Seal Coat seals the surface and protects it from erosion.

Koppers Lumino is used over HP Primer when an aluminum finish is desired. Lumino is a bituminous-base paint which contains a chemically-processed tar base fluxed with highly refined solvents and Alcoa Albron Aluminum Powder. It produces two protecting films with one application and one labor cost.

Koppers High Penetration Primer meets the following specification:

U.S. Bureau of Public Roads TW-1-X.

Koppers Seal Coat meets the following specification:

U.S. Bureau of Public Roads RT-143 Type RTCB-5, RTCB-6.

MEMBRANE WATERPROOFING

GENERAL SPECIFICATIONS

Preparation of Surface

All surfaces which are to be waterproofed shall be reasonably smooth and free from projections or holes which might cause puncture of the membrane. The surface shall be dry so as to prevent the formation of steam when the hot pitch is applied and, immediately before the application of the waterproofing, the surface shall be thoroughly cleaned of dust and loose materials.

No waterproofing shall be applied in wet weather or when the air temperature is below 35° F. unless vertical surfaces are heated and dried by salamanders, and horizontal surfaces are heated for one to two hours with a two-inch layer of hot sand. After the concrete is warm and thoroughly dry, the sand shall be swept back as work progresses.

Plies of Membrane Required for Different Water Pressures

Head of Water in feet	Felt, Fabric, or Combined Felt and Fabric	
	Plies Required	Pitch Mopping Required
1-3	2	3
3-6	3	4
6-9	4	5
9-12	5	6
12-18	6	7
18-25	7	8
25-35	10	11
35-50	11	12
50-75	13	14
75-100	14	15

Application

1. Beginning at the low point of the surface, thoroughly mop a strip of concrete with Koppers Waterproofing Pitch. This mopping and all succeeding moppings on the concrete surface shall cover the concrete so that in no place shall gray spots be visible. Immediately following the first mopping, press the first strip of fabric into the hot pitch so that it is smoothly and firmly bonded to the concrete.

2. Mop the edge of the first strip of fabric and the adjacent strip of concrete with Koppers Waterproofing Pitch, and into the hot pitch press a strip of fabric so that it forms a two (2) inch side lap with the first strip.

3. Repeat the above application until one ply of fabric with two (2) inch laps has been laid over that portion of the surface designated by the waterproofing engineer.

4. Again starting at the low point of the surface mop the first layer of fabric with hot pitch so that all threads of the fabric are completely hidden by pitch and into this press a strip of fabric which has been cut so as to break joints at the middle, one-third or other portion of the width of the first ply of fabric, depending on the number of plies to be used.

5. Repeat the above application using full width fabric until two plies of fabric have been laid over the surface.

6. Apply the third and succeeding plies of fabric in the same way, making sure that fabric does not touch fabric in any place.

7. Mop the entire top with Koppers Waterproofing Pitch. The completed waterproofing shall be firmly bonded membrane, and fabric shall not be exposed in any place.

8. As soon as any portion of the waterproofing has been completed it shall be covered by the specified protection course—concrete, brick, tile or other suitable material.

General

LAPS—Each sheet of fabric shall overlap the preceding sheet not less than two (2) inches at the sides. End laps shall be staggered at least twenty-four (24) inches from the end lap of the preceding ply.

End laps shall be not less than ten (10) inches wide.

The waterproofing shall be applied so that the direction of the flow of water is over and not against the laps.

Laps which have been exposed for any length of time shall be carefully examined for defects before connecting with other fabric and where any defects or insufficient lap areas are found the protection course shall be cut back sufficiently to give a proper lap between the membrane in place and the new work which is being applied.

Details

All plies of fabric shall be rolled or pressed firmly into the hot pitch and shall be laid without wrinkles, buckles or kinks.

Pitch shall not be heated above three hundred and seventy-five (375°) degrees F.

All wall angles, corners or any place where, in the opinion of the engineer or architect, the waterproofing course may be subject to unusual strain there shall be applied on the water pressure side not less than two (2) additional reinforcement plies of fabric and moppings of pitch.

Insulate all hot water and steam pipes which project through or are near the surfaces to be waterproofed so as to prevent injury to the waterproofing. Extra plies of fabric and other precautions should be taken to prevent water from getting between the waterproofing and the waterproofed surface at all points where the membrane is penetrated by drains, pipes, etc.

Plies of Koppers Tor Saturated Fabric or Koppers Approved Tarred Felt	Alternate Moppings of Koppers Waterproofing Pitch Required	Pounds of Pitch Required to Complete Each 100 sq. ft. of Waterproofing
2	3	105
3	4	140
4	5	175
5	6	210
6	7	245

All membrane waterproofing shall be applied by an experienced waterproofing contractor.

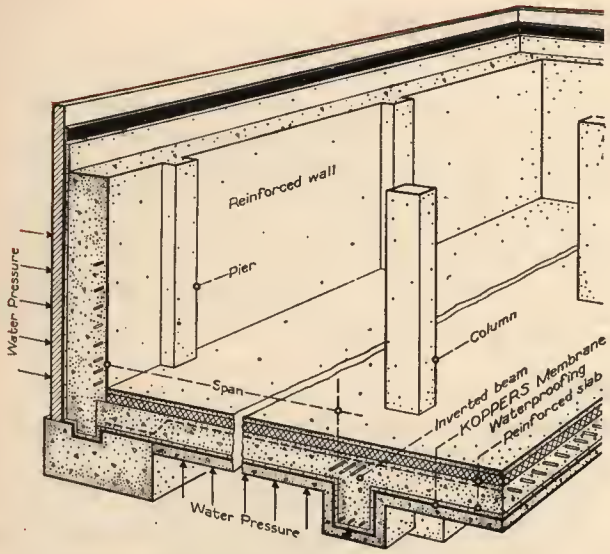
WOOD FLOOR WATERPROOFING

Lay over the entire surface two (2) thicknesses of red rosin paper (weighing not less than five (5) pounds per one hundred (100) square feet), lapping each sheet nineteen (19) inches over the preceding sheet. Nail to hold in place.

Lay one (1) thickness of Koppers Approved Tarred Felt with two (2) inch side laps and six (6) inch end laps and nail as required to hold in place.

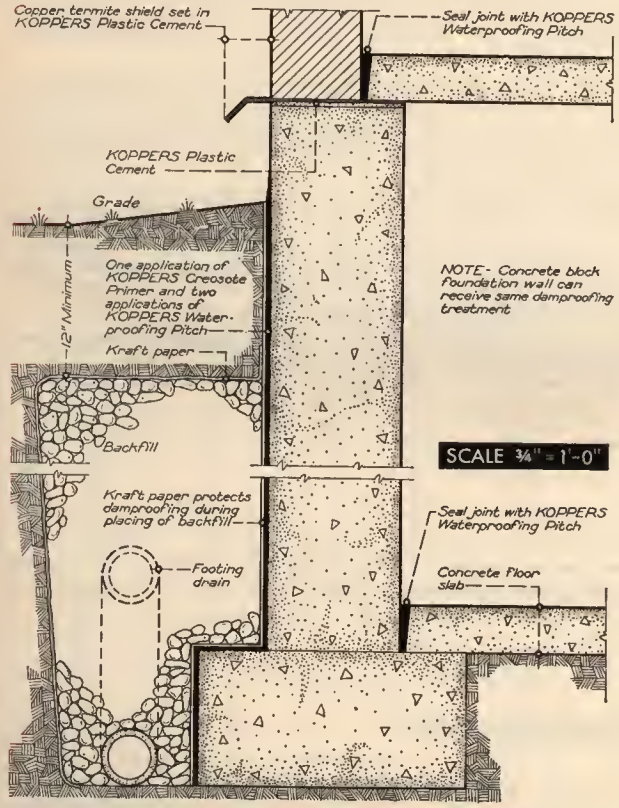
Mop the entire surface with Old Style Pitch and into the pitch lay one (1) ply of Approved Tarred Felt with side laps of two (2) inches and end laps of six (6) inches. All laps shall be mopped so that in no place does felt touch felt. The entire surface shall then be mopped with pitch and the floor plank shall be embedded in the hot pitch.

At corners and angles two additional plies of felt shall be installed, alternately mopped and run up the walls, etc., not less than three (3) inches above the level of the finished flooring, where they shall be fastened securely and protected. The finished flooring shall be nailed to the embedded plank immediately. Nails of suitable length shall be used to avoid penetrating through planks into the waterproofing.



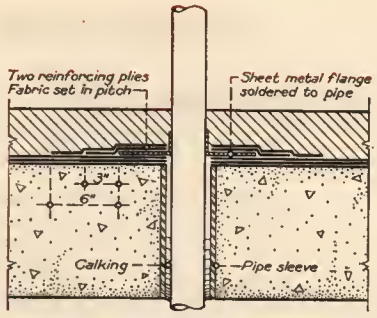
PRESSURE FROM HYDROSTATIC HEAD

The drawing shows a perspective section through a typical foundation which is reinforced against hydrostatic head. Vertical walls must be designed for a lateral thrust and the floor is shown reinforced against upward thrust. Where feasible a drainage system will relieve water pressure and may make it possible to reduce the hydrostatic head considerably and so reduce the cost of construction. A static head of water will exert a pressure of 62½ pounds per square foot for each foot of height of the water. During the construction the water pressure must be relieved by pumping until the concrete work has been placed and has developed its design strength.



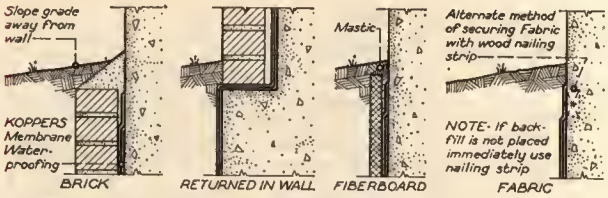
TYPICAL BASEMENT DAMPPROOFING

The dampproofing of basement floors where no static head exists may be accomplished through the use of a primer and two moppings of waterproofing pitch. A strong kraft paper, applied shingle fashion, should be used to protect the dampproofing during the placing of the backfill. A kraft paper lining of the backfill trench will prevent a silting of the porous material which might render it ineffective in time.



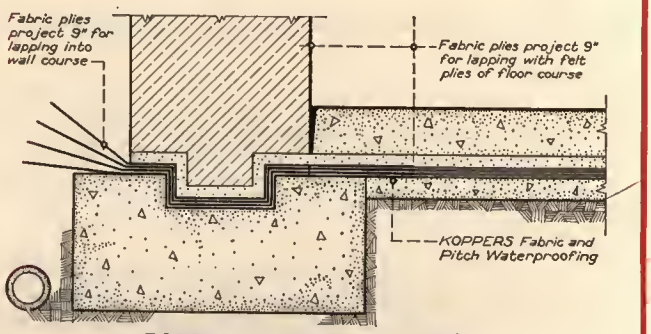
PIPE SLEEVES THRU MEMBRANE

Sleeves must be provided for pipes, conduits and other penetrations through membrane waterproofing. Hot water and steam pipes must be insulated where they pass through or near membrane to prevent injury. Penetration of piping should be avoided unless necessary since movement of the structure can destroy the water-tightness.



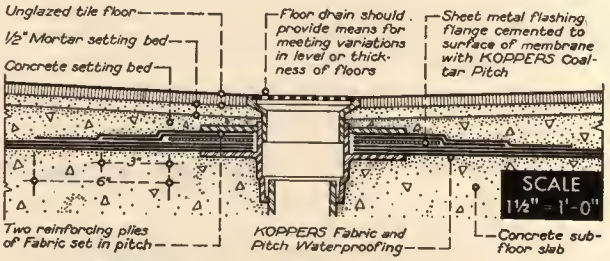
TERMINATIONS OF MEMBRANE AT GRADE

A protection course is used to protect the membrane waterproofing against damage, particularly during the backfilling operation. Backfill which contains no sharp or extremely heavy particles will not injure the membrane once the job is completed. The termination of the membrane at grade is shown here.



FABRIC THRU KEY JOINTS

Where the sequence of work requires an interruption in the installation of waterproofing membrane, such as key joints underwalls, plies of fabric are left projecting as shown and are provided with temporary protection. When the new surface is erected the projecting plies are lapped into the membrane of the new surface with coal tar pitch moppings.



MEMBRANE AT FLOOR DRAINS

Floor drains used in water-tight floors or promenade decks should be of a type equipped with a metal flashing flange which is cemented to the surface of the membrane with a mopping of coal-tar pitch. Over the flange with alternate moppings 2 reinforcing plies of tarred fabric are applied as shown.

POURED CONCRETE FLOOR WATERPROOFING

Lay over the entire surface two (2) thicknesses of Approved Tarred Felt, lapping each sheet nineteen (19) inches over the preceding sheet, mopping the full width of the lap with Old Style Pitch so that in no place does felt touch felt. Then coat the entire surface with Old Style Pitch. Not less than seventy (70) pounds of pitch shall be used for completing the waterproofing on each one hundred (100) square feet of surface.

At all corners and angles two additional plies of felt shall be installed and mopped similarly and these shall be carried up the walls, etc., not less than three (3) inches above the level of the finished flooring where they shall be fastened securely and protected. The finished flooring shall be installed immediately.

SPANDREL AND WALL WATERPROOFING

Every building of masonry construction should have adequate flashings built through the walls to impede the movement of moisture through inter-connecting voids in the masonry. These flashings protect spandrel beams, reinforcing steel, steel window and door frames against corrosion. Coating the interior surfaces of all exterior walls with Koppers Waterproofing Pitch or Koppers Dampproofing Paint produces a moisture-repellent film between the structural walls and furring.

Specification

In all places where spandrel waterproofing is detailed two (2) plies of Koppers Tarred Fabric set in two (2) trowel coatings of Koppers Plastic Cement shall be constructed. All flashing shall terminate one-half (½) inch from wall exteriors.

The interior surfaces of all exterior walls shall be brushed or sprayed with Koppers Concrete Priming Oil, using one (1) gallon for each two hundred (200) square feet. Eight (8) to twenty-four (24) hours later the well primed surfaces shall be mopped with Koppers Waterproofing Pitch. Two (2) coatings using a total of thirty (30) pounds of pitch for each one hundred (100) square feet shall be applied, permitting the first coating to cool before applying the second.

Alternate

(To be used in place of pitch moppings.)

Two coatings of Koppers Dampproofing Paint shall be applied by brush or spray using not less than one (1) gallon for each one hundred and fifty (150) square feet of surface and permitting the first coating to dry for not less than three (3) hours before making the second application.

DAMPPROOFING METHODS

PITCH METHOD—DAMPPROOFING AND TERMITE PROOFING

Uses

For all brick or concrete foundations and abutments where back-fill will be used.

SPECIFICATIONS

Application

The surfaces should be free from all dirt. All cracks should be thoroughly wetted with water and then filled with Portland Cement Mortar.

1. Over the entire surface to be dampproofed, apply a uniform brush coat of Koppers Concrete Priming Oil. Approximately one (1) gallon should be used for each one hundred (100) square feet.

2. Apply a mopping of Koppers Waterproofing Pitch. Approximately twenty-five (25) pounds per one hundred (100) square feet shall be used and the pitch shall be heated to a temperature at which it is entirely liquid, but this temperature shall not exceed three hundred and seventy-five (375°) degrees F.

3. A second mopping of Waterproofing Pitch shall then be applied over the entire surface of the first mopping. Approximately twenty-five (25) pounds per one hundred (100) square feet shall be used so that the entire amount of pitch applied shall amount to a total of approximately fifty (50) pounds per one hundred (100) square feet.

4. The permanent back-fill shall be tamped into place immediately after the last mopping is applied.

5. For additional protection against termites, coal tar pitch seals shall be provided at all places where floor slabs join foundation walls and between adjacent slabs. Seals shall be completely filled with Koppers Waterproofing Pitch. Also 20 oz. copper shields set in Koppers Plastic Cement shall be installed on top of all foundation walls.

NOTE: Use Koppers Membrane Waterproofing when a head of water is encountered.

HIGH PENETRATION METHOD—DAMPPROOFING

Uses

Koppers HP Primer is used with Koppers Seal Coat for protecting cement concrete against the disintegrating action of water.

Concrete is permanent only when it is protected from the alkalies and sulphates often found in ground, lake, and sea waters. Continued contact with water also changes the structure of some of the chemical constituents of cement concrete, thus causing the concrete to lose some of its inherent strength. Koppers HP Primer penetrates the surface of the concrete, making it water-repellent. Koppers Seal Coat seals the surface, thus protecting it from erosion.

(Continued next page)

DAMPPROOFING METHODS (continued)

HIGH PENETRATION METHOD (Continued)

This treatment is used particularly for dampproofing foundations, bridge abutments, basement and retaining walls, culverts, reservoirs, dams, sumps, pits, vats, tanks, and sewage disposal plants. On reinforced concrete this treatment also gives added protection to the reinforcing steel.

SPECIFICATIONS FOR POURED CONCRETE

NOTE: The concrete need not be thoroughly dry. Application of the HP Primer can begin as soon as forms are removed.

Application

1. Apply with a brush, or spray a uniform coating of Koppers High-Penetration Primer over the entire surface to be protected. This first coating usually is absorbed as applied.

2. Immediately apply in the same manner another coating of Koppers High-Penetration Primer over the first coating, allowing this coating to penetrate into the concrete.

3. Repeat the same application as described under No. 2 until four (4) coatings have been applied. The last coatings may require one (1) or two (2) hours to be absorbed.

4. Apply over the entire surface with a brush one (1) application of Koppers Seal Coat. This material shall be applied at a temperature from about eighty (80) to one hundred (100) degrees F. Allow the Koppers Seal Coat to dry thoroughly before disturbing the job.

The application according to this specification will require about two (2) gallons of Koppers High-Penetration Primer and approximately one-half (½) gallon of Koppers Seal Coat per one hundred (100) square feet.

Superstructure—On masonry superstructure exteriors, such as parapet walls, walls of buildings, etc., Koppers Lumino is used over HP Primer to give the surface an aluminum finish. Send for the Koppers folder on tar-base paints.

SPECIFICATIONS FOR PRECAST CONCRETE

The precast piles or slabs shall be reasonably dry.

1. Prepare a bath of Koppers High-Penetration Primer large enough to accommodate the precast units and completely immerse these units for at least thirty (30) minutes, then remove the units from the bath and allow to drain and dry thoroughly.

2. Apply a coating of Koppers Seal Coat, brushing thoroughly into the surfaces. The Seal Coat shall be applied at a temperature of from eighty (80) to one hundred (100) degrees F. Allow the Seal Coat to dry before disturbing the job.

SUB-FLOOR TAR DAMPPROOFING

Uses

In basements where the ground is damp and it is desired to use a wood finish floor, an effective dampproofing is necessary.

Specifications

The earth should be leveled off to proper grade. If earth or cinder fill is used it should be puddled and rolled or tamped to thoroughly compact it. The sub-base may be either a cement-concrete slab installed in the usual way, or a slab of Koppers No. 2 Sub-Floor Tar Concrete. A cubic yard of crushed stone or gravel passing a 2¼ inch sieve but retained on a ¼ inch sieve is mixed with approximately 10 gallons of Koppers No. 2 Sub-Floor Tar which has been heated. This should be thoroughly rolled or tamped and brought to accurate grade.

The dampproofing course is placed over the slab. One cubic yard of clean torpedo sand is heated (210° to 250° F.) and mixed with 25 to 30 gallons of Koppers No. 1 Sub-Floor Tar at the same temperature. The mixture is spread evenly over the slab to a thickness of from 1¼ inches to 1½ inches and leveled with a straight edge.

Well dried or treated planks are laid on this soft mixture before it cools and bedded by hammering, so that the coating compacts to a thickness of 1 inch. If any plank is hammered below level, it is raised and more of the mixture applied beneath it. After the planks have been brought to proper level they are toenailed together.

The sub-floor planks are preferably pressure treated with coal tar creosote meeting the Grade 1 specifications of the American Wood Preservers' Association. In food factories, creameries, etc., where the odor of creosote might be objectionable, the planks should be treated with a suitable salt preservative such as zinc chloride or Wolman salts. Planks to be creosoted should be dried before treatment. When a salt preservative is used, the planks should be dried after treatment, whether or not they were dried before treatment.

The finish floor is then laid at right angles or diagonal to the planks in the usual manner.

NOTE: Koppers produces creosote, and treats wood with creosote, zinc chloride and Wolman salts. Complete information about creosote or treated lumber sent on request.

APPLICATIONS OF DAMPPROOFING PAINT TO CONCRETE IN GENERAL

As soon as the cement has taken its initial set, (. . . spray . . . or . . . brush) a coating of dampproofing paint over the entire surface.

Apply a second coat of Koppers Dampproofing Paint not less than 6 nor more than 24 hours after the first application. For each application use 1 gallon of paint per coat for each 100 square feet of surface covered.

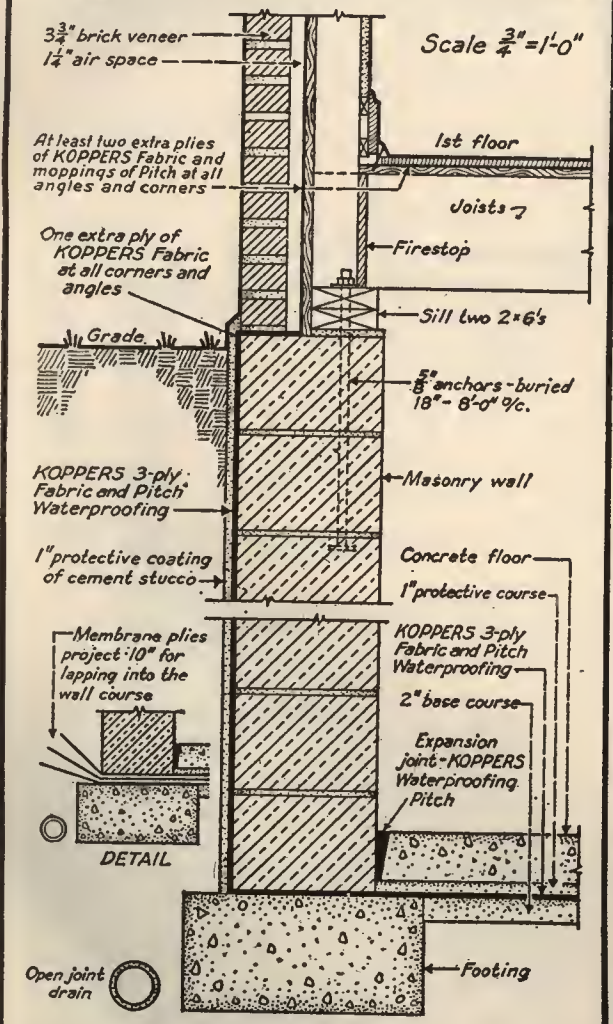
Koppers Dampproofing Paint may be applied to green as well as dry concrete. Green concrete painted with this dampproofing paint does not require sprinkling with water for curing.

Because it is impossible to make a perfect application with a single coat of paint, two coats are recommended.

PENCIL POINTS DATA SHEETS | Sheet No. F9

WATERPROOFING OF RESIDENCE FOUNDATIONS

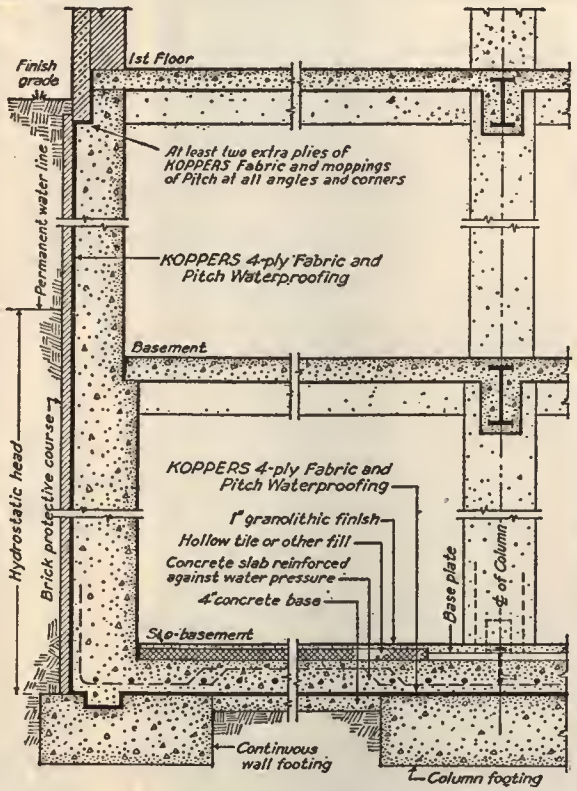
Prepared by Don Graf, B.S., M.Arch.



PENCIL POINTS DATA SHEETS | Sheet No. F9

WATERPROOFING OF DEEP FOUNDATIONS

Prepared by Don Graf, B.S., M.Arch.



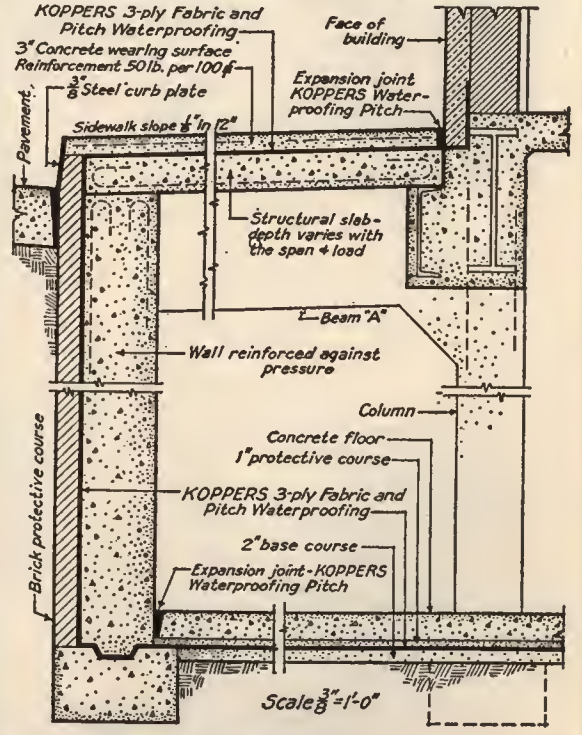
In the construction of deep basements having unfavorable water conditions, the waterproofing method is shown here. The KOPPERS 4-ply Fabric and Pitch Waterproofing membrane will withstand a hydrostatic head up to 18'. From 18' to 25' 5 plies are used. A sheet of 20-oz. soft rolled copper should be placed between the plies beneath all columns, posts or walls under which the pressure exceeds 400 lbs. per sq. inch.

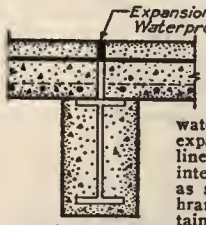
The sub-basement floor is reinforced as a flat slab to resist the upward pressure of the water. Inverted beams may be used, but these necessitate a greater amount of fill to bring the construction to a level to receive the wearing surface. If piles are used, the footings shown above become the pile cappings. No dowels need be run through the membrane.

PENCIL POINTS DATA SHEETS | Sheet No. F9

WATERPROOFING OF SIDEWALK VAULT

Prepared by Don Graf, B.S., M.Arch.





SECTION THRU BEAM "A"

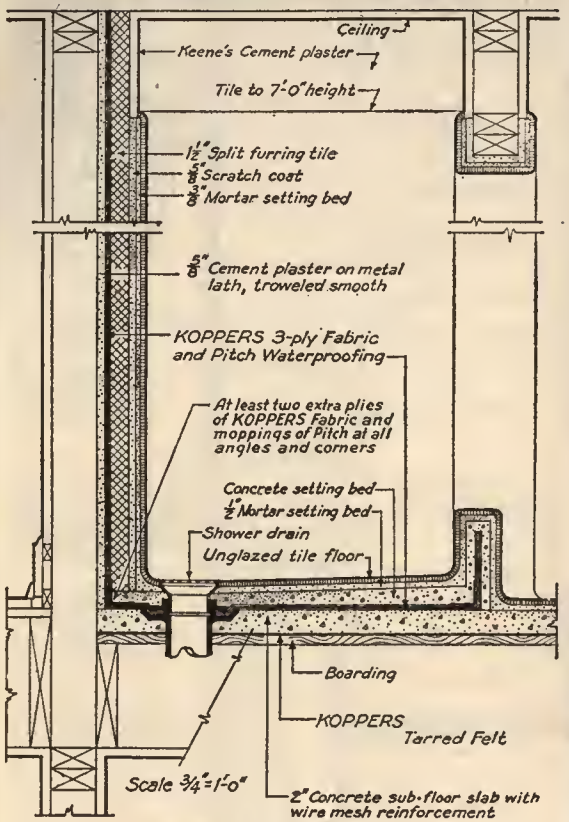
The problem involved in constructing sidewalk vaults is to provide for movement of the concrete to eliminate cracking, and at the same time to exclude water so that the space may be usable. A 1" expansion joint should occur at the building line as shown. Others should occur at proper intervals at right angles to the building face as shown in the detail at the left. The membrane acts as a flexible dam in the joint, retaining the filling of pitch. To facilitate the movement of the slabs, 2 dry plies of Koppers Tarred Felt are placed between the bottom of the slab and its bearing surface on beams or wall, thus breaking the joint.

PENCIL POINTS DATA SHEETS

SHOWER BATH CONSTRUCTION

Prepared by Don Graf, B.S., M.Arch.

Sheet No. D6



The usual sizes for shower stalls are as follows:—30 x 36, 30 x 42, 36 x 36, 36 x 42, 42 x 42. Where space permits, the largest size given is desirable. Showers less than 36 x 36 in the clear should only be planned when space conditions make it mandatory. The door opening may be closed either with a water-proof curtain or any of the standard shower stall doors having ventilating panels.

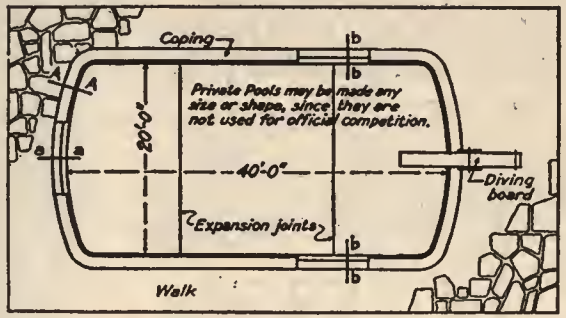
The floor of the shower should be of an unglazed or abrasive tile, to prevent slipping. Glazed or unglazed tiles may be used for the walls at the discretion of the designer. Floor drains vary from 1½" to 3" wastes. The larger the better.

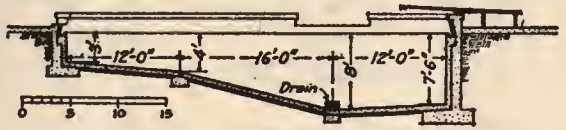
PENCIL POINTS DATA SHEETS

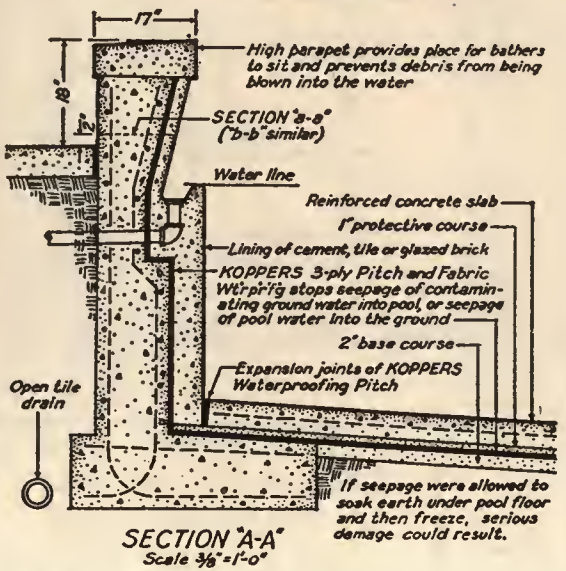
SMALL OUTDOOR SWIMMING POOL

Prepared by Don Graf, B.S., M.Arch.

Sheet No. D2







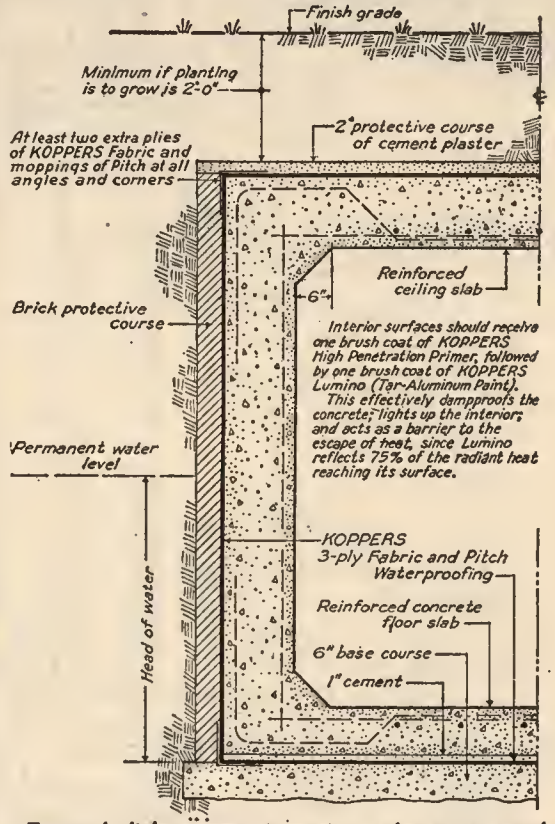
SECTION "A-A"
Scale 3/8"=1'-0"

PENCIL POINTS DATA SHEETS

SUBTERRANEAN TUNNEL TO CONNECT BUILDINGS

Prepared by Don Graf, B.S., M.Arch.

Sheet No. F9



Frequently it is necessary to construct subterranean tunnels from one building to another, either for a passageway for circulation of people, or as a conduit to contain pipes and duets. If the soil will retain ground water, or if the passage extends below the permanent water level, an effective waterproofing is necessary as shown above. This forms an unbroken envelope through which moisture is unable to penetrate.

The thickness of the floor slab and the reinforcing will depend upon the span and the head of water to be resisted. The thickness and reinforcing of the walls depend upon the height and the water head. The detail of the roof or ceiling slab will depend upon the span and the weight of earth to be sustained.

KOPPERS PLASTIPITCH PROTECTED METAL

Corrugated Roofing and Siding; Flat Sheets; V-Crimp Sheets

Koppers Plastipitch Protected Metal consists of flat, corrugated, or V-crimp sheets coated by a process developed by Koppers Company, Inc., with a unique pitch compound known as Koppers Plastipitch.

Because of the nature of the materials from which Plastipitch compound is made, plus the technical and plant skill with which the materials are produced, the Plastipitch coating possesses qualities which make it the ideal bituminous coating for steel sheets for industrial and agricultural buildings. This coating adheres tenaciously to metal at low as well as high atmospheric temperatures.

Plastipitch Protected Metal is used for roofing and siding, and for the maufacture of gutters, ventilators, flashings, ducts, etc.

Steel must be protected against weathering in order to have a long life. Steel coated with Plastipitch has a bituminous coating which thoroughly protects the base against rusting and corrosion, not only from the elements but also from the effects of chemical fumes present in many areas. It provides this armor after many other types of sheets have lost their usefulness. The Plastipitch seals edges as well as sides. They are among the most durable and rust-resistant sheets produced. They require no painting and are virtually free from maintenance expense.

Flat sheets can be easily fabricated in shop or field without special equipment. Bending can be performed without impairing the coating, for Plastipitch is tough and elastic.

Complete data and specification catalog will be sent upon request.

KOPPERS PROTECTIVE COATINGS

Prevent Corrosion, Rust and Disintegration

Koppers Industrial Protective coatings are formulated specifically to prevent corrosion and deterioration on metal, concrete, masonry and insulation by providing a tough, thick barrier between these surfaces and corrosive elements. This barrier is impervious to water, resists the fumes of most of the commonly-used inorganic chemicals and does not deteriorate chemically with age.

Experience has shown that ordinary paints do not stand up against the severe corrosive conditions to be found in industry today and that effective corrosion control—with its accompanying lower maintenance costs—can be accomplished only by treating corrosion as a special problem to be solved by specialized materials.

The base of Koppers Industrial Protective Coatings is highly refined coal-tar pitch. There are many examples of 30 to 40 years' or more life in corrosion prevention with coal-tar pitch coatings. Koppers hot applied Bitumastic Enamels provide many of these records. Koppers Industrial Protective Coatings, unlike Koppers Bitumastic Enamels, are cold applied and require no special application skill. Enough time has not yet elapsed to determine their full life under the many varying corrosive conditions to be found in industry. However, there are many examples of 8 and 10 years' life—in sewage waste treatment tanks, in corrosive soil, in seacoast areas, and in industrial plants.

Typical application of Koppers Protective coatings.

other

KOPPERS

products

WOOD PRESERVATIVES

Koppers Coal Tar Creosote
Koppers Creosote-Coal Tar Solutions
Koppers Kolineum

ROAD MATERIALS

Koppers Tarmac—For construction, maintenance and repair of highways, streets, airport runways and taxi strips, plant roads, pavements, etc.

SPECIFICATION PITCHES

Carbon Pitch
Briquette Pitch
Core Pitch
Fibre Pitch
Target Pitch
Pitch Coke

REFINED TARS

Specification Tars
Mold Wash Tar
Fish Net Tar
Pipe Dip
Saturating Tar
Jute Saturant

CHEMICALS

Complete line of Coal Chemicals

KOPPERS COMPANY INC.

PITTSBURGH 19, PA.

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Jersey City, N.J.—Journal Square 2 6050
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Birmingham 8-1611—8-1612

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New Haven, Conn.
Providence, R.I.
St. Louis, Mo.
St. Paul, Minn.
Swedeland, Pa.
Utica, N.Y.
Woodward, Ala.
Youngstown, Ohio

RUBEROID

BUILT-UP ROOFINGS AND FLASHINGS

THE RIGHT ROOF FOR ANY JOB FROM ONE SOURCE!

See following pages for complete specification data ➔

The right built-up roof for any job—from ONE source!

▶No substitutions are necessary, when you specify Ruberoid! The Ruberoid Co. makes *all types* of built-up roofing—in specifications to meet any project you have in mind—bonded for 10, 15 or 20 years.

Ruberoid Approved Roofing Contractors are ready to give practical assistance in planning and executing your next built-up roof—assistance that is based on long experience, and backed up by the full resources of a complete line of Ruberoid materials. For centralized responsibility, for quality and performance, for *planned* results—call in a Ruberoid Approved Roofer today!

For your greatest convenience . . .

This catalog has been arranged to help you determine, quickly and easily, the correct specification to meet your particular roofing needs.

To find the right roofing specification number, use the following tables, which are based on the three known conditions governing the type of roof desired:

1. Material of roof deck,
2. Incline of roof deck, and
3. Number of years of bond required.

Then turn to the specifications themselves, which are in numerical order (see Page Index on page 5).

TABULAR INDEX TO RUBEROID ROOFING SPECIFICATIONS

BOARD SHEATHING DECK (without insulation)

Bond (Yrs.)	Incline (Inches per ft.)	Pitch and Tarred Felt, Gravel or Slag Finish			Asphalt Felt and Asphalt, Gravel or Slag Finish	Combination (Asbestos Felt and Asphalt Felt), Smooth Finish	Asbestos Felt and Asphalt, Smooth Finish	Dubl-Coverage, Mineral Surface
		Flat Deck	Spray Deck	Steep Deck				
10	0–1	#106	#106SD	.....	....	....	....	....
	1–2	#106	#106SD	.....	#108	#100	....	....
	2–3	....	.....	.....	#108	#100	....	....
	3–4	....	.....	.....	#108	#100	....	#102
	4–5	....	.....	.....	....	#100	....	#102
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	1–2	#151	#151SD	.....	#153	#156	#150	....
	2–3	....	.....	#151STP	#153	#156	#150	....
	3–4	....	.....	#151STP	#153	#156	#150	#159
	4–5	....	.....	#151STP	....	#156	#150	#159
20	0–1	#202	#202SD	.....	....	....	....	....
	1–2	#202	#202SD	.....	#204	#208	#200	....
	2–3	....	.....	#202STP	#204	#208	#200	....
	3–4	....	.....	#202STP	#204	#208	#200	....
	4–5	....	.....	#202STP	....	#208	#200	....

BOARD SHEATHING DECK (with rigid insulation*)

Bond (Yrs.)	Incline (Inches per ft.)	Pitch and Tarred Felt, Gravel or Slag Finish			Asphalt Felt and Asphalt, Gravel or Slag Finish	Combination (Asbestos Felt and Asphalt Felt), Smooth Finish	Asbestos Felt and Asphalt, Smooth Finish	Dubl-Coverage, Mineral Surface
		Flat Deck	Spray Deck	Steep Deck				
10	0–1	#106	#106SD	.....	....	....	....	....
	1–2	#106	#106SD	.....	#109	#101	....	....
	2–3	....	.....	.....	#109	#101	....	....
	3–4	....	.....	.....	#109	#101	....	#103
	4–5	....	.....	.....	....	#101	....	#103
15	0–1	#151	#151SD	.....	....	....	....	....
	1–2	#151	#151SD	.....	#154	#157	#158	....
	2–3	....	.....	.....	#154	#157	#158	....
	3–4	....	.....	.....	#154	#157	#158	#160
	4–5	....	.....	.....	....	#157	#158	#160
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	1–2	#202	.....	.....	#205	#209	#210	....
	2–3	....	.....	.....	#205	#209	#210	....
	3–4	....	.....	.....	#205	#209	#210	....
	4–5	....	.....	.....	....	#209	#210	....

** In any of the above specifications, if one or more sheets of felt underlay are installed under the insulating material, the application of all the roofs indicated shall proceed as over poured concrete decks, mopping solid.*

POURED CONCRETE DECK (with or without insulation)

Bond (Yrs.)	Incline (Inches per ft.)	Pitch and Tarred Felt, Gravel or Slag Finish			Asphalt Felt and Asphalt, Gravel or Slag Finish	Combination (Asbestos Felt and Asphalt Felt), Smooth Finish	Asbestos Felt and Asphalt, Smooth Finish	Dubl-Coverage, Mineral Surface
		Flat Deck	Spray Deck	Steep Deck				
10	0–1	#107	#107SD	.....	....	....	....	....
	1–2	....	.....	.....	#109	#101	....	....
	2–3	....	.....	.....	#109	#101	....	....
	3–4	....	.....	.....	....	#101	....	#103
	4–5	....	.....	.....	....	#101	....	#103
15	0–1	#152	#152SD	.....	....	....	....	....
	1–2	....	.....	#152STP	#154	#157	#158†	....
	2–3	....	.....	#152STP	#154	#157	#158†	....
	3–4	....	.....	#152STP	#154	#157	#158†	#160
	4–5	....	.....	#152STP	....	#157	#158†	#160
20	0–1	#203 #206, 206A*	#203SD	.....	....	....	....	....
	1–2	....	.....	#203STP	#205	#209	#201, 210†	....
	2–3	....	.....	#203STP	#205	#209	#201, 210†	....
	3–4	....	.....	#203STP	#205	#209	#201, 210†	....
	4–5	....	.....	#203STP	....	#209	#201, 210†	....

PRECAST CONCRETE TILE or BOOK TILE DECK (with or without insulation)

10	0–1	#107	#107SD	.....	....	....	....	....
	1–2	....	.....	.....	#109	#101	....	....
	2–3	....	.....	.....	#109	#101	....	....
	3–4	....	.....	.....	....	#101	....	#103
	4–5	....	.....	.....	....	#101	....	#103
15	0–1	#152	#152SD	.....	....	....	....	....
	1–2	....	.....	#152STP	#154	#157	#158†	....
	2–3	....	.....	#152STP	#154	#157	#158†	....
	3–4	....	.....	#152STP	#154	#157	#158†	#160
	4–5	....	.....	#152STP	....	#157	#158†	#160
20	0–1	#203 #206, 206A*	#203SD	.....	....	....	....	....
	1–2	....	.....	#203STP	#205	#209	#201, 210†	....
	2–3	....	.....	#203STP	#205	#209	#201, 210†	....
	3–4	....	.....	#203STP	#205	#209	#201, 210†	....
	4–5	....	.....	#203STP	....	#209	#201, 210†	....

** Spec. #206 is for use under promenade tile, with mortar bed.*
** Spec. #206A is for use under promenade tile with plastic bed.*
† For use with rigid insulation only.

POURED GYPSUM DECK

Bond (Yrs.)	Incline (Inches per ft.)	Pitch and Tarred Felt, Gravel or Slag Finish			Asphalt Felt and Asphalt, Gravel or Slag Finish	Combination (Asbestos Felt and Asphalt Felt), Smooth Finish	Asbestos Felt and Asphalt, Smooth Finish	Dubl-Coverage, Mineral Surface
		Flat Deck	Spray Deck	Steep Deck				
10	0–1	#106	#106SD	.....	....	....	....	....
	1–2	#106	#106SD	.....	#109	#100	....	....
	2–3	....	.....	.....	#109	#100	....	....
	3–4	....	.....	.....	....	#100	....	#102
	4–5	....	.....	.....	....	#100	....	#102
15	0–1	#151	#151SD	.....	....	....	....	....
	1–2	#151	#151SD	#152STP	#154	#156	#150	....
	2–3	....	.....	#152STP	#154	#156	#150	....
	3–4	....	.....	#152STP	#154	#156	#150	#159
	4–5	....	.....	#152STP	....	#156	#150	#159
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	1–2	#202	#202SD	#203STP	#205	#208	#200	....
	2–3	....	.....	#203STP	#205	#208	#200	....
	3–4	....	.....	#203STP	#205	#208	#200	....
	4–5	....	.....	#203STP	....	#208	#200	....

PRECAST GYPSUM BLOCK DECK

Bond (Yrs.)	Incline (Inches per ft.)	Pitch and Tarred Felt, Gravel or Slag Finish			Asphalt Felt and Asphalt, Gravel or Slag Finish	Combination (Asbestos Felt and Asphalt Felt), Smooth Finish	Asbestos Felt and Asphalt, Smooth Finish	Dubl-Coverage, Mineral Surface
		Flat Deck	Spray Deck	Steep Deck				
10	0–1	#106	#106SD	.....	....	....	....	....
	1–2	#106	#106SD	.....	#109	#100	....	....
	2–3	....	.....	.....	#109	#100	....	....
	3–4	....	.....	.....	....	#100	....	#102
	4–5	....	.....	.....	....	#100	....	#102
15	0–1	#151	#151SD	.....	....	....	....	....
	1–2	#151	#151SD	.....	#154	#156	#150	....
	2–3	....	.....	#151STP	#154	#156	#150	....
	3–4	....	.....	#151STP	#154	#156	#150	#159
	4–5	....	.....	#151STP	....	#156	#150	#159
20	0–1	#202	#202SD	.....	....	....	....	....
	1–2	#202	#202SD	.....	#205	#208	#200	....
	2–3	....	.....	#202STP	#205	#208	#200	....
	3–4	....	.....	#202STP	#205	#208	#200	....
	4–5	....	.....	#202STP	....	#208	#200	....

GYPSUM PLANK DECK (without insulation)

Bond (Yrs.)	Incline (Inches per ft.)	Pitch and Tarred Felt, Gravel or Slag Finish			Asphalt Felt and Asphalt, Gravel or Slag Finish	Combination (Asbestos Felt and Asphalt Felt), Smooth Finish	Asbestos Felt and Asphalt, Smooth Finish	Dubl-Coverage, Mineral Surface
		Flat Deck	Spray Deck	Steep Deck				
10	0–1	#106	#106SD	.....	....	....	....	....
	1–2	#106	#106SD	.....	....	....	....	....
15	0–1	#151	#151SD	.....	....	....	....	....
	1–2	#151	#151SD	.....	....	....	....	....
20	0–1	#202	#202SD	.....	....	....	....	....
	1–2	#202	#202SD	.....	....	....	....	....

GYPSUM PLANK DECK (with rigid insulation)

Bond (Yrs.)	Incline (Inches per ft.)	Pitch and Tarred Felt, Gravel or Slag Finish			Asphalt Felt and Asphalt, Gravel or Slag Finish	Combination (Asbestos Felt and Asphalt Felt), Smooth Finish	Asbestos Felt and Asphalt, Smooth Finish	Dubl-Coverage, Mineral Surface
		Flat Deck	Spray Deck	Steep Deck				
10	0–1	#107	#107SD	.....	....	....	....	....
	1–2	#107	#107SD	.....	#109	#101	....	....
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	4–5	....	.....	.....	....	#101	....	#103
15	0–1	#152	#152SD	.....	....	....	....	....
	1–2	#152	#152SD	.....	#154	#157	#158	....
	2–3	....	.....	.....	#154	#157	#158	....
	3–4	....	.....	.....	#154	#157	#158	#160
	4–5	....	.....	.....	....	#157	#158	#160
20	0–1	#203	#203SD	.....	....	....	....	....
	1–2	#203	#203SD	.....	#205	#209	#210	....
	2–3	....	.....	.....	#205	#209	#210	....
	3–4	....	.....	.....	#205	#209	#210	....
	4–5	....	.....	.....	....	#209	#210	....

STEEL DECK (with rigid insulation*)

Bond (Yrs.)	Incline (Inches per ft.)	Pitch and Tarred Felt, Gravel or Slag Finish			Asphalt Felt and Asphalt, Gravel or Slag Finish	Combination (Asbestos Felt and Asphalt Felt), Smooth Finish	Asbestos Felt and Asphalt, Smooth Finish	Dubl-Coverage, Mineral Surface
		Flat Deck	Spray Deck	Steep Deck				
10	0–1	#107	#107SD	.....	....	....	....	....
	1–2	....	.....	.....	#109	#101	....	....
	2–3	....	.....	.....	#109	#101	....	....
	3–4	....	.....	.....	....	#101	....	#103
	4–5	....	.....	.....	....	#101	....	#103
15	0–1	#152	#152SD	.....	....	....	....	....
	1–2	....	.....	#152STP	#154	#157	#158	....
	2–3	....	.....	#152STP	#154	#157	#158	....
	3–4	....	.....	#152STP	#154	#157	#158	#160
	4–5	....	.....	#152STP	....	#157	#158	#160
20	0–1	#203	#203SD	.....	....	....	....	....
	1–2	....	.....	#203STP	#205	#209	#210	....
	2–3	....	.....	#203STP	#205	#209	#210	....
	3–4	....	.....	#203STP	#205	#209	#210	....
	4–5	....	.....	#203STP	....	#209	#210	....

**Ruberoid will not issue bonds on built-up roofs applied directly over steel decks. The steel decks must first be covered with at least 1 in. of approved rigid roof insulation secured to the steel deck by either moppings of steep asphalt or by mechanical means as directed by the insulation manufacturer. Bonds will then be issued as indicated on page 6.*

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Brick walls with metal base ond counter flashing—WOOD DECK	#6A	#6A	#6A
Brick walls with metol base ond counter flashing—CONCRETE DECK OR INSULATION	#6B	#6B	#6B
Brick walls with metal counterflashing only	#6	#6	#6
Brick walls to be covered—inside foce and top	#4	#5	#5
CONCRETE WALLS TO BE COVERED—INSIDE FACE AND TOP	#4	#5	#5
Brick wolls—composition bose flashing—no metal	#3	....	....
Concrete wolls—composition bose flashing—no metal	#7	....	....
Brick wolls with mosonry floshing block	#8	#8	#8
Concrete walls with integral flashing recess	#8A	#8A	#8A

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RUBEROID BONDED ROOFING SPECIFICATIONS

GENERAL REQUIREMENTS FOR ALL RUBEROID SPECIFICATIONS

ROOFING

Unless otherwise specifically stated in any case, the terms hereunder listed shall be construed in accordance with definitions as follows:

Manufacturer — The RUBEROID CO., whose main office is at No. 500 Fifth Avenue, New York 18, N. Y.

Contractor — The Roofing Contractor, who must be approved by the manufacturer.

The contractor shall inspect the roof surfaces and shall not proceed with roofing work until all defects reasonably apparent by proper inspection and which might injure the roofing, have been remedied by others.

Roof surfaces shall be swept clean and free of all loose material before proceeding with roofing work.

The contractor shall afford all necessary facilities for inspections by the manufacturer.

General Notes:

Note 1. Insulated Roofs — If this roof is applied over insulating material, the insulation must be firm, capable of withstanding traffic without crushing, and of a type that will retain nails. Provisions must be made that no more insulation shall be laid at one time than can be promptly protected by roofing in the event of sudden weather changes. A felt cut-off shall be mopped along the edge of insulation at a distance not greater than one width of the insulating material from parapet walls, curbs and other openings.

Note 2. Leader Heads, Vents, etc. — Leader heads, vents, and other openings shall be furnished with metal flanges of sufficient width to permit proper connections with the roofing. If not so furnished an exception of responsibility will be taken for any leaks which may develop immediately adjacent. Flanges of scuppers, gutters, gravel guards, finishing or edging strips, leader heads and vents shall be set on top of all felts, nailed and double felt stripped.

Note 3 — Directions covering the application of felt flashing reinforcement around all walls and vertical surfaces must be followed as outlined in the section entitled "Requirements For Applying Ruberoid Bonded Roofs" (as shown in Ruberoid's Bonded Specifications Book), which is made a part of this application.

Bonds:

The Manufacturer's Surety Bond Guaranty as issued by the National Surety Corp. of New York, N. Y., covering a period of ten, fifteen, or twenty years from date of completion of the work, depending on the specification applied, shall be furnished.

Note — This guarantee is not given on jobs of less than 50 squares, nor in such portions of the United States as are not covered by the Manufacturers' Inspection Service, except by special arrangement with the Manufacturer.

FLASHING

Endorsements:

The Ruberoid Co. shall furnish on Ruberoid Flashtite Flashing installed strictly in accordance with specification instructions during the application of a Ruberoid Bonded Roof, The Ruberoid Co. Surety Bond Guaranty as issued by the National Surety Corp. of New York, N. Y., covering a period of ten, fifteen, or twenty years from date of completion of the work, depending on the specification applied. Under no circumstances, however, shall the period of the Flashing Endorsement exceed the period of the bond covering the roof with which the flashing is used, nor does it cover any metal base or counter-flashing. This guarantee is not given in such portions of the United States as are not covered by Ruberoid Inspection Service.

SPEC. NO. 100 (10-year Bond)

For use over board sheathing, poured gypsum* or precast gypsum block*

(Not to be used on inclines less than 1" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 10-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck must be constructed of seasoned lumber, dressed on upper side, dry and free from large cracks and knot holes. Roof boards must be securely nailed in place, leaving no nail heads above the wood surfaces. Surfaces must be properly graded to outlets and cant strips provided in the angle formed between the roof and vertical surfaces.

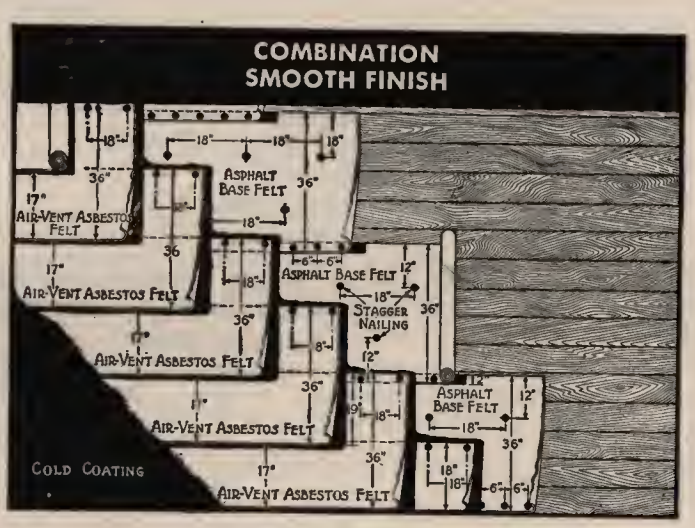
If the roof deck is of poured or precast gypsum it must be visibly surface-dry, free from traces of frost or ice, smooth and properly graded to drains or outlets.

General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — Lay one ply of Ruberoid No. 30 Asphalt Felt, lapping sheets 2 in. at edges and not less than 6 in. at end laps. Nail at 6 in. intervals along the lap and at 18 in. intervals along lines 12 in. from each edge of each sheet, the latter nails being staggered. This felt shall be turned up not less than 4 in. along all walls and vertical surfaces.

Second — Over the entire surface lay two plies of Ruberoid Asphalt-saturated Air-vent Asbestos Felt, embedding each sheet in Ruberoid Bond Roofing Asphalt, lapping each sheet 19 in. over the preceding one and rolling each sheet immediately behind the mop to insure proper adhesion of all sheets. In no place shall felt touch felt. Each sheet shall be nailed along the back edge only from 1 in. to 1½ in. down, at intervals of approximately 18 in. These felts shall be cut off at the angle of the roof deck and all vertical surfaces.



Third — Over the entire surface brush a uniform coating of Ruberoid Cold Coating, using not more than 20 lbs. per 100 sq. ft.

Felt shall be laid without wrinkles or buckles. It shall be rolled immediately behind the hot mop and firmly embedded by brooming the felt. Asphalt shall not be heated to exceed 450° F.

All nailing shall be done either with galvanized roofing nails driven through flat tin caps or with 10 gauge galvanized roofing nails having heads of not less than ⅝ in. in diameter.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

If this roof is to be applied over insulating material, use the method of application as shown in Ruberoid Spec. No. 101.

*** This specification shall be followed over poured gypsum or precast gypsum decks except that all nailing shall be done with 1½ in. bright (not galvanized) nails having ⅝ in. diameter heads. The deck must be primed and strip mopped with asphalt when applying the base sheets, such strip moppings to be at least 12 in. in width and at intervals not to exceed 18 in.**

SPEC. NO. 101 (10-year bond)

For use over poured concrete, precast concrete tile, book tile or rigid insulation

(Not to be used on inclines less than 1" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 10-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck must be thoroughly dry, smooth and free from loose material, and must be properly graded to outlets.

For inclines exceeding 4 in. to the foot, if the deck is of concrete, wood nailing strips must be provided at proper intervals.

Coves shall be provided in the angle between the roof and the vertical surfaces.

Where book tile is used, the surface of the tile must be covered with Portland cement mortar 1 in. thick with a smooth and even finish.

General Requirements and Conditions of Bond: ***See page 6.***

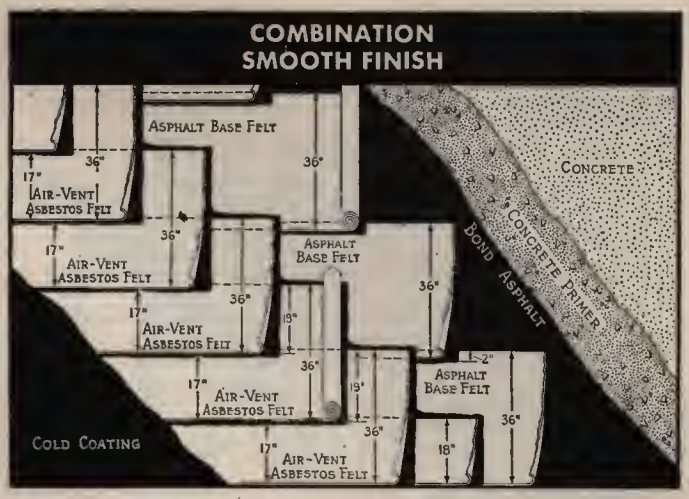
Application of Roofing:

First — Coat the entire surface with Ruberoid Concrete Primer applied cold, allowing same to dry thoroughly. Where plastic material is used to caulk the joints of blocks, the coating of primer shall be held back 2 in. from all joints.

Second — Over the entire surface lay one ply of Ruberoid No. 30 Asphalt Felt in Ruberoid Bond Roofing Asphalt, lapping each sheet 2 in. over the preceding one at edges and not less than 6 in. at end laps. Roll each sheet immediately behind the mop to insure proper adhesion of all sheets. Mopping and rolling shall be so done so as to secure a continuous bed of asphalt of uniform thickness. In no place shall felt touch felt or roof deck. Felts shall be cut off at the angle of the roof deck and all vertical surfaces.

On inclines exceeding 4 in. to the foot these sheets shall be nailed at intervals of 9 in. along the lap into the nailing strips or roof deck.

Third — Over the entire surface lay in asphalt two plies of Ruberoid Air-vent Asbestos Felt, lapping each sheet 19 in. over the preceding one, rolling each sheet immediately behind the mop to insure a uniform coating of hot asphalt. In no place shall felt touch felt.



On inclines exceeding 4 in. to the foot, sheets shall be back-nailed at intervals of 18 in. into the nailing strips or roof deck.

These felts shall be cut off at the angle of the roof deck and vertical surfaces.

Fourth — Over the entire surface brush a uniform coating of Ruberoid Cold Coating, using not more than 20 lbs. per 100 sq. ft.

Felt shall be laid without wrinkles or buckles. It shall be rolled immediately behind the hot mop and firmly embedded by brooming the felt. Asphalt shall not be heated to exceed 450° F.

All nailing shall be done either with galvanized roofing nails driven through flat tin caps or with 10 gauge galvanized roofing nails having heads of not less than ⅝ in. in diameter.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

SPEC. NO. 102 (10-year Bond)

For use over board sheathing, poured gypsum * or precast gypsum block *

(Not to be used on inclines less than 3" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 10-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: If over boards, the roof deck shall be constructed of seasoned lumber, smooth and securely nailed, and free from large cracks or knot holes. It shall be properly graded to outlets and swept clean and free from all loose material and cant strips provided at all vertical surfaces. If the roof deck is of poured or precast gypsum, it must be visibly surface dry, free from traces of frost or ice, smooth and properly graded to outlets.

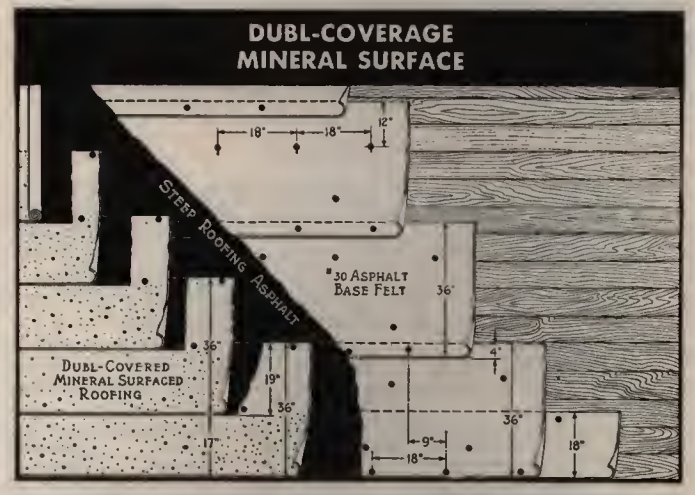
Preparation of Material: The Ruberoid Dubl-Coverage mineral surfaced Roofing shall be cut into lengths not exceeding 18 feet and piled flat in a protected place twenty-four hours before application.

General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — Over the entire surface at right angles to the incline of the roof deck, lay one ply of Ruberoid No. 30 Asphalt Felt, lapping each sheet 4 in. over the preceding one and nailing at intervals along the lap not to exceed 4 in. Each sheet shall be stagger nailed down the center at intervals of 18 in. approximately 12 in. from each edge.

Second — Embedding in Ruberoid Steep Roofing Asphalt, apply Ruberoid Dubl-Coverage mineral surfaced roofing over the entire surface. The sheets shall be laid at right angles to the incline of the roof deck and the selvage portion of each sheet shall be stagger nailed at intervals not exceeding 12 in. Care must be exercised in mopping the selvage so that there will be no drippage down over the preceding sheet and the edge of each sheet must be stepped into the bot mopping so that all laps will be securely sealed. Mopping must be done immediately ahead of the unrolling sheet of roofing and at no time is it permitted to mop more than 3 feet ahead of the roll.



Third — End laps shall be 6 in. in width and the underlying edge shall be nailed on 6 in. centers, mopped and the overlying edge stepped down firmly into the mopping.

Fourth — If the incline of the roof exceeds 4 in. per foot, the Ruberoid Dubl-Coverage material may be laid parallel with the incline of the roof deck, provided the laps face away from the prevailing wind direction in the locality of the job.

Fifth — The flat portion of valleys shall be constructed as per Ruberoid Spec. No. 106.

If this roof is to be applied over insulating material, use the method of application as shown in Ruberoid Spec. No. 103.

*** This specification shall be followed over poured gypsum or precast gypsum decks except that all nailing shall be done with 1½ in. bright (not galvanized) nails having ⅝ in. diameter heads. The deck must be primed and strip mopped with asphalt when applying the base sheets, such strip moppings to be at least 12 in. in width and at intervals not to exceed 18 in.**

SPEC. NO. 103 (10-year Bond)

For use over poured concrete, precast concrete tile or rigid insulation

(Not to be used on inclines less than 3" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 10-year Guaranty Bond installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck must be thoroughly dry, free from frost, smooth and free from loose material, and properly graded to outlets.

For inclines exceeding 3 in. to the foot, if the deck is of concrete, wood nailing strips must be provided at proper intervals.

Coves shall be provided in the angle between the roof and the vertical surfaces.

Where book tile is used, the surface of the tile must be covered with Portland cement mortar 1 in. thick with a smooth and even finish.

Preparation of Material: The Ruberoid Dubl-Coverage roofing shall be cut into lengths not exceeding 18 feet and piled flat in a protected place twenty-four hours before application.

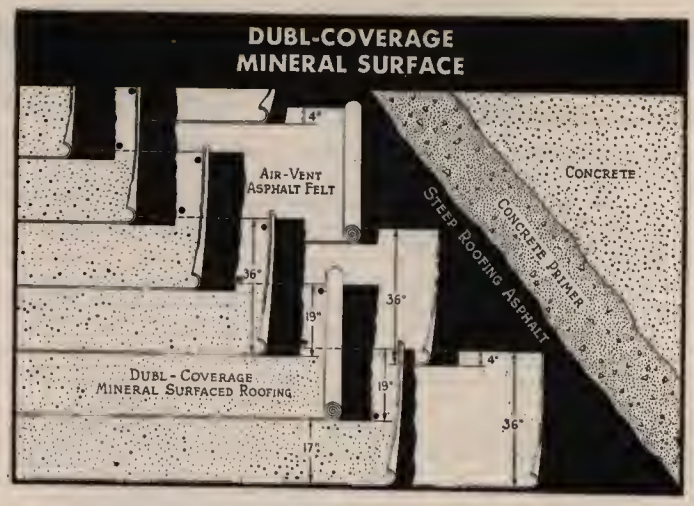
General Requirements and Conditions of Bond: *See page 6.*

Application of Roofing:

First — Coat entire surface with Ruberoid Concrete Primer and allow to dry thoroughly before proceeding. If roof is to be applied over insulation, primer may be omitted.

Second — Embed in Ruberoid Steep Roofing Asphalt one layer of Ruberoid Air-vent Asphalt Felt laid at right angles to incline of roof deck, lapping each sheet 4 in. over the preceding one and thoroughly mopping between this lap. Care shall be taken that felt is unrolled immediately behind the mop. If deck permits of nailing, nails shall be spaced at intervals not exceeding 18 in. along lower edge of each sheet. If nailing strips are used, each sheet shall be secured into each nailing strip with three nails spaced about 8 in. apart commencing at the lower edge.

Third — Embedding in Ruberoid Steep Roofing Asphalt, apply Ruberoid Dubl-Coverage mineral surfaced roofing over entire surface. Sheets shall be laid at right angles to incline of roof deck and the



selvage edge of each sheet shall be stagger nailed at intervals not exceeding 12 in. if the deck permits nailing. If nailing strips are used each sheet shall be secured into each nailing strip with three nails spaced equally apart along selvage. Care must be exercised in mopping selvage so that there will be no drippage down over the preceding sheet and the edge of each sheet must be stepped into the hot mopping so that all laps will be securely sealed. Mopping must be done immediately ahead of the unrolling sheet of roofing and at no time is it permitted to mop more than 3 feet ahead of the roll.

Fourth — End laps shall be 6 in. in width and the underlying edge shall be nailed on 6 in. centers, mopped and the overlying edge stepped down firmly into the mopping.

Fifth — If the incline of the roof deck exceeds 4 in. per foot the Dubl-Coverage may be laid parallel with the incline of the roof deck, provided the laps face away from the prevailing wind direction in the locality of the job.

Sixth — The flat portion of the valleys shall be constructed in accordance with Ruberoid Spec. No. 107.

SPEC. NO. 106 (10-year Bond)

For use over board sheathing, (with or without insulation —no underlay) poured gypsum*, precast gypsum block* or gypsum plank*

(For inclines not exceeding 2" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 10-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: If over boards, the roof deck shall be constructed of seasoned lumber, smooth and securely nailed, and free from large cracks or knot holes. It shall be properly graded to outlets and swept clean and free from all loose material and cant strips provided at all vertical surfaces.

If the roof deck is of poured or precast gypsum it must be visibly surface-dry, free from traces of frost or ice, smooth and properly graded to drains or outlets.

General Requirements and Conditions of Bond: *See page 6.*

Application of Roofing:

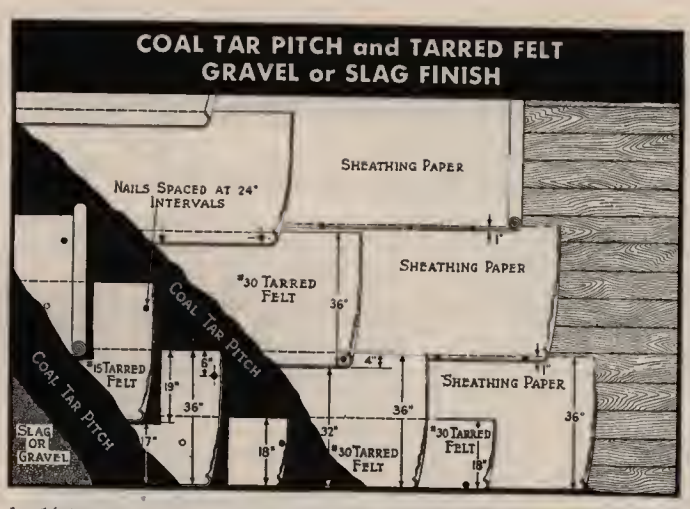
First — Lay one thickness of sheathing paper, weighing not less than 5 lbs. per 100 sq. ft., lapping the sheets at least 1 in. If gypsum or insulation is used, sheathing paper may be omitted.

Second — Over the entire surface lay one ply of Ruberoid No. 30 Tarred Felt, lapping each sheet 4 in. over the preceding one, and nailing along the lap as often as is necessary to secure, until the remaining felt is laid.

Third — Coat the entire surface uniformly with Ruberoid Coal Tar Pitch.

Fourth — Over the entire surface lay two plies of Ruberoid No. 15 Tarred Felt, lapping each sheet 19 in. over the preceding one, mopping with Ruberoid Coal Tar Pitch the full 19 in. on each sheet, so that in no place shall felt touch felt. The back edge of each sheet shall be nailed at intervals of 24 in. at a distance not greater than 6 in. from back edge of sheet. Such nailing as is necessary shall be done so that all nails are covered by not less than one ply of felt. The felts shall be cut off at the angle of the roof deck and walls or vertical surfaces.

Fifth — Over entire surface pour a uniform coating of Ruberoid Coal Tar Pitch into which, while hot, embed not less than 400 lbs. of gravel or 300 lbs. of slag for each 100 sq. ft. Gravel or slag shall



be ¼ in. to ⅝ in. in size, dry and free from dirt. If roof is applied during cold weather, or slag or gravel is damp, it shall be heated and dried immediately before application.

Felt shall be laid without wrinkles or buckles. Pitch shall not be heated to exceed 400° F.

All nailing shall be done with roofing nails driven through flat tin caps or with 10 gauge roofing nails having heads of not less than ⅝ in. in diameter.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

*** In applying this specification over any of the gypsum decks as noted, if a single-thickness base sheet is required it shall be lap nailed and stagger nailed at intervals of 6 in. and 18 in. respectively. If two single-thickness base sheets are required, each sheet shall be front-nailed on 12 in. centers 4 in. up from the lower edge.**

Nailing shall be done with 1½ in. bright (not galvanized) nails with minimum head diameters of ⅝ in.

Red Rosin-sized sheathing may be omitted. Care shall be taken that not less than 400 lbs. per square of gravel or slag be applied on all areas.

SPEC. NO. 106SD (10-year Bond)

For use over board sheathing, (with or without insulation —no underlay) poured gypsum*, precast gypsum block* or gypsum plank*

(For inclines not exceeding 2" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 10-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: If over boards, the roof deck shall be constructed of seasoned lumber, smooth and securely nailed, and free from large cracks or knot holes. It shall be properly graded to outlets and swept clean and free from all loose material.

If the roof deck is of poured or precast gypsum it must be visibly surface-dry, free from traces of frost or ice, smooth and properly graded to drains or outlets.

General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

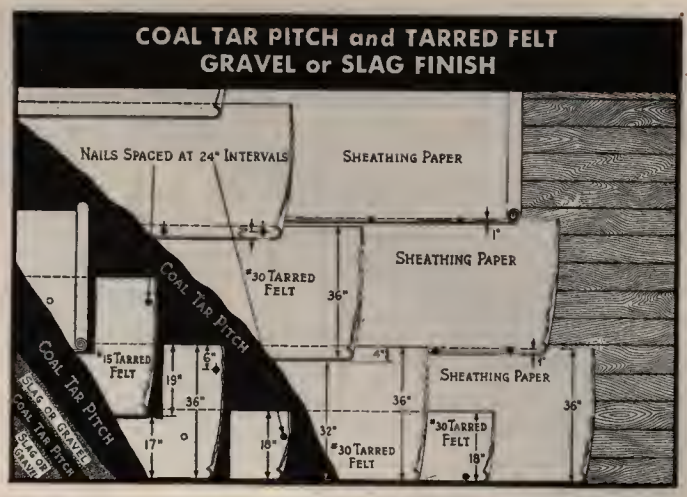
First — Lay one thickness of sheathing paper, weighing not less than 5 lbs. per 100 sq. ft., lapping the sheets at least 1 in. If gypsum is used, sheathing paper may be omitted.

Second — Over the entire surface lay one ply of Ruberoid No. 30 Tarred Felt, lapping each sheet 4 in. over the preceding one, and nailing along the lap as often as is necessary to secure, until the remining felt is laid.

Third — Coat entire surface uniformly with Ruberoid Coal Tar Pitch.

Fourth — Over entire surface lay two plies of Ruberoid No. 15 Tarred Felt, lapping each sheet 19 in. over the preceding one, mopping with Ruberoid Coal Tar Pitch the full 19 in. on each sheet, so that in no place shall felt touch felt. Back edge of each sheet shall be nailed at intervals of 24 in. at a distance not greater than 6 in. from the back edge of the sheet. Such nailing as is necessary shall be done so that all nails are covered by not less than one ply of felt. Felts shall be cut off at angle of roof deck and walls or vertical surfaces.

Fifth — Over entire surface pour a uniform coating of Ruberoid Coal Tar Pitch into which while hot, embed approximately 200 lbs. of gravel or 150 lbs. of slag for each 100 sq. ft. Gravel or slag shall be ¼ in. to ⅝ in. in size, dry and free from dirt. Entire surface shall



then be thoroughly swept with a street broom and all loose particles of gravel removed. A heavy coating of Ruberoid Coal Tar Pitch shall then be mopped on, into which, while hot, embed approximately 200 lbs. of gravel or 150 lbs. of slag per square.

The entire surface shall again be thoroughly swept with a street broom and all loose particles of gravel removed.

Felt shall be laid without wrinkles or buckles. Pitch shall not be heated to exceed 400° F.

All nailing shall be done with roofing nails driven through flat tin caps or with 10 gauge roofing nails having heads of not less than ⅝ in. in diameter.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

*** In applying this specification over any of the gypsum decks as noted, if a single-thickness base sheet is required it shall be lap nailed and stagger nailed at intervals of 6 in. and 18 in. respectively. If two single-thickness base sheets are required, each sheet shall be front-nailed on 12 in. centers 4 in. up from the lower edge.**
Nailing shall be done with 1½ in. bright (not galvanized) nails with minimum head diameters of ⅝ in.
Red Rosin-sized sheathing may be omitted. Care shall be taken that not less than 400 lbs. per square of gravel or slag be applied on all areas.

SPEC. NO. 107 (10-year Bond)

For use over poured concrete, precast concrete tile or book tile

(For inclines not exceeding 1" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 10-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck shall be thoroughly dry, smooth and free from loose material, and properly graded to outlets.

Where book tile is used the surface of the tile shall be covered with Portland cement mortar 1 in. thick with smooth and even finish.

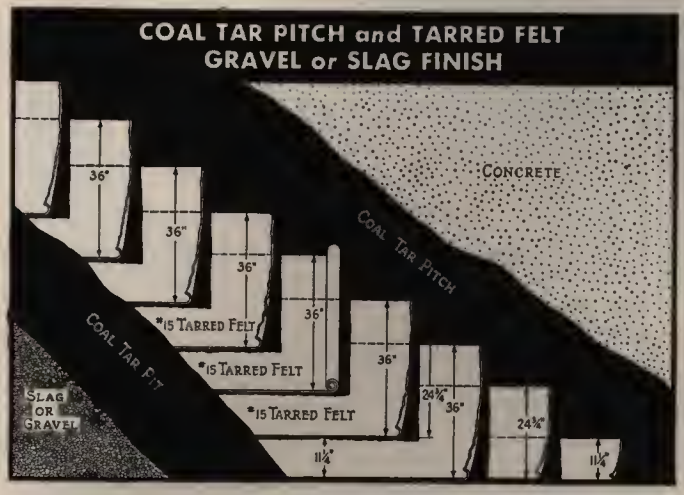
General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — Coat the deck uniformly with Ruberoid Coal Tar Pitch. If precast concrete tile is used, the surface shall be spot or strip mopped.

Second — Over the entire surface lay three plies of Ruberoid No. 15 Tarred Felt, lapping each sheet 24¾ in. over the preceding one and mopping with Ruberoid Coal Tar Pitch the full 24¾ in. on each sheet so that in no place shall felt touch felt. The felt shall be cut off at the angle of the roof deck and walls or vertical surfaces.

Third — Over the entire surface pour a uniform coating of Ruberoid Coal Tar Pitch into which, while hot, embed not less than 400 lbs. of gravel or 300 lbs. of slag for each 100 sq. ft. The gravel or slag shall be from ¼ in. to ⅝ in. in size, dry and free from dirt. If the roof is



applied during cold weather, or slag or gravel is damp, it shall be heated and dried immediately before application.

All felt shall be laid without wrinkles or buckles. Pitch shall not be heated to exceed 400° F.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

SPEC. NO. 107SD (10-year bond)

For use over poured concrete, precast concrete tile, book tile or rigid insulation

(For inclines not exceeding 1″ per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 10-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck shall be free from frost, thoroughly dry, smooth and free from loose material, and properly graded to outlets.

Where book tile is used the surface of the tile shall be covered with Portland cement mortar 1 in. thick with smooth and even finish.

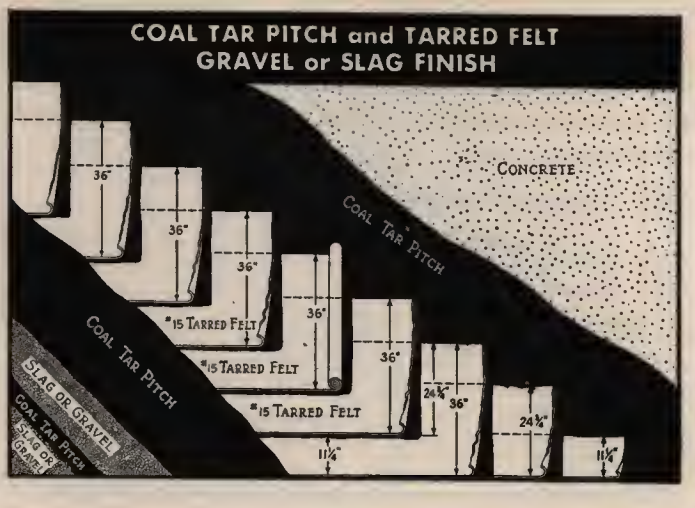
General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — Coat the deck uniformly with Ruberoid Coal Tar Pitch. If precast concrete tile is used, the surface shall be spot or strip mopped.

Second — Over the entire surface lay three plies of Ruberoid No. 15 Tarred Felt, lapping each sheet 24¾ in. over the preceding one and mopping with Ruberoid Coal Tar Pitch the full 24¾ in. on each sheet so that in no place shall felt touch felt. The felt shall be cut off at the angle of the roof deck and walls or vertical surfaces.

Third — Over the entire surface pour a uniform coating of Ruberoid Coal Tar Pitch into which, while hot, embed approximately 200 lbs. of gravel or 150 lbs. of slag for each 100 sq. ft. The gravel or slag shall be from ¼ in to ⅝ in. in size, dry and free from dirt. The entire surface shall then be thoroughly swept with a street broom and all loose particles of gravel removed, following which a heavy coating of



Ruberoid Coal Tar Pitch shall be mopped on, into which while hot approximately 200 lbs. of gravel or 150 lbs. of slag per square shall be embedded.

The entire surface shall again be thoroughly swept with a street broom and all loose particles of gravel removed.

All felt shall be laid without wrinkles or buckles. Pitch shall not be heated to exceed 400° F.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

SPEC. NO. 108 (10-year bond)

For use over board sheathing

(For inclines from 1″ to 4″ per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 10-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: If over boards, the roof deck shall be constructed of seasoned lumber, smooth and securely nailed, and free from large cracks or knot holes. It shall be properly graded to outlets and swept clean and free from all loose material and cant strips provided at all vertical surfaces.

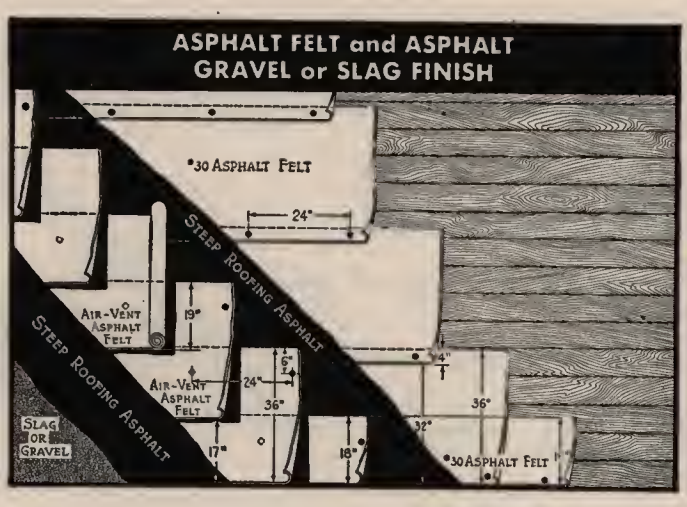
General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — Over the entire surface lay one ply of Ruberoid No. 30 Asphalt Felt, lapping each sheet 4 in. over the preceding one and nailing along the lap as often as is necessary to secure, until the remaining felt is laid.

Second — Over the entire surface embed in Ruberoid Roofing Asphalt two plies of Ruberoid Air-vent Asphalt Felt, lapping each sheet 19 in. over the preceding one, rolling each sheet immediately behind the mop to insure a uniform coating of hot asphalt so that in no place shall felt touch felt. Each sheet shall be nailed 6 in. from the back edge at intervals of 24 in. Felts shall be cut off at angle of roof deck and all walls or vertical surfaces.

Third — Over the entire surface spread a uniform coating of Ruberoid Roofing Asphalt into which, while hot, embed not less than 400 lbs. of gravel or 300 lbs. of slag per 100 sq. ft. Gravel or slag must be approximately ¼ in. to ⅝ in. in size, dry and free from dirt. If roof is applied during cold weather, or slag or gravel is damp, it shall be heated and dried immediately before application.



Felt shall be laid without wrinkles or buckles. Asphalt shall not be heated to exceed 450° F.

All nailing shall be done either with galvanized roofing nails driven through flat tip caps or with 10 gauge galvanized roofing nails having heads of not less than ⅝ in. in diameter.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

If this roof is to be applied over insulating material, use the method of application as shown in Ruberoid Spec. No. 154.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

SPEC. NO. 109 (10-year Bond)

For use over poured concrete, precast concrete tile, book tile, poured gypsum*, precast gypsum block* or rigid insulation.

(For inclines from 1" to 3" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 10-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck shall be thoroughly dry, smooth and free from loose material and frost, and properly graded to outlets.

Where book tile is used the surface of the tile shall be covered with Portland cement mortar 1 in. thick with smooth and even finish.

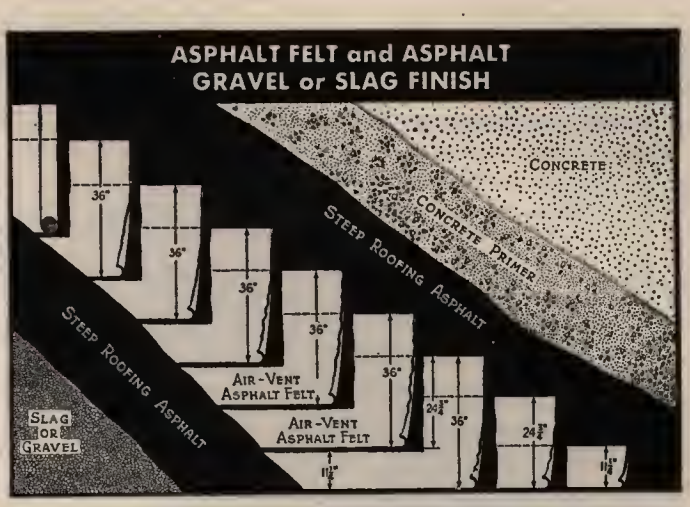
General Requirements and Conditions of Bond: *See page 6.*

Application of Roofing:

First — Coat the entire surface with Ruberoid Concrete Primer applied cold and allow same to dry thoroughly. Where plastic material is used to caulk the joints of the blocks, the coating of primer shall be held back 2 in. from all joints.

Second — Over the entire surface embed in Ruberoid Roofing Asphalt three plies of Ruberoid Air-vent Asphalt Felt, lapping each sheet 24¾ in. over the preceding one, rolling each sheet immediately behind the mop to insure a uniform coating of hot asphalt, so that in no place shall felt touch felt. All felts shall be cut off at the angle of the roof deck and walls or vertical surfaces.

Third — Over the entire surface spread a uniform coating of Ruberoid Roofing Asphalt into which, while hot, embed not less than 400 lbs. of gravel or 300 lbs. of slag per 100 sq. ft. Gravel or slag must be approximately ¼ in. to ⅝ in. in size, thoroughly dry and free from dust or foreign matter. If roof is applied during cold weather, or the slag or gravel is damp, it shall be heated and dried immediately before application.



The felt shall be laid without wrinkles or buckles, and the asphalt shall not be heated to exceed 450° F.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

*** When this specification is used over a gypsum deck, the deck must be primed and strip mopped, such strip mopping of asphalt to be 12 in. in width and at intervals of not to exceed 18 in.**

All sheets of felt must be back nailed at intervals of 12 in. on center 6 in. down from the upper edge and nailing must be done with 1½ in. bright, (not galvanized) nails of ⅝ in. head diameter.

When applied in this manner over gypsum, this roof is suitable for inclines up to 4 in. per foot.

SPEC. NO. 150 (15-year Bond)

For use over board sheathing, poured gypsum* or precast gypsum block*

(Not to be used on inclines less than 1" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 15-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

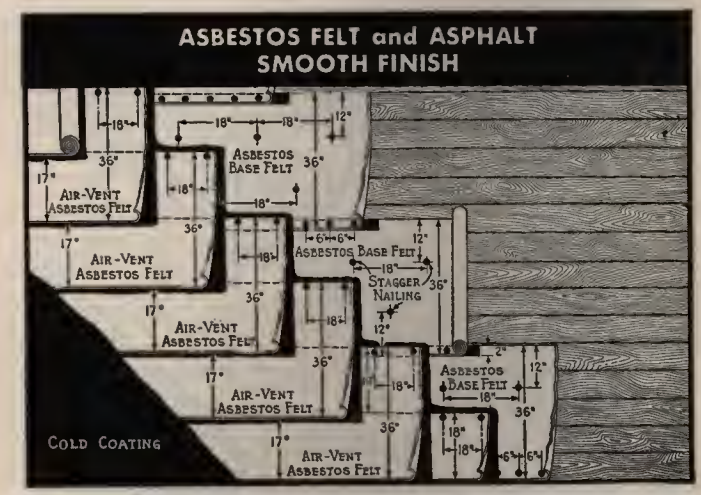
Work by Others: The roof deck must be constructed of seasoned lumber, dressed on upper side, dry and free from large cracks and knot holes. Roof boards must be securely nailed in place, leaving no nail heads above the wood surfaces. Surfaces must be properly graded to outlets and cant strips provided in the angle formed between the roof and vertical surfaces.

General Requirements and Conditions of Bond: *See page 6.*

Application of Roofing:

First — Lay one ply of Ruberoid No. 60 Asbestos Base Felt, lapping each sheet 2 in. at edges and not less than 6 in. at end laps. Nail at 6 in. intervals along the lap, and also at intervals of 18 in. on a line 12 in. from each edge of the sheet, staggering the nails. This felt shall be turned up not less than 4 in. along all walls and vertical surfaces.

Second — Over the entire surface embed in Ruberoid Bond Roofing Asphalt two plies of Ruberoid Air-vent Asbestos Felt, lapping each sheet 19 in. over the preceding one and rolling each sheet immediately behind the mop to insure a uniform coating of hot asphalt so that in no place shall felt touch felt. Each sheet shall be nailed along the back edge from 1 to 1½ in. down at intervals of approximately 18 in. These felts shall be cut off at the angle of the roof deck and all walls or vertical surfaces.



Third — Over the entire surface brush a uniform coating of Ruberoid Cold Coating, using not more than 20 lbs. per 100 sq. ft.

Felt shall be laid without wrinkles or buckles. It shall be rolled immediately behind the hot mop and firmly embedded by brooming the felt. Asphalt shall not be heated to exceed 450° F.

All nailing shall be done either with galvanized roofing nails driven through flat tin caps or with 10 gauge galvanized roofing nails having heads of not less than ⅝ in. in diameter.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

*** This specification shall be followed over poured gypsum or precast gypsum decks except that all nailing shall be done with 1½ in. bright (not galvanized) nails having ⅝ in. diameter heads. The deck must be primed and strip mopped with asphalt when applying the base sheets, such strip moppings to be at least 12 in. in width and at intervals not to exceed 18 in.**

SPEC. NO. 151 (15-year Bond)

For use over board sheathing (with or without insulation-no underlay), poured gypsum*, precast gypsum block* or gypsum plank*
(For inclines not exceeding 2" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 15-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: If over boards, the roof deck shall be constructed of seasoned lumber, smooth and securely nailed, and free from large cracks or knot holes. It shall be properly graded to outlets and swept clean and free from all loose material.

If the roof deck is of poured or precast gypsum it must be visibly surface-dry, free from traces of frost or ice, smooth and properly graded to drains or outlets.

General Requirements and Conditions of Bond: *See page 6.*

Application of Roofing:

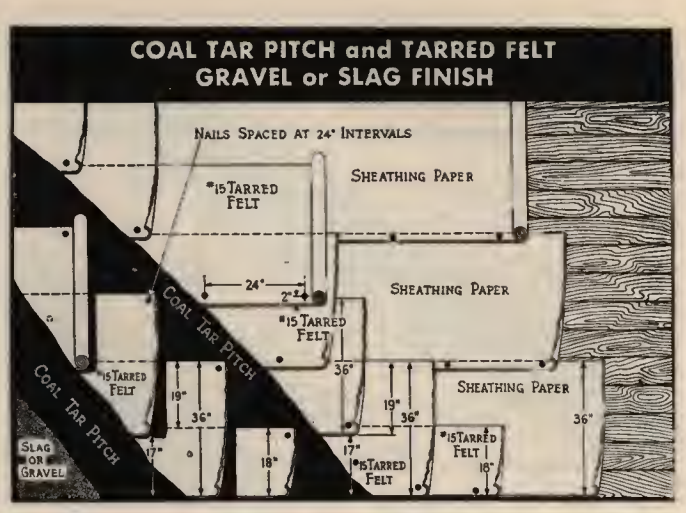
First — Lay one thickness of sheathing paper, weighing not less than 5 lbs. per 100 sq. ft., lapping the sheets at least 1 in. If gypsum or insulaton is used, sheathing paper may be omitted.

Second — Over entire surface lay two plies of Ruberoid No. 15 Tarred Felt, lapping each sheet 19 in. over the preceding one, and turning up felts not less than 4 in. along all vertical surfaces. Nail as often as is necessary to secure, until remaining felt is laid.

Third — Coat entire surface uniformly with Ruberoid Coal Tar Pitch.

Fourth — Over entire surface lay two plies of Ruberoid No. 15 Tarred Felt, lapping each sheet 19 in. over preceding one, mopping with Ruberoid Coal Tar Pitch the full 19 in. on each sheet, so that in no place shall felt touch felt. Back edge of each sheet shall be nailed at intervals of 24 in. at a distance not greater than 6 in. from back edge of sheet. Such nailing as is necessary shall be done so that all nails are covered by not less than one ply of felt. Felts shall be cut off at angle of roof deck and walls or vertical surfaces.

Fifth — Over entire surface pour a uniform coating of Ruberoid Coal Tar Pitch into which, while hot, embed not less than 400 lbs. of gravel or 300 lbs. of slag for each 100 sq. ft. Gravel or slag shall be ¼ in. to ⅝ in. in size, dry and free from dirt. If the roof is applied during cold weather, or slag or gravel is damp, it shall be heated and



dried immediately before application.

Felt shall be laid without wrinkles or buckles. Pitch shall not be heated to exceed 400° F.

All nailing shall be done either with roofing nails driven through flat tin caps or with 10 gauge roofing nails having heads of not less than ⅝ in. in diameter.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

*** In applying this specification over any of the gypsum decks as noted, if a single-thickness base sheet is required it shall be lap nailed and stagger nailed at intervals of 6 in. and 18 in. respectively. If two single-thickness base sheets are required, each sheet shall be front-nailed on 12 in. centers 4 in. up from the lower edge.**

Nailing shall be done with 1½ in. bright (not galvanized) nails with minimum head diameters of ⅝ in.

Red Rosin-sized sheathing may be omitted. Care shall be taken that not less than 400 lbs. per square of gravel or slag be applied on all areas.

SPEC. NO. 151SD (15-year Bond)

For use over board sheathing (with or without insulation—no underlay), poured gypsum*, precast gypsum block* or gypsum plank*

The roofing shall be a Ruberoid Bonded Roof carrying a 15-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: If over boards, the roof deck shall be constructed of seasoned lumber, smooth and securely nailed. and free from large cracks or knot holes. It shall be properly graded to outlets and swept clean and free from all loose material.

If the roof deck is of poured or precast gypsum it must be visibly surface-dry, free from traces of frost or ice, smooth and properly graded to drains or outlets.

General Requirements and Conditions of Bond: *See page 6.*

Application of Roofing:

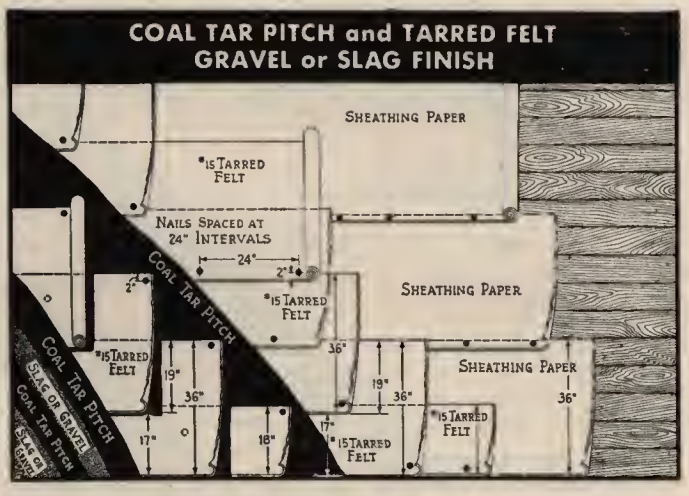
First — Lay one thickness of sheathing paper, weighing not less than 5 lbs. per 100 sq. ft., lapping sheets at least 1 in. If precast gypsum is used, sheathing paper may be omitted.

Second — Over entire surface lay two plies of Ruberoid No. 15 Tarred Felt, lapping each sheet 19 in. over preceding one and turning up these felts not less than 4 in. along all vertical surfaces. Nail as often as necessary to secure, until remaining felt is laid.

Third — Coat the entire surface uniformly with Ruberoid Coal Tar Pitch.

Fourth — Over entire surface lay two plies of Ruberoid No. 15 Tarred Felt, lapping each sheet 19 in. over preceding one, mopping with Ruberoid Coal Tar Pitch the full 19 in. on each sheet, so that in no place shall felt touch felt. Back edge of each sheet shall be nailed at intervals of 24 in. at a distance not greater than 6 in. from back edge of the sheet. Such nailing as is necessary shall be done so that all nails are covered by not less than one ply of felt. Felts shall be cut off at angle of roof deck and walls or vertical surfaces.

Fifth — Over entire surface pour a uniform coating of Ruberoid Coal Tar Pitch into which, while hot, embed approximately 200 lbs. of gravel or 150 lbs. of slag for each 100 sq. ft. Gravel or slag shall he ¼ in. to ⅝ in. in size, dry and free from dirt. Entire surface shall then be thoroughly swept with a street broom and all loose particles of gravel removed. A heavy coating of Ruberoid Coal Tar Pitch shall then be mopped on into which, while hot, embed approximately 200 lbs.



of gravel or 150 lbs. of slag per square.

The entire surface shall again be thoroughly swept with a street broom and all loose particles of gravel removed.

Felt shall be laid without wrinkles or buckles. Pitch shall not be heated to exceed 400° F.

All nailing shall be done either with roofing nails driven through flat tin caps or with 10 gauge roofing nails having heads of not less than ⅝ in. in diameter.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

*** In applying this specification over any of the gypsum decks as noted, if a single-thickness base sheet is required it shall be lap nailed and stagger nailed at intervals of 6 in. and 18 in. respectively. If two single-thickness base sheets are required, each sheet shall be front-nailed on 12 in. centers 4 in. up from the lower edge.**

Nailing shall be done with 1½ in. bright (not galvanized) nails with minimum head diameters of ⅝ in.

Red Rosin-sized sheathing may be omitted. Care shall be taken that not less than 400 lbs. per square of gravel or slag be applied on all areas.

SPEC. NO. 151STP (15-year Bond)

For use over board sheathing (without insulation) or precast gypsum block

(For inclines from 2" to 5" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 15-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: If over boards, the roof deck shall be constructed of seasoned lumber, smooth and securely nailed, and free from large cracks or knot holes. It shall be properly graded to outlets and swept clean and free from all loose material and cant strips provided at vertical surfaces.

General Requirements and Conditions of Bond: *See page 6.*

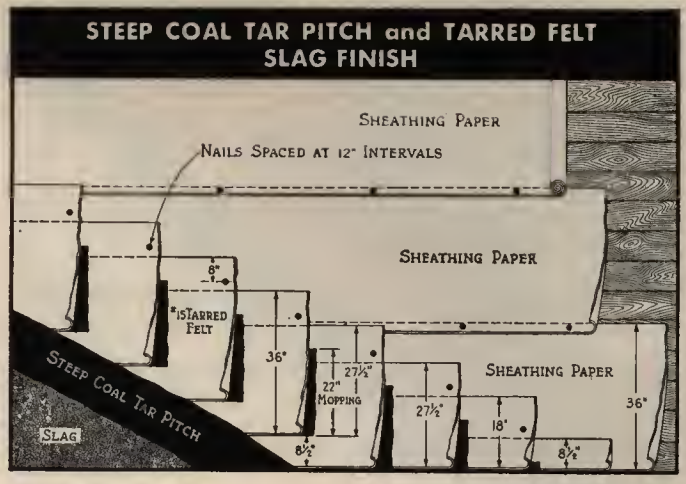
Application of Roofing:

First — Lay one thickness of sheathing paper, weighing not less than 5 lbs. per sq. ft., lapping the sheets at least 1 in. If precast gypsum block is used, sheathing paper may be omitted.

Second — Over the entire surface lay four plies of Ruberoid No. 15 Tarred Felt, lapping each sheet 27½ in. over the preceding one. Each sheet shall be nailed at intervals not to exceed 12 in. along a line about 8 in. from its upper edge.

Third — Mop with Ruberoid Steep Coal Tar Pitch between each sheet for a distance of about 22 in. Felt shall be firmly imbedded into the hot moppings. They must be rolled into the moppings and not "dropped".

Fourth — Over the entire surface spread with a mop a uniform coating of Ruberoid Steep Coal Tar Pitch into which, while hot, embed



not less than 250 lbs. per sq. of clean dry slag ¼ in. to ⅝ in. in size. The completed surface shall be swept with a broom in order to remove all loose slag.

The felt shall be laid without wrinkles or buckles, and the pitch shall not be heated to exceed 350° F.

All nailing shall be done either with galvanized roofing nails driven through flat tin caps or with 10 gauge galvanized roofing nails having heads not less than ⅝ in. in diameter.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

SPEC. NO. 152 (15-year Bond)

For use over poured concrete, precast concrete tile or book tile

(For inclines not exceeding 1" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 15-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof shall be thoroughly dry, smooth and free from loose material, and properly graded to outlets.

Where book tile is used the surface of the tile shall be covered with Portland cement mortar 1 in. thick with a smooth and even finish.

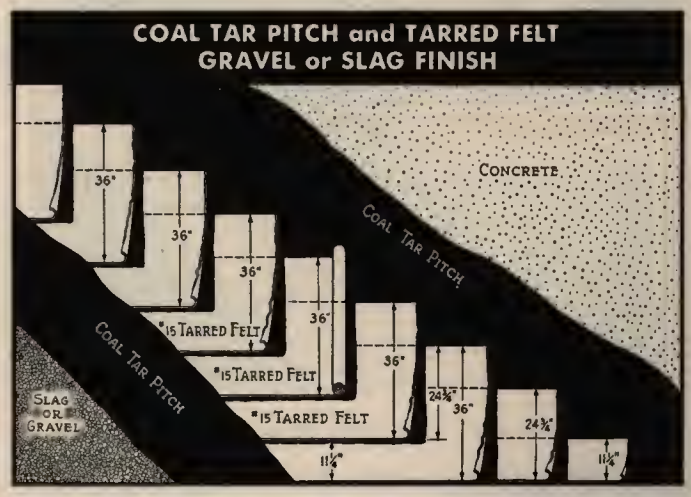
General Requirements and Conditions of Bond: *See page 6.*

Application of Roofing:

First — Coat the deck uniformly with Ruberoid Coal Tar Pitch. If precast concrete tile is used, the surface shall be spot or strip mopped.

Second — Over the entire surface lay three plies of Ruberoid No. 15 Tarred Felt lapping each sheet 24¾ in. over the preceding one and mopping with Ruberoid Coal Tar Pitch the full 24¾ in. on each sheet so that in no place shall felt touch felt. The felt shall be cut off at the angle of the roof deck and walls or vertical surfaces.

Third — Over the entire surface pour a uniform coating of Ruberoid Coal Tar Pitch into which, while hot, embed not less than 400 lbs. of gravel or 300 lbs. of slag for each 100 sq. ft. The gravel or slag



shall be from ¼ in. to ⅝ in. in size, dry and free from dirt. If the roof is applied during cold weather, or slag or gravel is damp, it shall be heated and dried immediately before application.

All felt shall be laid without wrinkles or buckles. Pitch shall not be heated to exceed 400° F.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

SPEC. NO. 152SD (15-Year Bond)

For use over poured concrete, precast concrete tile or book tile

(For inclines not exceeding 1" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 15-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck shall be thoroughly dry, smooth and free from loose material, and properly graded to outlets.

Where book tile is used the surface of the tile shall be covered with Portland cement mortar 1 in. thick with smooth and even finish.

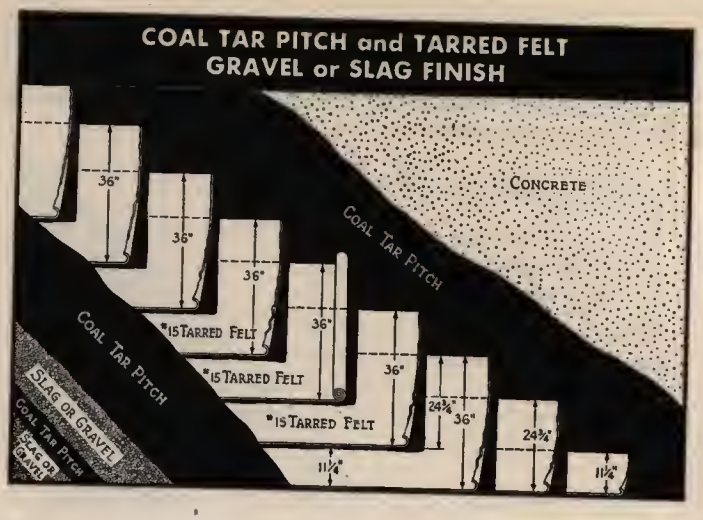
General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — Coat the deck uniformly with Ruberoid Coal Tar Pitch. If precast concrete tile is used, the surface shall be spot or strip mopped.

Second — Over the entire surface lay three plies of Ruberoid No. 15 Tarred Felt lapping each sheet 24¾ in. over the preceding one and mopping with Coal Tar Pitch the full 24¾ in. on each sheet so that in no place shall felt touch felt. The felt shall be cut off at the angle of the roof deck and walls or vertical surfaces.

Third — Over the entire surface pour a uniform coating of Ruberoid Coal Tar Pitch into which, while hot, embed approximately 200 lbs. of gravel or 150 lbs. of slag for each 100 sq. ft. The gravel or slag shall be from ¼ in. to ⅝ in. in size, dry and free from dirt. The entire surface shall then be thoroughly swept with a street broom and all loose particles of gravel removed, following which a heavy coating of Ruberoid Coal Tar Pitch shall be mopped on, into which, while hot,



approximately 200 lbs. of gravel or 150 lbs. of slag per square shall be embedded.

The entire surface shall again be thoroughly swept with a street broom and all loose particles of gravel removed.

All felt shall be laid without wrinkles or buckles. Pitch shall not be heated to exceed 400° F.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

SPEC. NO. 152STP (15-Year Bond)

For use over poured concrete, precast concrete tile, book tile or poured gypsum

(For inclines from 1" to 5" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 15-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck shall be thoroughly dry, smooth and free from loose material, and properly graded to outlets.

Where book tile is used the surface of the tile shall be covered with Portland cement mortar 1 in. thick with a smooth and even finish.

Nailing strips must be provided in concrete decks.

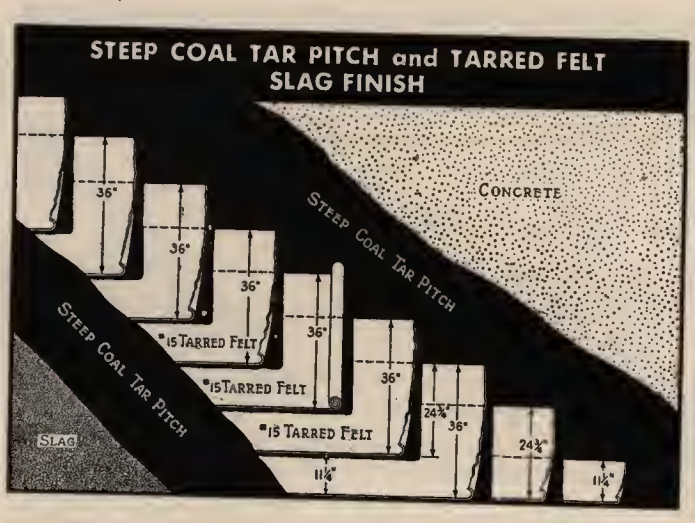
General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

Fifth — Over the entire surface mop solid with Ruberoid Steep Coal Tar Pitch three full thicknesses of Ruberoid No. 15 Tarred Felt lapping each sheet 24¾ in. over the preceding one and mopping the full width of the 24¾ in. on each sheet, rolling the sheets.

Second — Each sheet shall be nailed with nails at intervals not to exceed 12 in. on a line 8 in. from its upper edge. Where nailing strips are used, each sheet shall be nailed with two nails into each nailing strip, the nailing to be done approximately 6 in. and 8 in., respectively, from the upper edge of each sheet.

Third — Over the entire surface spread with a mop a uniform coating of Ruberoid Steep Coal Tar Pitch into which, while hot,



embed not less than 250 lbs. per sq. of clean dry slag ¼ in. to ⅝ in. in size. The completed surface shall be swept with a broom in order to remove all loose slag.

The felt shall be laid without wrinkles or buckles, and the pitch shall not be heated to exceed 350° F.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

SPEC. NO. 153 (15-year Bond)

For use over board sheathing

(For inclines from 1″ to 4″ per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 15-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: If over boards, the roof deck shall be constructed of seasoned lumber, smooth and securely nailed, and free from large cracks or knot holes. It shall be properly graded to outlets and swept clean and free from all loose material.

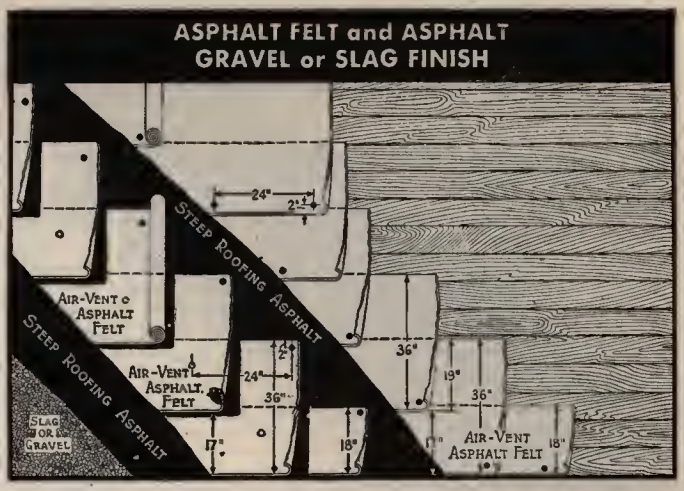
General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — Over the entire surface lay two plies of Ruberoid No. 15 Air-vent Asphalt Felt lapping each sheet 19 in. over the preceding one and turning these felts up not less than 4 in. along all vertical surfaces. Nail as often as is necessary to secure, until the remaining felt is laid.

Second — Over the entire surface embed in Ruberoid Roofing Asphalt two plies of Ruberoid Air-vent Asphalt Felt, lapping each sheet 19 in. over the preceding one, rolling each sheet immediately behind the mop to insure a uniform coating of hot asphalt so that in no place shall felt touch felt. Each sheet shall be nailed 6 in. from the back edge at intervals of 24 in. These felts shall be cut off at the angle of the roof deck and all walls or vertical surfaces.

Third — Over the entire surface spread a uniform coating of Ruberoid Roofing Asphalt into which, while hot, embed not less than 400 lbs. of gravel or 300 lbs. of slag per 100 sq. ft. Gravel or slag must be approximately ¼ in. to ⅝ in. in size, dry and free from dirt. If roof is applied during cold weather, or slag or gravel is damp, it shall be heated and dried immediately before application.



Felt shall be laid without wrinkles or buckles. Asphalt shall not be heated to exceed 450° F.

All nailing shall be done cither with galvanized roofing nails driven through flat tin caps or with 10 gauge galvanized roofing nails having heads of not less than ⅝ in. in diameter.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

If this roof is to be applied over insulating material, use the method of application as shown in Ruberoid Spec. No. 154.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

SPEC. NO. 154 (15-year Bond)

(For inclines from 1″ to 4″ per foot)

For use over poured concrete, precast concrete tile, book tile, poured gypsum*, precast gypsum block* or rigid insulation

The roofing shall be a Ruberoid Bonded Roof carrying a 15-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck shall be thoroughly dry, smooth and free from loose material, and properly graded to outlets.

Where book tile is used the surface of the tile shall be covered with Portland cement mortar 1 in. thick with smooth and even finish.

If the roof deck is of poured or precast gypsum it must be visibly surface-dry, free from traces of frost or ice, smooth and properly graded to drains or outlets.

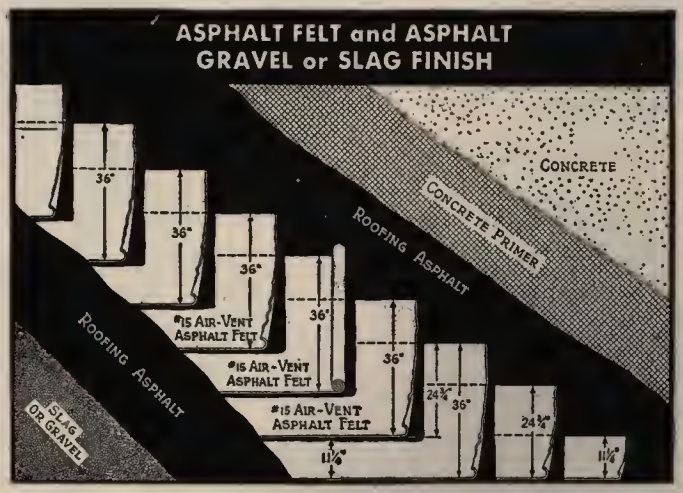
General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — Coat the entire surface with Ruberoid Concrete Primer applied cold and allow same to dry thoroughly. Where plastic material is used to caulk the joints of the blocks, the coating of primer shall be held back 2 in. from all joints.

Second — Over the entire surface embed in Ruberoid Roofing Asphalt three plies of Ruberoid Air-vent Asphalt Felt, lapping each sheet 24¾ in. over the preceding one. rolling each sheet immediately behind the mop to insure a uniform coating of hot asphalt, so that in no place shall felt touch felt. All felts shall be cut off at the angle of the roof deck and walls or vertical surfaces.

Third — Over the entire surface spread a uniform coating of Ruberoid Roofing Asphalt into which, while hot, embed not less than 400 lbs. of gravel or 300 lbs. of slag per 100 sq. ft. Gravel or slag must be approximately ¼ in. to ⅝ in. in size, thoroughly dry and free from dust or foreign matter. If roof is applied during cold weather, or the slag or gravel is damp, it shall be heated and dried immediately before application.



The felt shall be laid without wrinkles or buckles, and the asphalt shall not be heated to exceed 450° F.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

*** When this specification is used over a gypsum deck, the deck must be primed and strip mopped, such strip mopping of asphalt to be 12 in. in width and at intervals of not to exceed 18 in.**

All sheets of felt must be back nailed at intervals of 12 in. on center 6 in. down from the upper edge and nailing must be done with 1½ in. bright, (not galvanized) nails of ⅝ in. head diameter.

When applied in this manner over gypsum, this roof is suitable for inclines up to 4 in. per foot.

SPEC. NO. 156 (15-year Bond)

For use over board sheathing, poured gypsum* or precast gypsum block*

(Not to be used on inclines less than 1" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 15-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck must be constructed of seasoned lumber, dressed on upper side, dry and free from large cracks and knot holes. Roof boards must be securely nailed in place, leaving no nail heads above the wood surfaces. Surfaces must be properly graded to outlets and cant strips provided in the angle formed between the roof and vertical surfaces.

If the roof deck is of poured or precast gypsum it must be visibly surface-dry, free from traces of frost or ice, smooth and properly graded to drains or outlets.

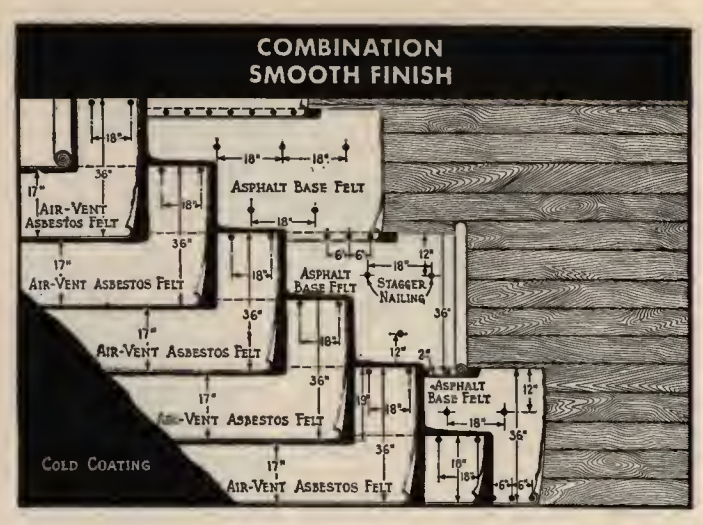
General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — Lay one ply of Ruberoid Asphalt Base Felt, lapping each sheet 2 in. at edges and not less than 6 in. at end laps. Nail at 6 in. intervals along the lap and also at intervals of 18 in. on a line 12 in. from each edge of the sheet, staggering the nails. This felt shall be turned up not less than 4 in. along all walls and vertical surfaces.

Second — Over the entire surface embed in Ruberoid Bond Roofing Asphalt two plies of Ruberoid Air-vent Asbestos Felt, lapping each ply 19 in. over the preceding one and rolling each ply immediately behind the mop to insure a uniform coating of hot asphalt so that in no place shall felt touch felt. Each ply shall be nailed along the back edge at intervals of approximately 18 in. These felts shall be cut off at the angle of the roof deck and all walls or vertical surfaces.

Third — Over the entire surface brush a uniform coating of Ruberoid Cold Coating, using not more than 20 lbs. per 100 sq. ft.



Felt shall be laid without wrinkles or buckles. It shall be rolled immediately behind the hot mop and firmly embedded by brooming the felt. Asphalt shall not be heated to exceed 450° F.

All nailing shall be done either with galvanized roofing nails driven through flat tin caps or with 10 gauge galvanized roofing nails having heads of not less than ⅝ in. in diameter.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

If this roof is to be applied over insulating material, use the method of application as shown in Ruberoid Spec. No. 157.

*** This specification shall be followed over poured gypsum or precast gypsum decks except that all nailing shall be done with 1½ in. bright (not galvanized) nails having ⅝ in. diameter heads. The deck must be primed and strip mopped with asphalt when applying the base sheets, such strip moppings to be at least 12 in. in width and at intervals not to exceed 18 in.**

SPEC. NO. 157 (15-year Bond)

For use over poured concrete, precast concrete tile, or book tile

(Not to be used on inclines less than 1" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 15-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof shall be thoroughly dry, smooth and free from loose material, and properly graded to outlets.

Where book tile is used the surface of the tile shall be covered with Portland cement mortar 1 in. thick with a smooth and even finish.

Where poured gypsum or precast gypsum blocks are used, all felt shall be nailed as required when the roof deck is of boards.

For inclines exceeding 3 in. to the foot, if the deck is of concrete, wooden nailing strips must be provided at proper intervals.

Coves shall be provided in the angle formed between the roof and vertical surfaces.

General Requirements and Conditions of Bond: ***See page 6.***

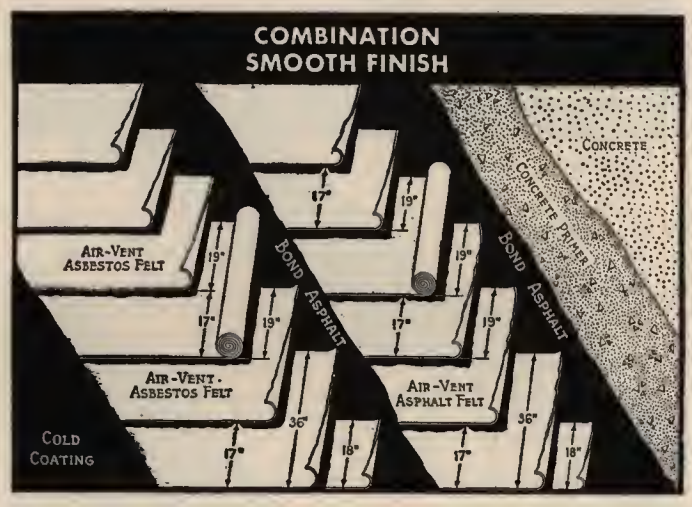
Application of Roofing:

First — Coat the entire surface with Ruberoid Concrete Primer applied cold, allowing same to dry thoroughly. Where plastic material is used to caulk the joints of blocks, the coating of primer shall be held back 2 in. from all joints.

Second — Over entire surface lay two plies of Ruberoid Air-vent Asphalt Felt in Ruberoid Bond Roofing Asphalt, lapping each ply 19 in. over the preceding one and rolling each ply immediately behind the mop to insure proper adhesion of all sheets. In no place shall felt touch felt. Felts shall be cut off at top of cove in angle of roof deck and all vertical surfaces.

On inclines exceeding 3 in. to the foot these sheets shall be nailed at intervals of 18 in. along the back edge into the nailing strips.

Third — Over the entire surface lay in Ruberoid Bond Roofing Asphalt two plies of Ruberoid Air-vent Asbestos Felt, lapping each ply 19 in. over the preceding one. rolling each ply immediately behind



the mop to insure a uniform coating of hot asphalt. In no place shall felt touch felt.

On inclines exceeding 3 in. to the foot, plies shall be nailed at intervals of 18 in. along back edge into nailing strips.

The felt shall be cut off at the angle of the roof deck and vertical surfaces.

Fourth — Over entire surface brush a uniform coating of Ruberoid Cold Coating, using not more than 20 lbs. per 100 sq. ft.

Felt shall be laid without wrinkles or buckles. It shall be rolled immediately behind the hot mop and firmly embedded by brooming the felt. Asphalt shall not be heated to exceed 450° F.

All nailing shall be done either with galvanized roofing nails driven through flat tin caps or with 10 gauge galvanized roofing nails having heads of not less than ⅝ in. in diameter.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

SPEC. NO. 158 (15-year Bond)

For use over rigid insulation only.

(Not to be used on inclines less than 1" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 15-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck shall be thoroughly dry, smooth and free from loose material, and must be properly graded to outlets.

For inclines exceeding 3 in. to the foot, if the deck is of concrete, wood nailing strips must be provided at proper intervals.

Coves shall be provided in the angle between the roof and the vertical surfaces.

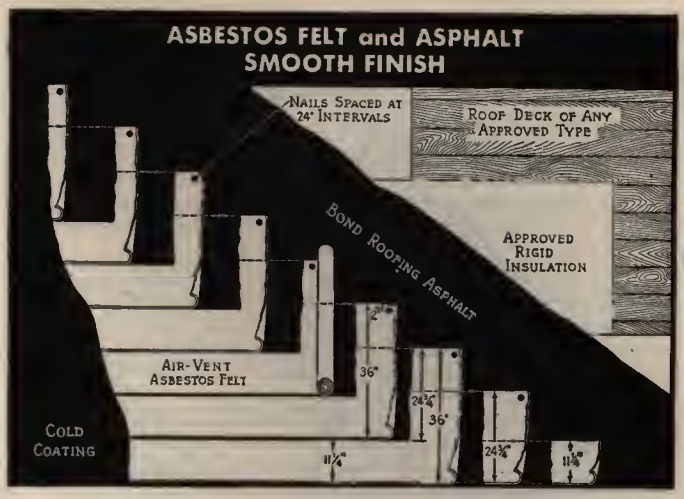
Where book tile is used the surface of the tile must be covered with Portland cement mortar 1 in. thick with a smooth and even finish.

General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — The insulating material must be firmly secured to the underlying roof deck by nailing, mopping or securing with clips so that there will be no movement.

Second — Over the entire surface embed in Ruberoid Bond Roofing Asphalt three plies of Ruberoid Air-vent Asbestos Felt, lapping each sheet 24¾ in. over the preceding one and rolling each sheet immediately behind the mop to insure a uniform coating of asphalt so that in no



place shall felt touch felt. These sheets shall be nailed at intervals of 24 in. 2 in. from the back edge. All three plies of felt shall be cut off at the angle of the roof deck and walls or vertical surfaces.

Third — Over the entire surface mop a uniform coating of Ruberoid Bond Roofing Asphalt or Ruberoid Cold Coating, using not more than 20 lbs. per 100 sq. ft.

Felt shall be laid without wrinkles or buckles. It shall be rolled immediately behind the mop and firmly embedded by brooming the felts. Asphalt shall not be heated to exceed 450° F.

All roofing shall be done to the satisfaction and approval of the manufacturer.

SPEC. NO. 159 (15-year Bond)

For use over board sheathing, poured gypsum* or precast gypsum block*

(Not to be used on inclines less than 3" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 15-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: If over boards, the roof deck shall be constructed of seasoned lumber, smooth and securely nailed, and free from large cracks or knot holes. It shall be properly graded to outlets and swept clean and free from all loose material.

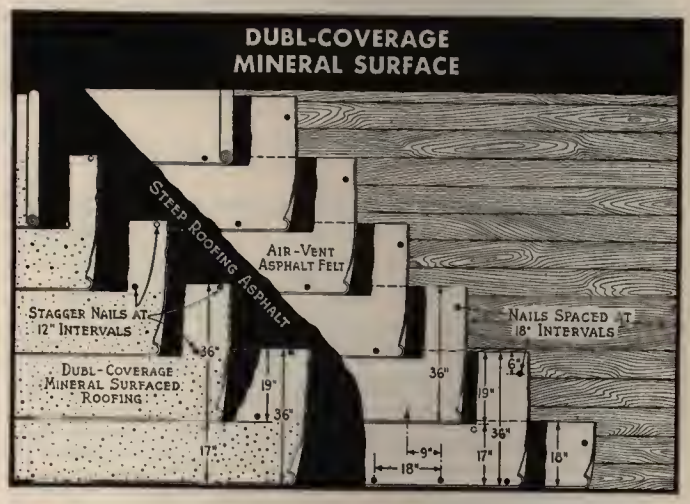
Preparation of Material: The Ruberoid Dubl-Coverage mineral surfaced roofing shall be cut into lengths not exceeding 18 ft. and piled flat in a protected place twenty-four hours before application.

General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — Over the entire surface lay two plies of Ruberoid Air-vent Asphalt Felt, laid at right angles to the incline of the roof deck, lapping each sheet 19 in. over the preceding one and nailing along the back edge of each sheet at intervals of 18 in. approximately 6 in. down from each back edge. Mop between each sheet at a distance of 19 in. using Ruberoid Steep Roofing Asphalt.

Second — Using Ruberoid Steep Roofing Asphalt, apply Ruberoid Dubl-Coverage mineral surfaced roofing over the entire surface. The sheets shall be laid at right angles to the incline of the roof deck and the selvage portion of each sheet shall be stagger nailed with nails at intervals not exceeding 12 in. Care must be exercised in mopping the selvage so that there will be no drippage down over the preceding sheet and the edge of each sheet must be stepped into the hot mopping so that all laps will be securely sealed. Mopping must be done immediately ahead of the unrolling sheet of roofing and at no time is it permitted to mop more than 3 feet ahead of the roll.



Third — End laps shall be 6 in. in width and the underlying edge shall be nailed on 6 in. centers, mopped and the overlying edge stepped down firmly into the mopping.

Fourth — If the incline of the roof exceeds 4 in. per foot, the Ruberoid Dubl-Coverage material may be laid parallel with the incline of the roof deck, provided the laps face away from the prevailing wind direction in the locality of the job.

Fifth — The flat portion of valleys shall be constructed as per Ruberoid Spec. No. 151.

If this roof is to be applied over insulating material, use the method of application as shown in Ruberoid Spec. No. 160.

*** This specification shall be followed over poured gypsum or precast gypsum decks except that all nailing shall be done with 1½ in. bright (not galvanized) nails having ⅝ in. diameter heads. The deck must be primed and strip mopped with asphalt when applying the base sheets, such strip moppings to be at least 12 in. in width and at intervals not to exceed 18 in.**

SPEC. NO. 160 (15-year Bond)

For use over poured concrete, precast concrete tile or approved insulation

(Not to be used on inclines less than 3" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 15-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck must be thoroughly dry, smooth and free from loose material, and must be properly graded to outlets.

For inclines exceeding 3 in. to the foot, if deck is of concrete, wood nailing strips must be provided at proper intervals.

Coves shall be provided in the angle between the roof and the vertical surfaces.

Where book tile is used, the surface of the tile must be covered with Portland cement mortar 1 in. thick with a smooth and even finish.

Preparation of Material: The Ruberoid Dubl-Coverage mineral surfaced roofing shall be cut into lengths not exceeding 18 feet and piled flat in a protected place twenty-four hours before application.

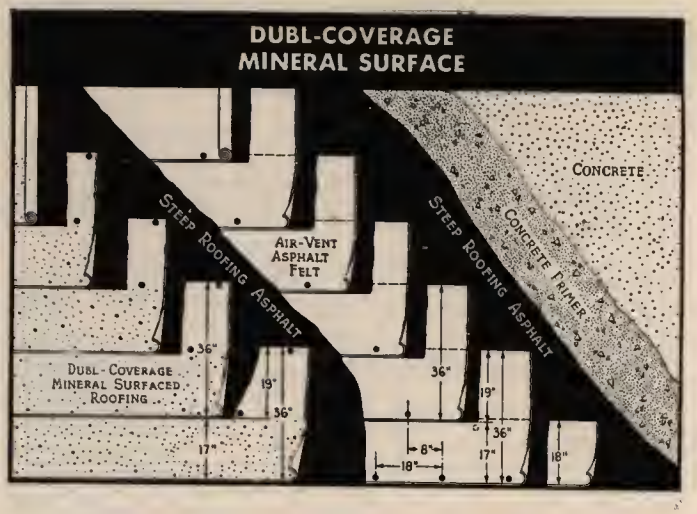
General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — Coat entire surface with Ruberoid Concrete Primer and allow to dry thoroughly before proceeding. If the roof is to be applied over insulation, Primer may be omitted.

Second — Over entire surface embed in Ruberoid Roofing Asphalt two plies of Ruberoid Air-vent Asphalt Felt laid at right angles to incline of roof deck, lapping each sheet 19 in. over the preceding one and mopping solid to the deck and between sheets with Ruberoid Roofing Asphalt. Care shall be taken that felt is unrolled immediately behind the mop. If deck permits of nailing, each sheet of felt shall be backnailed at intervals of 18 in., 6 in. down from upper edge of each sheet. If deck does not permit of nailing, adequate nailing strips must be provided at intervals of not to exceed 36 in.

Third — Using Ruberoid Roofing Asphalt, apply Ruberoid Dubl-Coverage mineral surfaced roofing over entire surface. Sheets shall



be laid at right angles to incline of roof deck and the selvage portion of each sheet shall be stagger nailed with nails at intervals not exceeding 12 in. Care must be exercised in mopping selvage so that there will be no drippage down over the preceding sheet. Edge of each sheet must be stepped into the hot mopping so that all laps will be securely sealed. Mopping must be done immediately ahead of the unrolling sheet of roofing and at no time is it permitted to mop more than 3 feet ahead of the roll.

Fourth — End laps shall be 6 in. in width and the underlying edge shall be nailed on 6 in. centers, mopped and the overlying edge stepped down firmly into the mopping.

Fifth — If the incline of the roof exceeds 4 in. per foot, the Ruberoid Dubl-Coverge material may be laid parallel with the incline of the roof deck, provided the laps face away from the prevailing wind direction in the locality of the job.

Sixth — The flat portion of valleys shall be constructed as per Ruberoid Spec. No. 151.

SPEC. NO. 200 (20-year Bond)

For use over board sheathing, poured gypsum* precast gypsum block*

(Not to be used on inclines less than 1" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 20-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck must be constructed of seasoned lumber, dressed on upper side, dry and free from large cracks and knot holes. Roof boards must be securely nailed in place, leaving no nail heads above the wood surfaces. Surfaces must be properly graded to outlets and cant-strips provided in the angle formed between the roof and vertical surfaces.

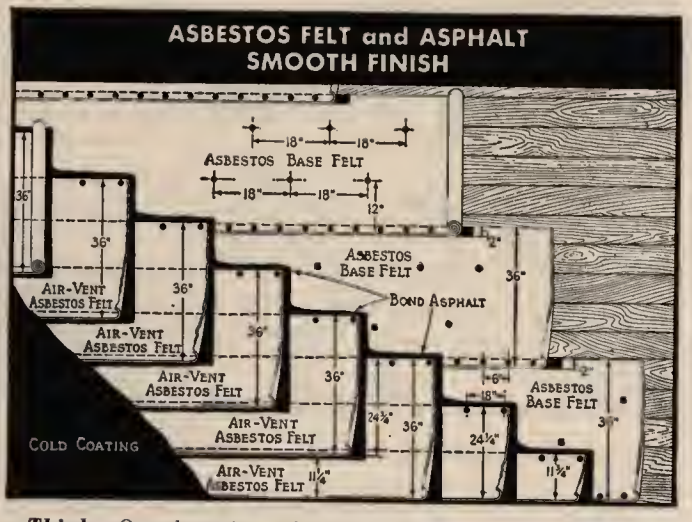
If the roof deck is of poured or precast gypsum it must be visibly surface-dry, free from traces of frost or ice, smooth and properly graded to drains or outlets.

General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — Lay one ply of Ruberoid No. 60 Saturated Asbestos Base Felt, lapping each sheet 2 in. at edges and not less than 6 in. at end laps. Nail at 6 in. intervals along the lap, and also at intervals of 18 in. on a line 12 in. from each edge of the sheet staggering the nails. The felt shall be turned up not less than 4 in. along all vertical surfaces.

Second — Over the entire surface embed in Ruberoid Bond Roofing Asphalt three plies of Ruberoid Air-vent Asbestos Felt, lapping each sheet 24¾ in. over the preceding one, rolling each sheet immediately behind the mop to insure a uniform coating of hot asphalt so that in no place shall felt touch felt. Each sheet shall be nailed along the back edge about 2 in. down from each edge at intervals of approximately 18 in. The felts shall be cut off at the angle of the roof deck and walls or vertical surfaces.



Third — Over the entire surface brush a uniform coating of Ruberoid Cold Coating, using not more than 20 lbs. per 100 sq. ft.

Felt shall be laid without wrinkles or buckles. It shall be rolled immediately behind the hot mop and firmly embedded by brooming the felt. The asphalt shall not be heated to exceed 450° F.

All nailing shall be done either with roofing nails driven through flat tin caps or with 10 gauge roofing nails having heads of not less than ⅝ in. in diameter.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

*** This specification shall be followed over poured gypsum or precast gypsum decks except that all nailing shall be done with 1½ in. bright (not galvanized) nails having ⅝ in. diameter heads. The deck must be primed and strip mopped with asphalt when applying the base sheets, such strip moppings to be at least 12 in. in width and at intervals not to exceed 18 in.**

SPEC. NO. 201 (20-Year Bond)

For use over poured concrete, precast concrete tile, or book tile

(Not to be used on inclines less than 1" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 20-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck shall be thoroughly dry, smooth and free from loose material, and properly graded to outlets.

Where book tile is used the surface of the tile shall be covered with Portland cement mortar 1 in. thick with a smooth and even finish.

Where poured gypsum or precast gypsum blocks are used, all felt shall be nailed as required when the roof deck is of boards.

For inclines exceeding 3 in. to the foot, if the deck is of concrete, wooden nailing strips must be provided at proper intervals.

Coves shall be provided in the angle between the roof and vertical surfaces.

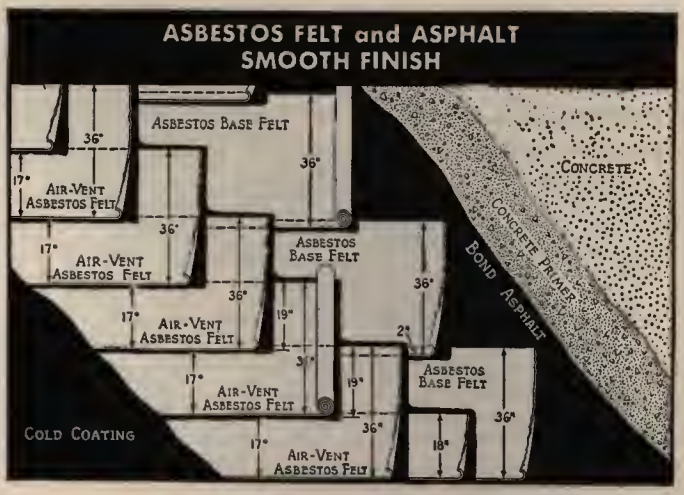
General Requirements and Conditions of Bond: *See page 6.*

Application of Roofing:

First — Coat the entire surface with Ruberoid Concrete Primer applied cold and allow same to dry thoroughly. Where plastic material is used to caulk the joints of blocks, the coating of primer shall be held back 2 in. from all joints.

Second — Over the entire surface embed in Ruberoid Bond Roofing Asphalt one ply of Ruberoid No. 60 Asbestos Base Felt lapping each sheet 2 in. over the preceding one at the edges and not less than 6 in. at end laps. Nail at intervals of 12 in. along the laps into the nailing strip. All felts shall be cut off at the angle of the roof deck and all walls or vertical surfaces.

Third — Over the entire surface embed in Ruberoid Bond Roofing Asphalt two plies of Ruberoid Air-vent Asbestos Felt, lapping each sheet 19 in. over the preceding one, rolling each sheet immediately



behind the mop to insure a uniform coating of hot asphalt so that in no place shall felt touch felt.

On inclines exceeding 4 in. to the foot, these sheets shall be nailed 6 in. from the back edge at intervals of 24 in. All felts shall be cut off at the angle of the roof deck and all walls or vertical surfaces.

Fourth — Over the entire surface brush a uniform coating of Ruberoid Cold Coating, using not more than 20 lbs. per 100 sq. ft.

Felt shall be laid without wrinkles or buckles. It shall be rolled immediately behind the hot mop and firmly embedded by brooming the felt.

All nailing shall be done either with galvanized roofing nails driven through flat tin caps or with 10 gauge galvanized roofing nails having heads of not less than 5/8 in. in diameter.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

SPEC. NO. 202 (20-Year Bond)

For use over board sheathing (with or without insulation —no underlay), poured gypsum*, precast gypsum block* or gypsum plank*

(For inclines not exceeding 2" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 20-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: If over boards, the roof deck shall be constructed of seasoned lumber, smooth and securely nailed, and free from large cracks or knot holes. It shall be properly graded to outlets and swept clean and free from all loose material.

If the roof deck is of poured or precast gypsum it must be visibly surface-dry, free from traces of frost or ice, smooth and properly graded to outlets.

General Requirements and Conditions of Bond: *See page 6.*

Application of Roofing:

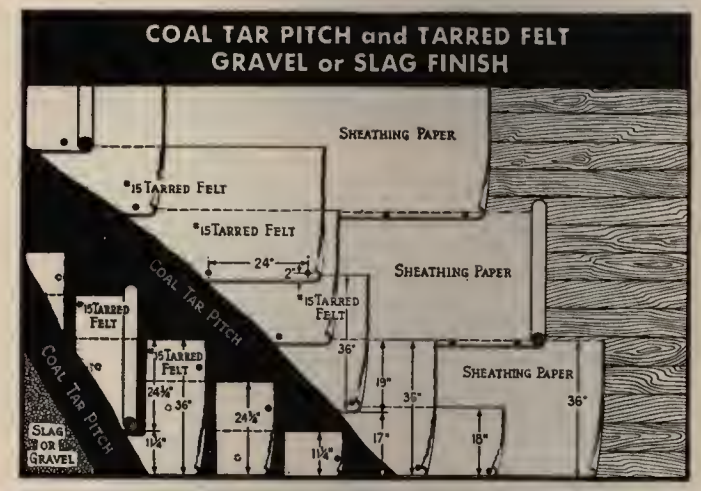
First — Lay one thickness of sheathing paper, weighing not less than 5 lbs. per 100 sq. ft., lapping the sheets at least 1 in. If precast gypsum block is used, sheathing paper may be omitted.

Second — Over the entire surface lay two plies of Ruberoid No. 15 Tarred Felt, lapping each sheet 19 in. over the preceding one and nailing as often as is necessary to secure, until the remaining felt is laid. These felts shall be turned up not less than 4 in. along all walls or vertical surfaces.

Third — Coat entire surface uniformly with Ruberoid Coal Tar Pitch.

Fourth — Over entire surface lay three plies of Ruberoid No. 15 Tarred Felt, lapping each sheet 24¾ in. over the preceding one, mopping with Ruberoid Coal Tar Pitch the full 24¾ in. on each sheet, so that in no place shall felt touch felt. Back edge of the sheet shall be nailed at intervals of 24 in. at a distance not greater than 6 in. from back edge of the sheet. Such nailing as is necessary shall be done so that all nails are covered by not less than two plies of felt. These felts shall be cut off at the angle of the roof deck and walls or vertical surfaces.

Fifth — Over entire surface pour a uniform coating of Ruberoid Coal Tar Pitch into which, while hot, embed not less than 400 lbs. of gravel or 300 lbs. of slag for each 100 sq. ft. Gravel or slag shall be



¼ in. to 5/8 in. in size, dry and free from dirt. If roof is applied during cold weather, or slag or gravel is damp, it shall be heated and dried immediately before application.

The felt shall be laid without wrinkles or buckles, and the pitch shall not be heated to exceed 400° F.

All nailing shall be done either with galvanized roofing nails driven through flat tin caps or with 10 gauge galvanized roofing nails having heads of not less than 5/8 in. in diameter.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

*** In applying this specification over any of the gypsum decks as noted, if a single-thickness base sheet is required it shall be lap nailed and stagger nailed at intervals of 6 in. and 18 in. respectively. If two single-thickness base sheets are required, each sheet shall be front-nailed on 12 in. centers 4 in. up from the lower edge.**

Nailing shall be done with 1½ in. bright (not galvanized) nails with minimum head diameters of 5/8 in.

Red Rosin-sized sheathing may be omitted. Care shall be taken that not less than 400 lbs. per square of gravel or slag be applied on all areas.

SPEC. NO. 202SD (20-year Bond)

For use over board sheathing (with or without insulation — no underlay), poured gypsum*, precast gypsum block* or gypsum plank

(For inclines not exceeding 2″ per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 20-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: If over boards, the roof deck shall be constructed of seasoned lumber, smooth and securely nailed, and free from large cracks or knot holes. It shall be properly graded to outlets and swept clean and free from all loose material.

If the roof deck is of poured or precast gypsum it must be visibly surface-dry, free from traces of frost or ice, smooth and properly graded to drains or outlets.

General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

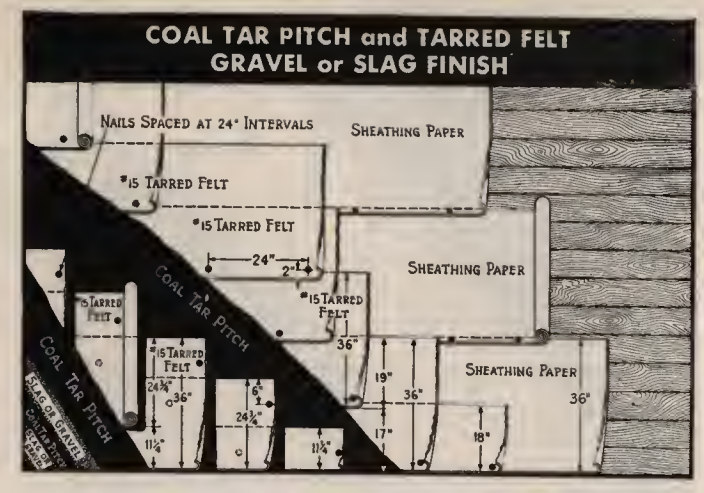
First — Lay one thickness of sheathing paper, weighing not less than 5 lbs. per 100 sq. ft., lapping sheets at least 1 in. If precast gypsum block is used, sheathing paper may be omitted.

Second — Over the entire surface lay two plies of Ruberoid No. 15 Tarred Felt, lapping each sheet 19 in. over the preceding one, and nailing as often as is necessary to secure, until the remaining felt is laid. These felts shall be turned up not less than 4 in. along all walls or vertical surfaces.

Third — Coat entire surface uniformly with Ruberoid Coal Tar Pitch.

Fourth — Over entire surface lay three plies of Ruberoid No. 15 Tarred Felt, lapping each sheet 24¾ in. over the preceding one, mopping with Ruberoid Coal Tar Pitch the full 24¾ in. on each sheet, so that in no place shall felt touch felt. Back edge of each sheet shall be nailed at intervals of 24 in. at a distance not greater than 6 in. from back edge of sheet. Such nailing as is necessary shall be done so that all nails are covered by not less than two plies of felt. Felts shall be cut off at angle of roof deck and walls or vertical surfaces.

Fifth — Over entire surface pour a uniform coating of Ruberoid Coal Tar Pitch into which, while hot, embed approximately 200 lbs. of gravel or 150 lbs. of slag for each 100 sq. ft. Gravel or slag shall be ¼ in. to ⅝ in. in size, dry and free from dirt. Entire surface shall then be thoroughly swept with a street broom and all loose particles



of gravel removed. Heavy coating of Ruberoid Pitch shall then be mopped on, into which, while hot, embed approximately 200 lbs. of gravel or 150 lbs. of slag per square.

The entire surface shall again be thoroughly swept with a street broom and all loose particles of gravel removed.

The felt shall be laid without wrinkles or buckles, and the pitch shall not be heated to exceed 400° F.

All nailing shall be done either with galvanized roofing nails driven through flat tin caps or with 10 gauge galvanized roofing nails having heads of not less than ⅝ in. in diameter.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

*** In applying this specification over any of the gypsum decks as noted, if a single-thickness base sheet is required it shall be lap nailed and stagger nailed at intervals of 6 in. and 18 in. respectively. If two single-thickness base sheets are required, each sheet shall be front-nailed on 12 in. centers 4 in. up from the lower edge.**

Nailing shall be done with 1½ in. bright (not galvanized) nails with minimum head diameters of ⅝ in.

Red Rosin-sized sheathing may be omitted. Care shall be taken that not less than 400 lbs. per square of gravel or slag be applied on all areas.

SPEC. NO. 202STP (20-year Bond)

For use over board sheathing (without insulation) or precast gypsum block

(For inclines from 2″ to 5″ per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 20-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: If over boards, the roof deck shall be constructed of seasoned lumber, smooth and securely nailed, and free from large cracks or knot holes. It shall be properly graded to outlets and swept clean and free from all loose material.

General Requirements and Conditions of Bond: ***See page 6.***

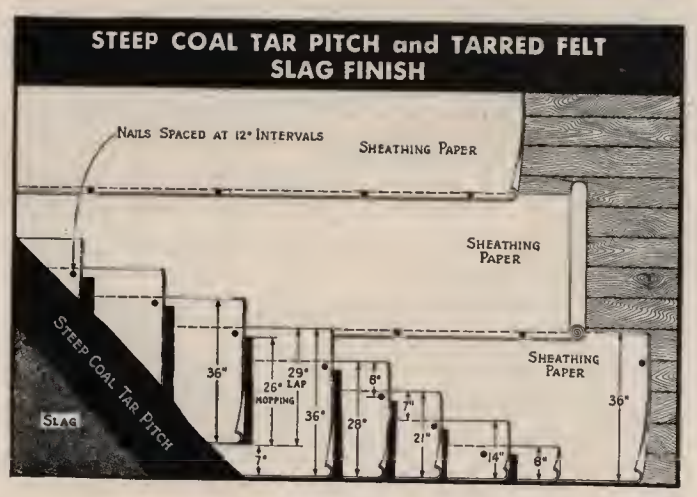
Application of Roofing:

First — Lay one thickness of sheathing paper, weighing not less than 5 lbs. per 100 sq. ft., lapping the sheets at least 1 in. If precast gypsum block is used, sheathing paper may be omitted.

Second — Over the entire surface lay five plies of Ruberoid No. 15 Tarred Felt, lapping each sheet 29 in. over the preceding one. Each sheet shall be nailed at intervals not to exceed 12 in. along a line about 8 in. from its upper edge.

Third — Mop with Ruberoid Steep Coal Tar Pitch between each sheet for a distance of about 26 in. Felt shall be firmly imbedded into the hot moppings. They must be rolled into the moppings and not "dropped."

Fourth — Over the entire surface spread with a mop a uniform coating of Ruberoid Steep Coal Tar Pitch into which, while hot, embed not less than 250 lbs. per 100 sq. ft. of clean dry slag ¼ in. to ⅝ in. in size. The completed surface shall be swept with a broom in order to remove all loose slag.



The felt shall be laid without wrinkles or buckles, and the pitch shall not be heated to exceed 350° F.

All nailing shall be done either with galvanized roofing nails driven through flat tin caps or with 10 gauge galvanized roofing nails having heads of not less than ⅝ in. in diameter.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

SPEC. NO. 203 (20-year Bond)

For use over poured concrete, precast concrete or book tile

(For inclines not exceeding 1" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 20-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck shall be thoroughly dry, smooth and free from loose material, and properly graded to outlets.

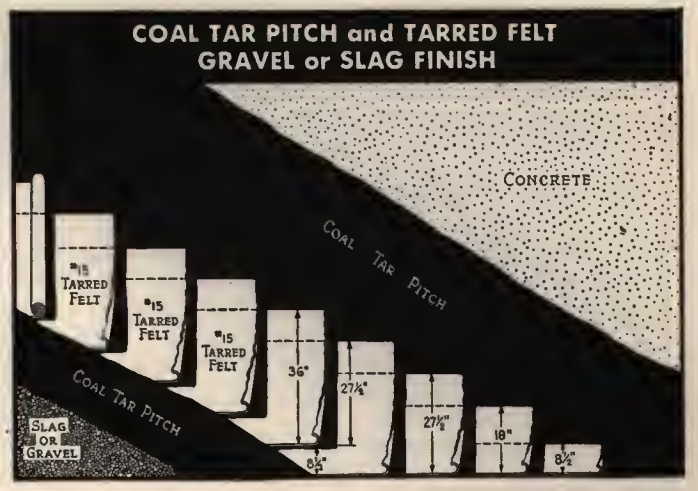
Where book tile is used the surface of the tile shall be covered with Portland cement mortar 1 in. thick with smooth and even finish.

General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — Coat the roof deck uniformly with Ruberoid Coal Tar Pitch. If precast concrete tile is used, the surface shall be spot or strip mopped.

Second — Over the entire surface lay four plies of Ruberoid No. 15 Tarred Felt, lapping each sheet 27½ in. over the preceding one and mopping with Ruberoid Coal Tar Pitch the full 27½ in. on each sheet so that in no place shall felt touch felt. These felts shall be cut off at the angle of the roof deck and walls or vertical surfaces.



Third — Over the entire surface pour a uniform coating of Ruberoid Coal Tar Pitch into which, while hot, embed not less than 400 lbs. of gravel or 300 lbs. of slag for each 100 sq. ft. The gravel or slag shall be from ¼ in. to ⅝ in. in size, dry and free from dirt. If the roof is applied during cold weather, or slag or gravel is damp, it shall be heated and dried immediately before application.

The felt shall be laid without wrinkles or buckles, and the pitch shall not be heated to exceed 400° F.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

SPEC. NO. 203SD (20-year Bond)

For use over poured concrete, precast concrete tile or book tile with or without approved insulation

(For inclines not exceeding 1" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 20-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck shall be thoroughly dry, smooth and free from loose material, and properly graded to outlets.

Where book tile is used the surface of the tile shall be covered with Portland cement mortar 1 in. thick with smooth and even finish.

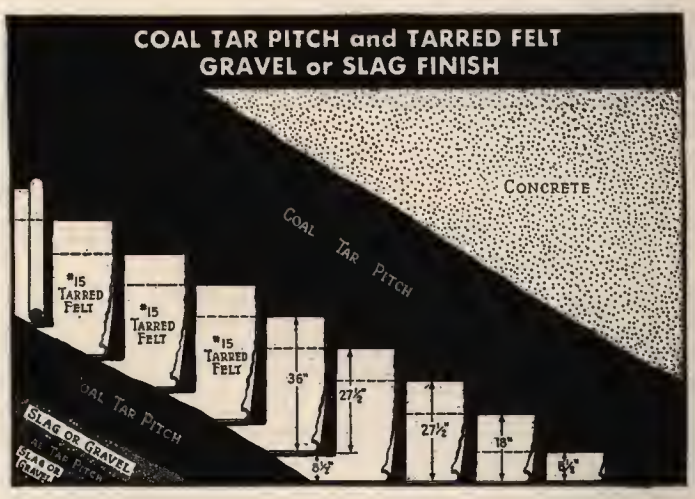
General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — Coat the deck uniformly with Ruberoid Coal Tar Pitch. If precast concrete tile is used, the surface shall be spot or strip mopped.

Second — Over the entire surface lay four plies of Ruberoid No. 15 Tarred Felt, lapping each sheet 27½ in. over the preceding one and mopping with Ruberoid Coal Tar Pitch the full 27½ in. on each sheet so that in no place shall felt touch felt. These felts shall be cut off at the angle of the roof deck and walls or vertical surfaces.

Third — Over the entire surface pour a uniform coating of Ruberoid Coal Tar Pitch into which, while hot, embed approximately 200 lbs. of gravel or 150 lbs. of slag for each 100 sq. ft. The gravel or slag shall be from ¼ in. to ⅝ in. in size, dry and free from dirt. The entire surface shall then be thoroughly swept with a street broom and all loose particles of gravel removed, following which a heavy coating of



Ruberoid Coal Tar Pitch shall be mopped on, into which while hot approximately 200 lbs. of gravel or 150 lbs. of slag per square shall be embedded.

The entire surface shall again be thoroughly swept with a street broom and all loose particles of gravel removed.

The felt shall be laid without wrinkles or buckles, and the pitch shall not be heated to exceed 400° F.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

SPEC. NO. 203STP (20-year Bond)

For use over poured concrete, precast concrete tile, book tile, or poured gypsum

For inclines from 1″ to 5″ per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 20-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck shall be thoroughly dry, smooth and free from loose material, and properly graded to outlets.

Where book tile is used the surface of the tile shall be covered with Portland cement mortar 1 in. thick with a smooth and even finish.

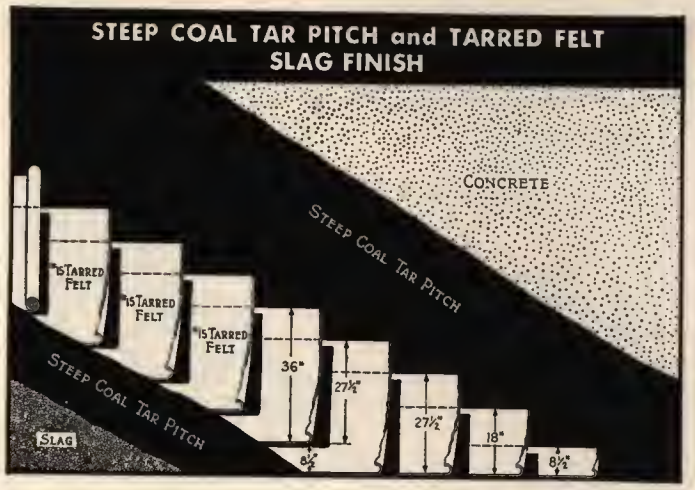
Nailing strips must be provided in concrete decks.

General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — Over the entire surface mop solid with Ruberoid Steep Coal Tar Pitch four full thicknesses of Ruberoid No. 15 Tarred Felt, lapping each sheet 27½ in. over the preceding one and mopping the full width of the 27½ in. on each sheet.

Second — Each sheet shall be nailed with nails at intervals not to exceed 12 in. on a line 8 in. from its upper edge. Where nailing strips are used, each sheet shall be nailed with two nails into each nailing strip, the nailing to be done approximately 6 in. and 8 in., respectively, from the upper edge of each sheet.



Third — Over the entire surface spread with a mop a uniform coating of Ruberoid Steep Coal Tar Pitch into which, while hot, embed not less than 250 lbs. per 100 sq. ft. of clean dry slag ¼ in to ⅝ in. in size. The completed surface shall be swept with a broom in order to remove all loose slag.

The felt shall be laid without wrinkles or buckles, and the pitch shall not be heated to exceed 350° F.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

SPEC. NO. 204 (20-year Bond)

For use over board sheathing

(For inclines from 1″ to 4″ per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 20-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: If over boards, the roof deck shall be constructed of seasoned lumber, smooth and securely nailed, and free from large cracks or knot holes. It shall be properly graded to outlets and swept clean and free from all loose material. Where gypsum blocks are required for nailing, they must be solid blocks.

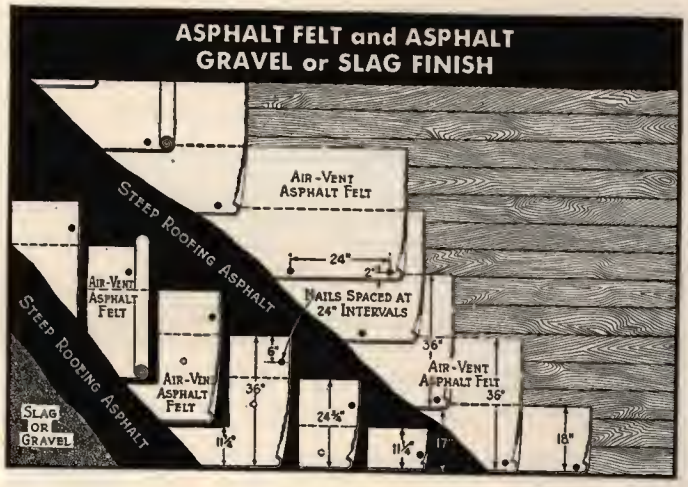
General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — Over the entire surface lay two plies of Ruberoid No. 15 Air-vent Asphalt Felt, lapping each sheet 19 in. over the preceding one and nailing as often as is necessary to secure, until the remaining felt is laid. These felts shall be turned up not less than 4 in. along all walls and vertical surfaces.

Second — Over the entire surface embed in Ruberoid Roofing Asphalt three plies of Ruberoid Air-vent Asphalt Felt, lapping each sheet 24¾ in. over the preceding one, rolling each sheet immediately behind the mop to insure a uniform coating of hot asphalt, so that in no place shall felt touch felt. Each sheet shall be nailed along the back edge at intervals of 24 in. These felts shall be cut off at the angle of the roof deck and walls or vertical surfaces.

Third — Over the entire surface spread a uniform coating of Ruberoid Roofing Asphalt into which, while hot, embed not less than 400 lbs. of gravel, or 300 lbs. of slag per 100 sq. ft. Gravel or slag must be approximately ¼ in. to ⅝ in. in size, thoroughly dry and free from dust or foreign matter. If roof is applied during cold weather,



or the slag or gravel is damp, it shall be heated and dried immediately before application.

Felt shall be laid without wrinkles or buckles. Asphalt shall not be heated to exceed 450° F.

All nailing shall be done either with galvanized roofing nails driven through flat tin caps or with 10 gauge galvanized roofing nails having heads of not less than ⅝ in. in diameter.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

If this roof is to be applied over insulating material, use the method of application as shown in Ruberoid Spec. No. 205.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

SPEC. NO. 205 (20-year bond)

For use over poured concrete, precast concrete tile, book tile, poured gypsum*, precast gypsum block* or rigid insulation

(For inclines from 1" to 4" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 20-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck shall be thoroughly dry, smooth and free from loose material, and properly graded to outlets.

Where book tile is used the surface of the tile shall be covered with Portland cement mortar 1 in. thick with smooth and even finish.

If the roof deck is of poured or precast gypsum it must be visibly surface-dry, free from traces of frost or ice, smooth and properly graded to drains or outlets.

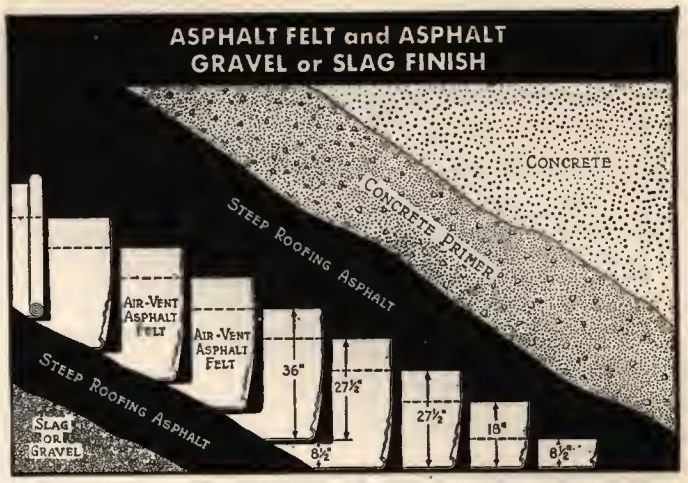
General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — Coat entire surface with Ruberoid Concrete Primer applied cold and allow same to dry thoroughly. Where plastic material is used to caulk the joints of blocks, the coating of primer shall be held back 2 in. from all joints.

Second — Over entire surface embed in Ruberoid Roofing Asphalt four plies of Ruberoid Air-vent Asphalt Felt, lapping each sheet 27½ in. over the preceding one, rolling each sheet immediately behind the mop to insure a uniform coating of hot asphalt so that in no place shall felt touch felt. All felts shall be cut off at angle of roof deck and walls or vertical surfaces.

Third — Over the entire surface spread a uniform coating of Ruberoid Roofing Asphalt into which, while hot, embed not less than 400 lbs. of gravel or 300 lbs. of slag per 100 sq. ft. Gravel or slag must be approximately ¼ in. to ⅝ in. in size, thoroughly dry and free from dust or foreign matter. If roof is applied during cold weather,



or gravel or slag is damp, it shall be heated and dried immediately before application.

Felt shall be laid without wrinkles or buckles, and the asphalt shall not be heated to exceed 450° F.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

Important: *Edges and eaves of gravel or slag surfaced roofs must be finished with suitable metal gravel stops having flanges extending at least 4 in. out onto the roof.*

*** When this specification is used over a gypsum deck, the deck must be primed and strip mopped, such strip mopping of asphalt to be 12 in. in width and at intervals of not to exceed 18 in.**
All sheets of felt must be back nailed at intervals of 12 in. on center 6 in. down from the upper edge and nailing must be done with 1½ in. bright, (not galvanized) nails of ⅝ in. head diameter.
When applied in this manner over gypsum, this roof is suitable for inclines up to 4 in. per foot.

SPEC. NO. 208 (20-year bond)

For use over board sheathing, poured gypsum* or precast gypsum block*

(Not to be used on inclines less than 1" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 20-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck must be constructed of seasoned lumber, dressed on upper side, dry and free from large cracks and knot holes. Roof boards must be securely nailed in place, leaving no nail heads above the wood surfaces. Surfaces must be properly graded to outlets and cant strips provided in the angle formed between the roof and vertical surfaces.

If the roof deck is of poured or precast gypsum it must be visibly surface-dry, free from traces of frost or ice, smooth and properly graded to drains or outlets.

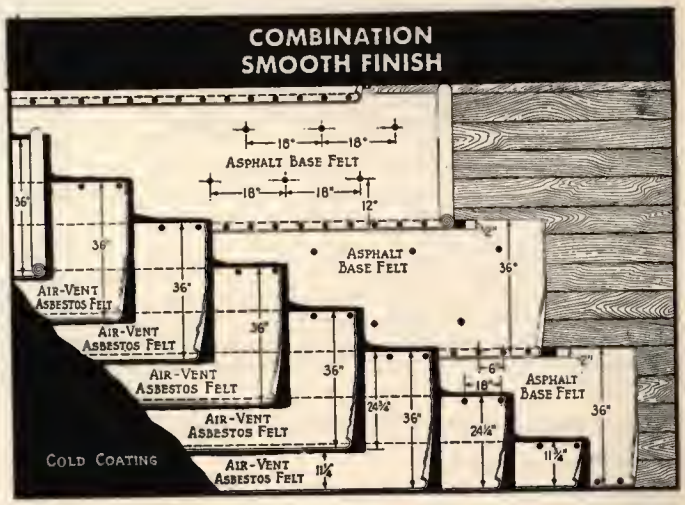
General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — Lay one ply of Ruberoid Asphalt Base Felt, lapping each sheet 2 in. and not less than 6 in. at end laps. Nail at 6 in. intervals along the lap. This felt shall be turned up not less than 4 in. along all vertical surfaces.

Second — Over this Ruberoid Asphalt Base Felt embed in Ruberoid Bond Roofing Asphalt three plies of Ruberoid Air-vent Asbestos Felt, lapping each sheet 24¾ in. over the preceding one, rolling each sheet immediately behind the mop to insure a uniform coating of hot Ruberoid Bond Roofing Asphalt so that in no place shall felt touch felt. Each sheet shall be nailed along the back edge from 1 to 1½ in. down at intervals of approximately 18 in. These felts shall be cut off at the angle of the roof deck and walls or vertical surfaces.

Third — Over the entire surface brush a uniform coating of Ruberoid Cold Coating, using not more than 20 lbs. per 100 sq. ft.



Felt shall be laid without wrinkles or buckles. It shall be rolled immediately behind the hot mop and firmly embedded by brooming the felt. The asphalt shall not be heated to exceed 450° F.

All nailing shall be done either with galvanized roofing nails driven through flat tin caps or with 10 gauge galvanized roofing nails having heads of not less than ⅝ in. in diameter.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

If this roof is to be applied over insulating material, use the method of application as shown in Ruberoid Spec. No. 209.

*** This specification shall be followed over poured gypsum or precast gypsum decks except that all nailing shall be done with 1½ in. bright (not galvanized) nails having ⅝ in. diameter heads. The deck must be primed and strip mopped with asphalt when applying the base sheets, such strip moppings to be at least 12 in. in width and at intervals not to exceed 18 in.**

SPEC. NO. 209 (20-year Bond)

For use over poured concrete, precast concrete tile, or book tile

(Not to be used on inclines less than 1" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 20-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck shall be thoroughly dry, smooth and free from loose material, and properly graded to outlets.

Where book tile is used the surface of the tile shall be covered with Portland cement mortar 1 in. thick with smooth and even finish.

For inclines exceeding 3 in. to the foot, if the deck is of concrete, wooden nailing strips must be provided at proper intervals.

Coves shall be provided in the angle formed between the roof and vertical surfaces.

General Requirements and Conditions of Bond: *See page 6.*

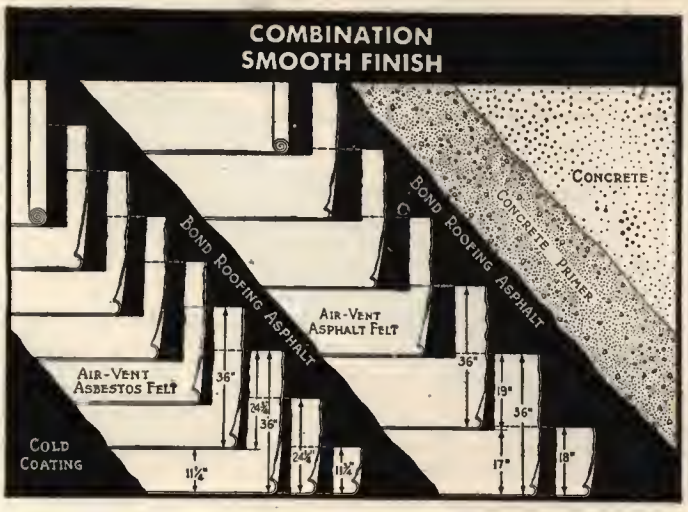
Application of Roofing:

First — Coat the entire surface with Ruberoid Concrete Primer applied cold, allowing same to dry thoroughly. Where plastic material is used to caulk the joints of blocks, the coating of primer shall be held back 2 in. from all joints.

Second — Over entire surface lay two plies of Ruberoid Air-vent Asphalt Felt in Ruberoid Bond Roofing Asphalt, lapping each ply 19 in. over the preceding one and rolling each ply immediately behind mop to insure proper adhesion of all sheets. In no place shall felt touch felt. Felts shall be cut off at top of cove or angle of roof deck and all vertical surfaces.

On inclines exceeding 4 in. to the foot these sheets shall be nailed at intervals of 18 in. along back edge into nailing strips.

Third — Over entire surface embed in Ruberoid Bond Roofing Asphalt three plies of Ruberoid Air-vent Asbestos Felt, lapping each sheet 24¾ in. over the preceding one, rolling each sheet immediately behind mop to insure a uniform coating of hot asphalt. In no place shall felt touch felt. Each sheet shall be nailed 6 in. from back edge,



at intervals of approximately 18 in. These felts shall be cut off at angle of roof deck and walls or vertical surfaces.

On inclines exceeding 3 in. to the foot, these sheets shall be nailed along the back edge at intervals of 24 in.

These felts shall be cut off at the angle of the roof deck and all walls or vertical surfaces.

Fourth — Over entire surface brush a uniform coating of Ruberoid Cold Coating, using not more than 20 lbs. per 100 sq. ft.

Felt shall be laid without wrinkles or buckles. It shall be rolled immediately behind the hot mop and firmly embedded by brooming the felts. Asphalt shall not be heated to exceed 450° F.

All nailing shall be done either with galvanized roofing nails driven through flat tin caps or with 10 gauge galvanized roofing nails having heads of not less than ⅝ in. in diameter.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

SPEC. NO. 210 (20-year Bond)

For use over rigid insulation only

(Not to be used on inclines less than 1" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 20-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck must be thoroughly dry, smooth and free from loose material, and must be properly graded to outlets.

Insulating material must be firmly secured to underlying roof deck by nailing, mopping or securing with clips so that there will be no movement. It is recommended that one or more sheets of vapor seal felt be installed under insulating material as directed by insulation manufacturer.

General Requirements and Conditions of Bond: *See page 6.*

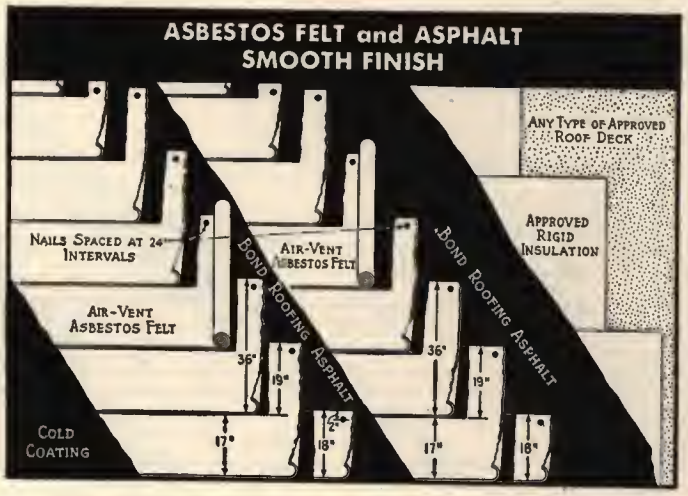
Application of Roofing:

First — Over the entire surface embed in Ruberoid Bond Roofing Asphalt two plies of Ruberoid Air-vent Asbestos Felt lapping each sheet 19 in. over the preceding one, rolling each sheet immediately behind the mop to insure a uniform coating of asphalt. In no place shall felt touch felt. These sheets shall be nailed at intervals of 24 in. not more than 2 in. from the back edge where inclines exceed 3 in. per foot.

Second — Over the felt thus laid embed in Ruberoid Bond Roofing Asphalt two plies of Ruberoid Air-vent Asbestos Felt lapping each sheet 19 in. over the preceding one and rolling each sheet immediately behind the mop. In no place shall felt touch felt. These sheets shall be nailed at intervals of 24 in. not more than 2 in. from the back edge where inclines exceed 3 in. per foot. All felts shall be cut off at the angle of the roof deck and walls or vertical surfaces.

Third — Over entire surface brush a uniform coating of Ruberoid Cold Coating, using not more than 20 lbs. per 100 sq. ft.

Felt shall be laid without wrinkles or buckles. It shall be rolled immediately behind the mop and firmly embedded by brooming the felts. The asphalt shall not be heated to exceed 450° F.



All roofing work shall be done to the satisfaction and approval of the manufacturer.

Alternative Method of Laying Roofing:

Note: Instead of Application of Roofing as specified above we will permit the following:

First — Over the entire surface embed in Ruberoid Bond Roofing Asphalt four plies of Ruberoid Air-vent Asbestos Felt, lapping each sheet 27½ in. over the preceding one, rolling each sheet immediately behind the mop to insure a uniform coating of asphalt. In no place shall felt touch felt. All felts shall be cut off at the angle of the roof deck and walls or vertical surfaces. These sheets shall be nailed at intervals of 24 in. not more than 2 in. from the back edge where deck inclines exceed 3 in. per foot.

Second — Over the entire surface brush a uniform coating of Ruberoid Cold Coating, using not more than 20 lbs. per 100 sq. ft.

SPECIFICATIONS *TODAY* FOR THE ROOFS OF *TOMORROW* . . .

Architects and Engineers are generally agreed that the trend is more and more toward making roofs functional—toward getting the greatest possible use from this valuable area. Most of these recent roof developments can be divided into the three classes pictured below, and Ruberoid has worked out sound, practical, *tested* specifications for each.

PROMENADE ROOFS

Sun-bathed play areas for schools, outdoor decks for convalescents in hospitals, recreational space for office workers, are only a few of the uses of promenade roofs. Ruberoid gives you a simple, practical, efficient method of installing clay tile without the mess, weight and expense of a mortar bed. The entire application is confined to one trade; there is no need for expensive divided responsibility.

HEAVY TRAFFIC ROOFS

These are tough, husky concrete surfaced roofs on which factory trucks may be used constantly, on which oil drums may be stored, and where any kind of activity that wouldn't damage a concrete sidewalk, may take place year after year. Ruberoid specifications give complete information, how to pour the slab and what to put under it. The cost is not excessive.

GARDEN ROOFS

Flowers, grass, shrubs, even trees, are now growing on many apartment roofs—real gardens for the enjoyment of city dwellers. These are made possible by effective Ruberoid design of drainage and flashings. The cost is but little greater than conventional promenade tile.

SPEC. NO. 206 (20-year Bond)

For use over concrete with or without rigid insulation

(For inclines not exceeding 1" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 20-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck must be thoroughly dry, smooth and free from loose material, and must be properly graded to outlets.

General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — Coat the roof deck uniformly with Ruberoid Coal Tar Pitch.

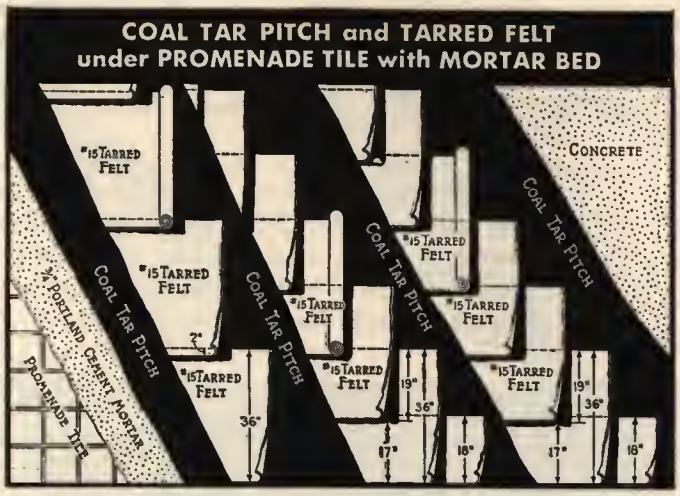
Second — Over entire surface lay two plies of Ruberoid No. 15 Tarred Felt, lapping each sheet 19 in. over the preceding one and mopping with Ruberoid Coal Tar Pitch the full 19 in. on each sheet so that in no place shall felt touch felt. Felt shall be cut off at angle of roof deck and walls or vertical surfaces.

Third — Coat the entire surface uniformly with Ruberoid Coal Tar Pitch.

Fourth — Over entire surface lay two plies of Ruberoid No. 15 Tarred Felt, lapping each sheet 19 in. over the preceding one and mopping with Ruberoid Coal Tar Pitch the full 19 in. on each sheet so that in no place shall felt touch felt.

Fifth — Before laying the tile, thoroughly sweep the surface of the roof and apply a uniform mopping of Ruberoid Coal Tar Pitch into which, while hot, lay one ply of Ruberoid No. 15 Tarred Felt, lapping each sheet 2 in. over the preceding one. Immediately before laying the tile, cover this surface with a uniform mopping of Ruberoid Coal Tar Pitch. No more roof surface shall be covered with this last ply of felt and mopping of pitch than is to be covered at the same time with tile.

Sixth — Over the roofing thus laid apply approximately ¾ in. of Portland cement mortar (1 to 3 mix). No more mortar shall be



applied at one time than is to be immediately covered with tile. Into this mortar bed lay Promenade Tile of Vitrified clay as selected and approved by the architect, setting them to show ¼ in. joints. Joints shall be grouted full with Portland cement mortar (1 to 2 mix). Expansion joints approximately ¾ in. wide and filled with a plastic material (as approved by the architect) shall be provided between the Promenade Tile and all flashings, and additional expansion joints shall be provided throughout the roof surface as may be necessary to take care of expansion. All expansion joints shall extend through mortar bed to top sheet of waterproofing.

The felt shall be laid without wrinkles or buckles, and the pitch shall not be heated to exceed 400° F.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

SPEC. NO. 206A (20-year Bond)

For use over concrete with or without rigid insulation

(For inclines not exceeding 1" per foot)

The roofing shall be a Ruberoid Bonded Roof carrying a 20-year Guaranty Bond, installed in accordance with conditions and specifications as hereinafter set forth.

Work by Others: The roof deck must be thoroughly dry, smooth and free from loose material, and must be properly graded to outlets.

General Requirements and Conditions of Bond: ***See page 6.***

Application of Roofing:

First — Coat the roof deck uniformly with Ruberoid Coal Tar Pitch.

Second — Over entire surface lay two plies of Ruberoid No. 15 Tarred Felt, lapping each sheet 19 in. over the preceding one and mopping with Ruberoid Coal Tar Pitch the full 19 in. on each sheet so that in no place shall felt touch felt. Felt shall be cut off at angle of roof deck and walls or vertical surfaces.

Third — Coat the entire surface uniformly with Ruberoid Coal Tar Pitch.

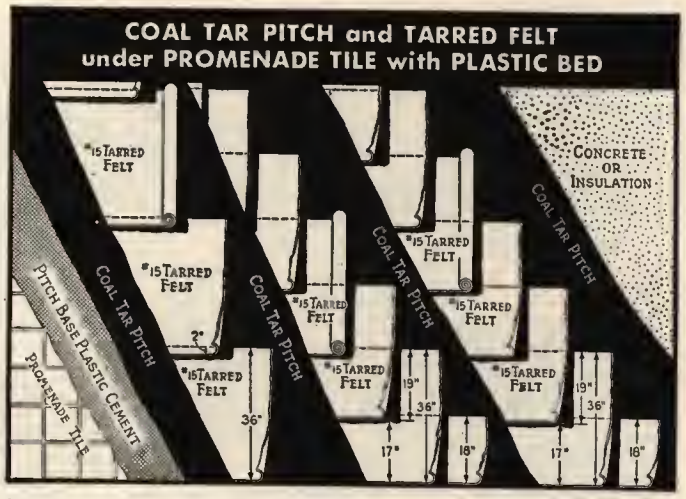
Fourth — Over entire surface lay two plies of Ruberoid No. 15 Tarred Felt, lapping each sheet 19 in. over the preceding one and mopping with Ruberoid Coal Tar Pitch the full 19 in. on each sheet so that in no place shall felt touch felt.

Fifth — Before laying the tile, thoroughly sweep the surface of the roof and apply a uniform mopping of Ruberoid Coal Tar Pitch into which, while hot, lay one ply of Ruberoid No. 15 Tarred Felt, lapping each sheet 2 in. over the preceding one. No more roof surface shall be covered with this last ply of felt and mopping of pitch than is to be covered at the same time with tile.

Sixth — Strike measured lines over surface of felt thus laid either from exact center of the roof area, or from one square corner out, so that the tiles can be applied in accurate, straight courses.

Using a trowel or rubber-blade squeegee, apply Pitch Base Plastic over an area about 18 in. square, the plastic to be spread in a thickness of 1/16 in. Slide each tile into the plastic bed, allowing a ⅜ in. joint both ways and carefully lining up tiles with the previously struck lines and with each other. Tile-setting should be done off boards, or planks, so that a minimum of movement occurs in the already installed tile. Continue above operation until all tiles are laid.

Using grease guns or caulking guns equipped with rectangular nozzles, fill all joints of tile with Pitch Base Plastic to within ¼ in. of top of tile, and allow the material to level itself in the joints for an



interval of four to eight hours, refilling any portions of joints where plastic has settled to less than ¼ in. from top of tiles.

Fill this remaining ¼ in. flush with top of all tiles, with a dry mix, consisting of one part of Portland cement and four parts of dry sand and then soak each joint thoroughly with clear water.

The felt shall be laid without wrinkles or buckles, and the pitch shall not be heated to exceed 400° F.

All roofing work shall be done to the satisfaction and approval of the manufacturer.

Special Notes:

Note 1—For purposes of computing live-load weights, the two standard sizes of clay roof promenade tile laid with customary ⅛ in. joints weigh approximately as follows:

6" x 6" x 1"—950 lbs. per square
6" x 9" x 1"—965 lbs. per square

These weights are in addition to the weight of the waterproofing materials, as indicated in the Specification.

Note 2—Roofing bonds issued on this type of roof are necessarily qualified with an exception of liability clause reading as follows:

"No liability is assumed for failure of or defects in traffic bearing or promenade materials applied over this roof nor for any expense involved in removing and/or replacing any part of said promenade or traffic bearing material when such action becomes necessary in order to make repairs to the underlying roofing membrane in accordance with the provisions of this instrument."

Note 3—Expansion joints through the body and around the edges of this type of roof are not necessary, owing to the nature of the waterproofing construction, but it is assumed that the designer will provide for suitable and adequate expansion joints where necessary in the roof deck itself.

RUBEROID CONCRETE SURFACED INDUSTRIAL ROOF

Special Notes:

Note 1 — It is recommended that this roof be applied only over random level concrete roof decks designed for a minimum roof load of 32 lbs. per square foot.

Note 2 — Roof drains shall be of the double drainage promenade type, and must in all cases be located at actual low points in the roof deck.

Note 3 — Proper flashing is imperative with this type of roof. All parapet wall flashing is to be installed in accordance with Ruberoid Flashing Type No. 6B behind one course of back-up brick which will be omitted until the flashing construction is completed, after which the missing course will be laid.

If not possible to accomplish this, as would be the case in an existing wall, all composition flashing must be completely covered with suitable metal base or counter flashing.

Application of Roofing:

Roofing shall be installed strictly in accordance with application directions as found in Ruberoid Spec. No. 203, governing the application of a Ruberoid Coal Tar Pitch and Tarred Felt, Gravel Surfaced Roof over concrete roof decks.

The addition of one or more layers of felt and pitch to this base specification will correspondingly increase the anticipated life of the roof.

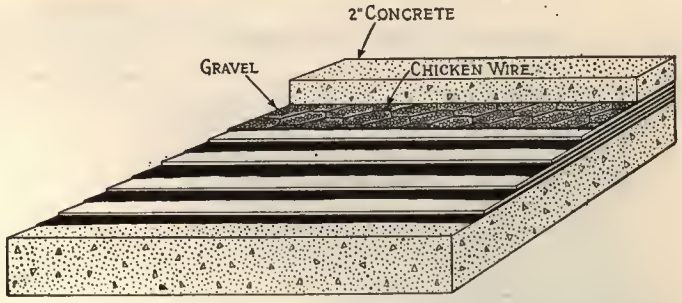
Asphalt materials are not suitable for this type of roof.

Application of Concrete Surface:

After roofing and flashing have been completed, but before spreading gravel, flood entire roof area with water to a minimum depth of 1 in., and allow to remain for a period of 12 hours before draining off in order to determine that roof covering is watertight.

Pour over the entire surface a heavy coating of Ruberoid Coal Tar Pitch into which embed clean, dry ¼ in. to ⅝ in. roofing gravel in a minimum amount of 500 lbs. per square.

Unroll over the entire area one layer of ½ in. mesh galvanized chicken wire or hardware cloth, occasionally wiring sections together at edges and ends to provide a continuous mat.



Prepare a concrete mix consisting of one part Portland cement, 2½ parts dry sand, and 3½ parts ¼ in. gravel, using not to exceed 6 gallons of water per sack of cement.

This mix shall be poured over the entire area to a depth of 2 in., and screeded smooth and to grade.

Expansion Joints:

Provision for expansion joints through this slab must be made around all walls and vertical surfaces and at 20 foot centers throughout main roof area. Expansion joints around all walls must be a minimum of 1 in. wide and through body of roof the expansion joint minimum is not to be less than ½ in. in width.

An approved pre-moulded highway expansion joint material may be used for this purpose when applied in accordance with manufacturer's instructions. A satisfactory alternate method may be used by installing, as directed, lengths of greased bevelled wood strips laid on edge with the thick butt up. When the slab has set, these bevelled strips can be removed and the openings caulked with plastic cement which has been slightly thickened with dry Portland cement and worked completely into these openings and flush with their tops by using a caulking gun or grease gun.

RUBEROID GARDEN ROOF

GENERAL PREPARATION

Special Notes:

Note 1—This roof shall not be applied during periods when temperatures are below 40° F.

Note 2—For the purpose of arriving at the correct design of the roof deck, the completed weight of this roof, including surfacing, is estimated to be 94 lbs. per square foot.

Roof Decks:

Roof deck shall he of reinforced concrete and shall be made smooth and dry with no ridges or marked depressions prior to application of the roofing. Extreme care shall he taken to see that openings for roof drains are located at the actual low points in the deck, and all such openings for roof drains must he at least 6 feet distant from any wall or vertical surface in order not to interfere with subsequent drainage.

The construction of forms for pouring the hereinafter described drain boxes should he such as to allow for bottom of each drain box to be approximately 6 in. below surface of roof deck. See Fig. 6.

Coves or cant strips may he omitted.

Parapet and Bearing Walls:

Parapet or fire walls shall be laid up to a height of approximately 20 in. from the grade line of the roof deck and one course of back-up brick shall be omitted until the flashing work is completed following which the walls may be laid up to their required height. See Fig. 2.

In the case of a hearing wall where inside course cannot be omitted at the time of its building, one course of back-up brick shall he applied over completed flashing, properly capped and counter flashed as per Fig. 3.

Flashing:

Before commencing application of roof, all composition and metal flashing must he completed. Composition flashing shall be constructed strictly in accordance with Ruberoid Flashing Spec. Type No. 6B, using Ruberoid Tarred Felt throughout, and using Ruberoid Pitch Base Plastic Cement where plastic cement is indicated. A satisfactory alternate method may be used by mopping solid to the wall and together five sheets of Ruberoid No. 15 Tarred Felt with Ruberoid Roofing Pitch. All felts shall he run up vertical surfaces for a distance of 18 in. and out on roof for a distance of 30 in., nailing the top edges into the mortar joints at intervals of 12 in. on center, using a hardened cut nail and metal cap. Under no circumstances shall galvanized nails he used, if metal flashing material is to be of copper.

All parapet and fire-walls shall have installed a course of approved metal through-wall flashing of a type which has a flange extending not less than 4 in. down the inside face of the wall to serve as a counter flashing. Metal through-wall flashing shall he installed not less than 18 in., nor more than 22 in., above the finished grade line of roof deck. Metal base flashing of the same type as is used in the through-wall flashing shall he installed extending up vertical surfaces for a distance of 18 in. and out on flashing felts for a distance of 6 in.

Vertical joints in the metal base flashing shall be locked and soldered and joints in the metal through-wall flashing shall be lap joints of not less than 4 in. Fig. 2 and 3.

Vent Stack Flashing:

All vent stacks, exhaust pipes or similar openings through the completed roof shall be flashed with 4 lb. lead sleeves over the top of the pipe each having an 18 in. wide flange and these flanges shall be installed over all of the completed plies of roofing and double felt stripped prior to the application of the poured top coat of pitch and of the gravel. The tops of all such pipes shall be protected with metal screens or guards to prevent the entrance of debris due to future occupancy.

Fig. 1. The court between these apartment buildings at Fair Oaks, Minneapolis, is actually the roof of garage beneath. Lawns and shrubbery were planted over a Ruberoid Garden Roof.

Drain Boxes:

Included in the construction of the roof deck shall he the erection of reinforced concrete drain boxes surrounding the openings for roof drains which have been predetermined as being the low points, the number of roof drains and drain boxes depending on the area of the roof deck.

These drain boxes shall be approximately 40 in. square with 8 in. thick walls and extending 12 in. in height from the grade line of the roof deck. A variation of the length and width will be permitted to allow for the size of the man-hole cover frame to be provided and installed.

Round openings shall be provided through each side to accommodate the entrance of four copper pipe sleeves and flanges, such sleeves and flanges to allow for the entrance of 4 in. clay field tile and these openings are not to exceed 1 in. in height from the grade line of the roof deck. See Fig. 5 and 6. A square concrete pad shall be cast integrally with the bottom of the drain box, the top of the pad being at least 6 in. above the bottom of the drain box so as to provide a trap for sand and dirt between the entrance of the drain pipes and the roof drain.

Flashing of Drain Boxes:

The flashing of the exterior walls of the drain boxes shall proceed in the same manner as outlined under "Flashing," except that copper base flashing may he omitted and the copper counter flashing installed with a 6 in. flange extending over the completed roofing felts and a 1½ in. flange extending into the previously prepared raggle joint in the exterior walls of the drain box.

The bottom of the drain box shall be waterproofed with five plies of pitch and felt with gravel surfacing. The interior walls of each drain box as well as the concrete pad in which the roof drain is located shall he waterproofed by the application of four sheets of tar saturated waterproof fabric and five moppings of pitch, the fabric to he laid smoothly and without wrinkles and buckles. This interior waterproofing of drain boxes shall proceed before the installation of the copper pipe sleeves as indicated and the entire completed interior of each drain box shall be given a trowel coat of cement mortar. See Fig. 5 and 6 next page.

GARDEN ROOF CONSTRUCTION DETAILS

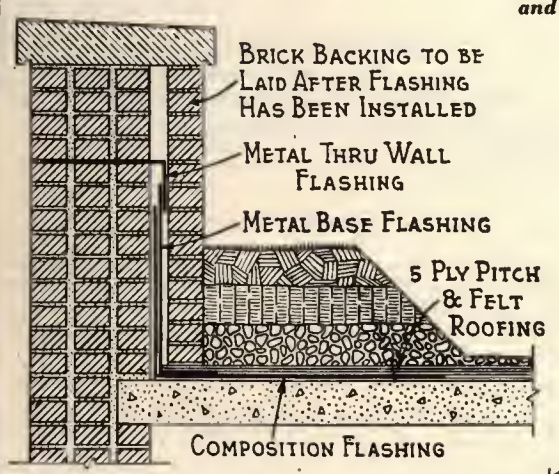


Fig. 2. Parapet Wall Flashing.

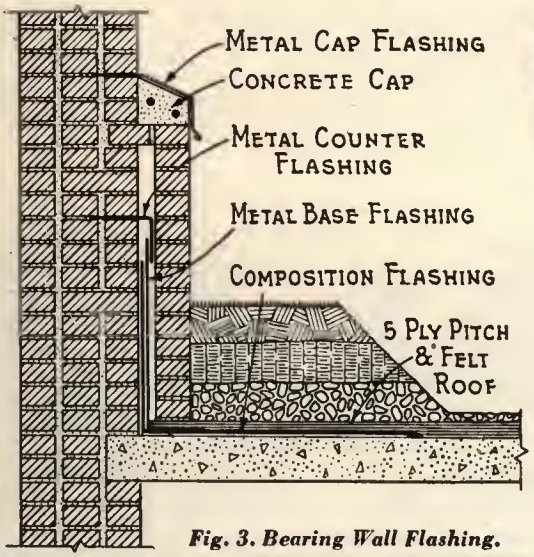


Fig. 3. Bearing Wall Flashing.

Fig. 4, right. Section through Completed Roof and Drainage Tile.

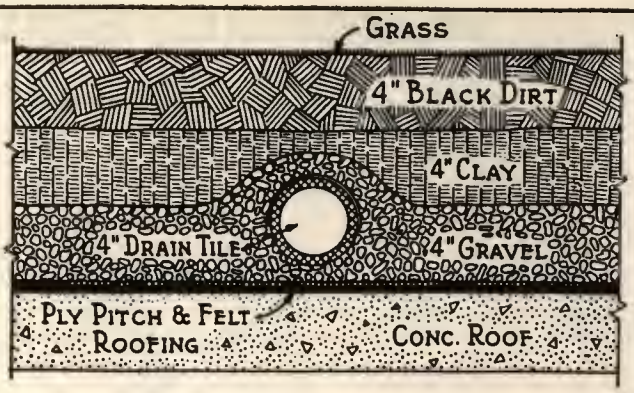
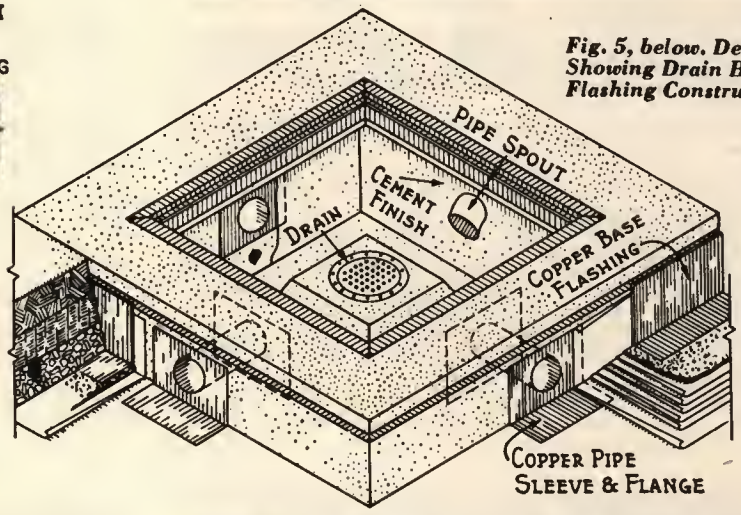


Fig. 5, below. Detail Showing Drain Box Flashing Construction.



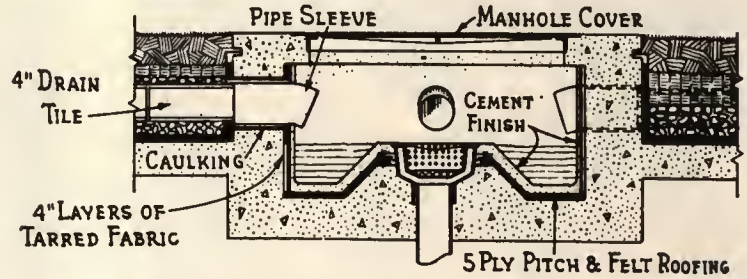


Fig. 6. Detail Showing Drain Box Construction.

APPLICATION OF ROOFING

After all flashing has been completed and drain boxes waterproofed (see Fig. 6) apply over the entire roof deck a Ruberoid Built-up Coal Tar Pitch and Tarred Felt, Gravel Surfaced Roof in accordance with Ruberoid Spec. No. 203 except that five plies of felt shall be laid instead of four, lapping each sheet 29 in. over the preceding one and mopping solid throughout.

Before pouring the top coat of pitch, plug all drains and outlets and flood the entire roof area with water to a depth of approximately 2 in., and allow to remain for 24 hours so as to determine that the roof and all flashing are water-tight. When this is determined, drain the roof and allow the felts to dry thoroughly before proceeding.

After the surface of the felt has dried thoroughly, pour a top coat of Ruberoid Coal Tar Pitch in the amount of not less than 60 lbs. per square into which, while hot, embed clean dry ½ in. to ¾ in. gravel to an approximate depth of 4 in., raking the gravel to a smooth even surface.

Roof Drains:

If the roof drains which are to be furnished and installed by the plumbing contractor are fitted with metal flanges, such flanges must be applied over the completed waterproofing and double felt stripped prior to the pouring of the top coat of pitch and application of the gravel. If they are of a type fitted with clamping rings without flanges, four sheets of Ruberoid Tar Saturated Fabric shall be installed over and into the rings with plastic cement and this fabric then covered with a collar of fabric applied in plastic cement prior to fastening the upper ring, following which a trowel coat of cement mortar shall be applied over the entire area as per Fig. 6.

FINISHING

Field Drain Tile:

Sweep trenches in the surface of the gravel to a depth where the poured top coat of pitch is visible, in these trenches lay lines of field clay tile having a diameter of 4 in. extending outward from the four sides of each of the drain boxes. The joints of the tile shall be butted and the lines shall be laid as straight as possible. They shall extend out to either the nearest high point in the roof deck, or until they meet with a similar line from any other adjacent drain box. The first section of field tile shall extend into the pipe sleeve and be caulked into the sleeve with Oakum and plastic cement.

Close observation and identification shall be made at the time of draining the roof after the test flooding so as to determine the high points adjacent to each drain box where the line of field tile shall be directed.

After tile is laid, sweep gravel back to and over it so that tile will be held in place until application of final surfacing.

Garden Surfacing:

The following work shall be done preferably under subcontract by a landscape gardening organization familiar and equipped with means of supplying and installing dirt and fill.

Over the 4 in. of gravel which has been applied on the roof and raked smooth, install a course of clay sub-soil to a depth of 4 in. raking or rolling level and smooth. Immediately after application of clay, install black dirt suitable for growing grass to a depth of 4 in. more or less, to bring completed roof surface up to lower edge of drain box covers.

Sow grass seed or lay sod as desired and install manhole covers in the frames which are provided.

The building caretaker shall be instructed to clean the drain boxes of accumulated silt at intervals of not over 30 days.

RUBEROID FLASHTITE FLASHINGS

For use with Ruberoid Bonded Roofs

TYPE NO. 3 FLASHING

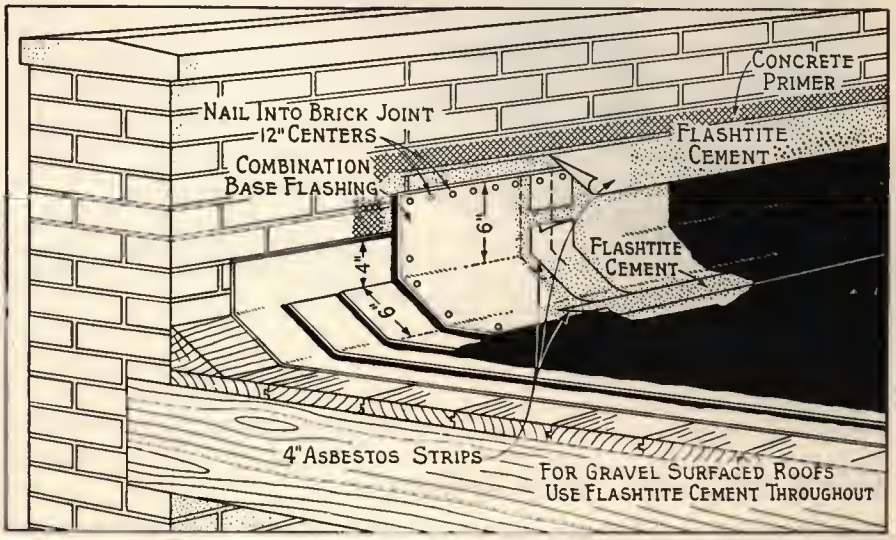
(10-year Endorsement)

Maximum height above grade line af raaf deck 12-Inches. Minimum height abave grade line of roof deck 8-Inches. Not suitoble far use with water insulated roofs.

This is a practical, inexpensive method of flashing any type of vertical wall or curb which will permit of permanent and frequent nailing. It is not suitable for reinforced concrete surfaces unless nailing strips are cast integrally.

No metal is required and the entire installation can be completed by the roofing contractor. It is suitable for use with either flat or steep roofs, and in conjunction with either smooth or gravel surfaced roofs.

This flashing is not suitable for use with water-cooled roofs where portions of it are subject to constant immersion in water.



TYPE NO. 4 FLASHING

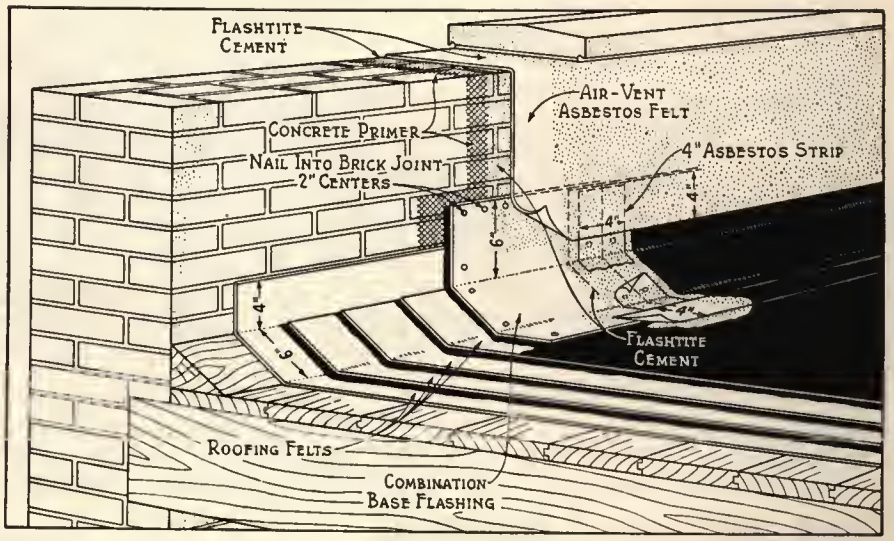
(10-year Endorsement)

Maximum height abave grade line af raaf deck (exclusive af caping) 36-inches. Minimum height abave grade line af raaf deck (exclusive af caping) 12-Inches. Nat suitable for use with water insulated roofs.

This type of flashing is recommended for use where it is desirable to cover and make waterproof the entire top and inside surface of parapet walls.

In all cases, it is essential that masonry coping be used with this flashing, and that the flashing be completely installed before the masonry coping is applied.

This flashing is not suitable for use with water-cooled roofs where portions of it are subject to constant immersion in water.



TYPE NO. 5 FLASHING

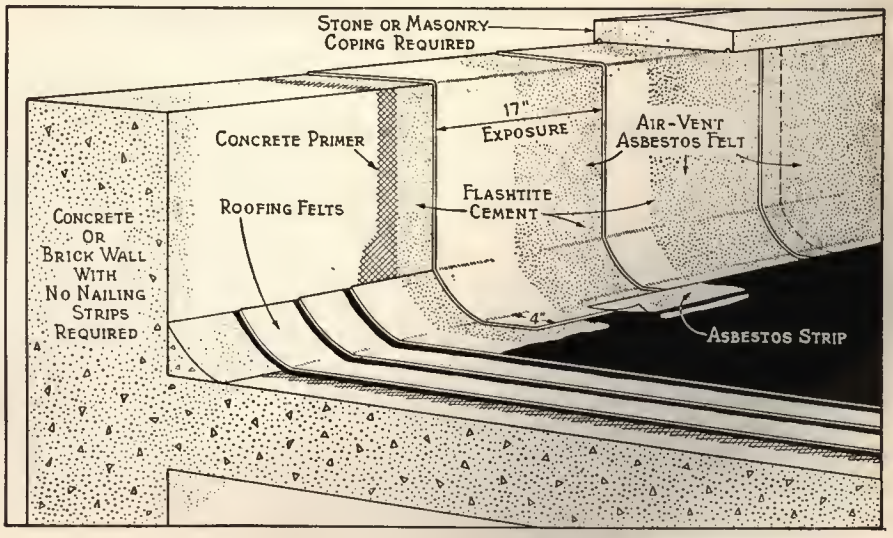
(15- or 20-year Endorsement)

Maximum height abave grade line af raaf deck (exclusive af caping) 36-inches. Minimum height above grade line af raof deck (exclusive af caping) 12-Inches. Not suitable far use with water insulated roafs.

Requirements for installation of this flashing are the same as for Type No. 4 (outlined above). Application of an additional sheet of felt and an additional trowel coat of Flashtite Cement make for considerably longer life.

In all cases, it is essential that masonry coping be used with this flashing, and that the flashing be completely installed before the masonry coping is applied.

This flashing is not suitable for use with water-cooled roofs where portions of it are subject to constant immersion in water.



RUBEROID

TYPE NO. 6 FLASHING

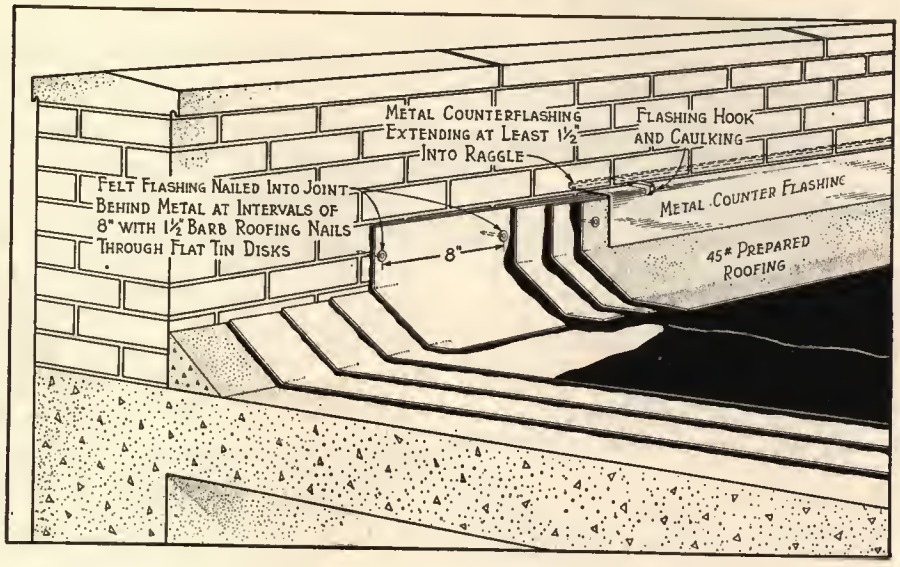
(10-, 15- or 20-year Endorsement)
Metal Counter Flashing

Moximum height of reglet above grade line of roof deck 18-inches. Minimum height of reglet above grade line of roof deck 8-inches.

This is one of the oldest forms of composition flashing, and is probably the most satisfactory when properly installed.

For a 10- or 15-year Endorsement, 26 gauge galvanized iron, painted both inside and out with red oxide, is required. For a 20-year Endorsement, 16 oz. copper counter flashing is required. It is essential that the metal counter flashing be installed immediately after application of the composition felts (to prevent the infiltration of water during a sudden rain behind the unprotected upper edge of felts).

This flashing is suitable for use with water-cooled roofs, as it will successfully withstand long periods of complete immersion in water.



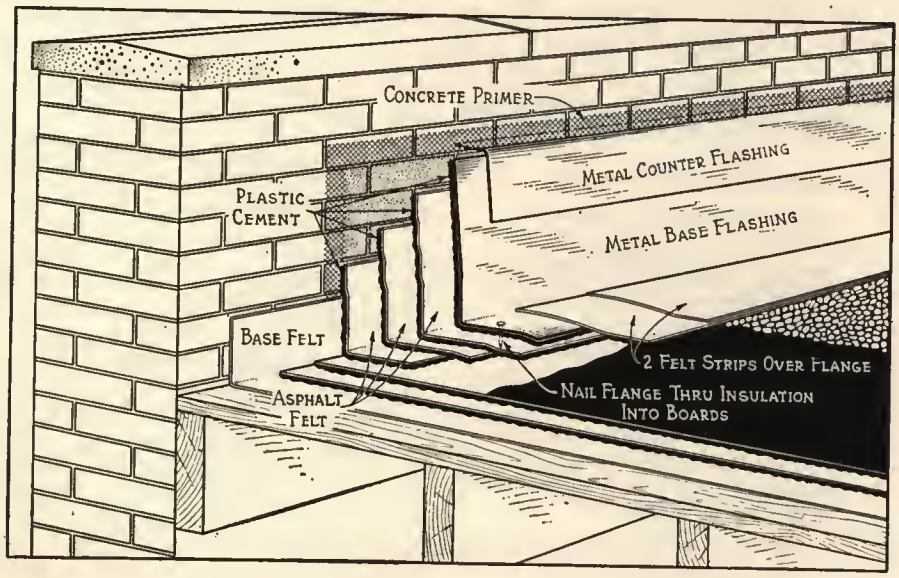
TYPE NO. 6A FLASHING

(10-, 15- or 20-year Endorsement)
Metal Base and Counter Flashing

Moximum height of reglet above grade line of roof deck 18-inches. Minimum height of reglet above grade line of roof deck 8-inches.

The specification for this flashing provides for the conventional method of installing both metal base and counter flashing in those sections of the country where such construction is standard practice.

For a 10- or 15-year Endorsement, 26 gauge galvanized iron, painted both inside and out with red oxide, is required. For a 20-year Endorsement, 16 oz. copper counter flashing is required.



TYPE NO. 6B FLASHING

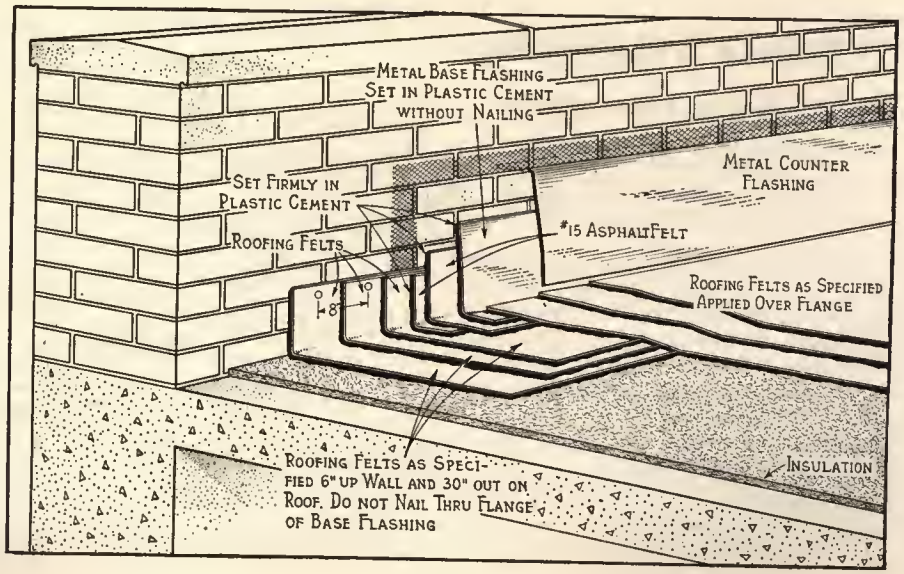
(10-, 15- or 20-year Endorsement)
Metal Base and Counter Flashing

Maximum height of reglet above grade line of roof deck 18-inches. Minimum height of reglet above grade line of roof deck 8-inches.

This flashing is similar to Type No. 6A except that it provides for installing the flashing without the necessity of nailing to the roof deck. It should be specified in all cases where metal base and counter flashing is installed in conjunction with roof insulation. (It has been found not practical to attempt nailing through a metal flange into roof insulation.)

This method of installing metal base and counter flashing should also be employed in conjunction with masonry roof decks.

For a 10- or 15-year Endorsement, 26 gauge galvanized iron, painted both inside and out with red oxide, is required. For a 20-year Endorsement, 16 oz. copper counter flashing is required.



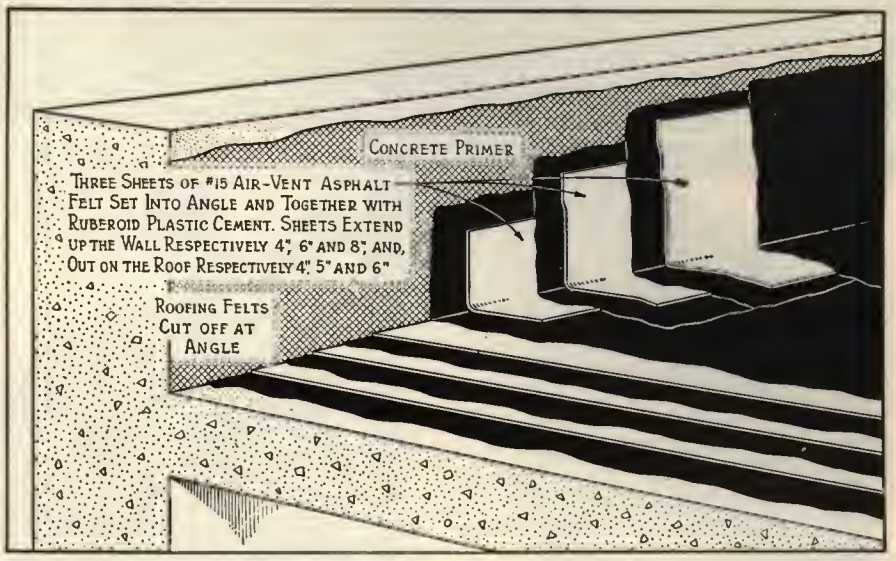
TYPE NO. 7 FLASHING

(10-year Endorsement)

Not suitable for use with water insulated roofs.

This method of flashing is especially recommended where it is not possible to obtain adequate nailing (such as for reinforced concrete parapet walls, fire walls, curbs, concrete penthouse walls, etc., which are not suitably equipped with nailing strips).

The amount of waterproofing employed in this flashing construction makes it suitable for use with water-cooled roofs.



TYPE NO. 8 FLASHING

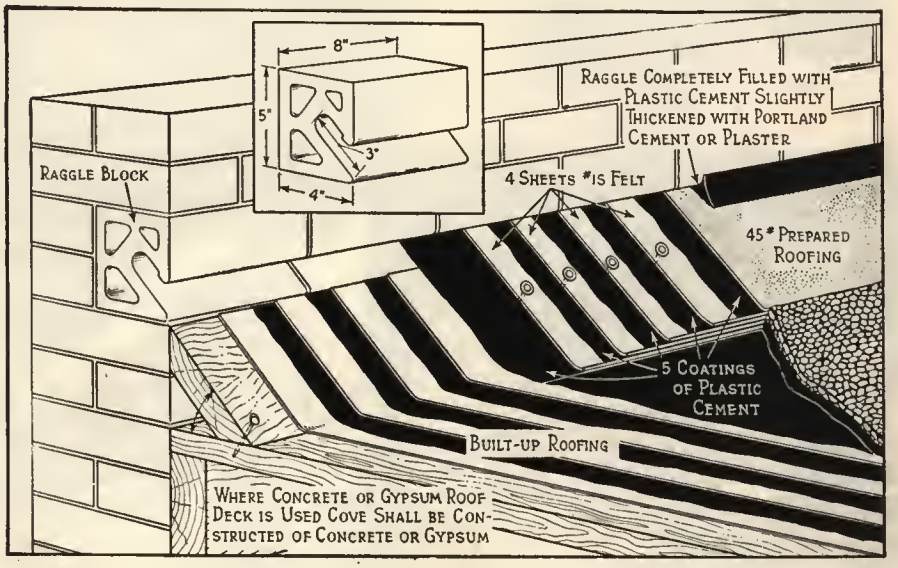
(15- or 20-year Endorsement)

Flashing Block

This flashing block was originally designed for, and can be used successfully only in conjunction with, random level roof decks. It must not be used on areas where there are valleys, crickets, or any other inclines. (Although this type of flashing has been used in conjunction with steep roofs, the excessive cost of cutting brick to provide for a straight line makes such construction highly impractical.)

To obtain a properly finished job, the grooves of the flashing blocks must be set in a straight, horizontal line 5 in. above the grade line of the roof deck.

The amount of waterproofing employed in this flashing construction makes it suitable for use with water-cooled roofs.



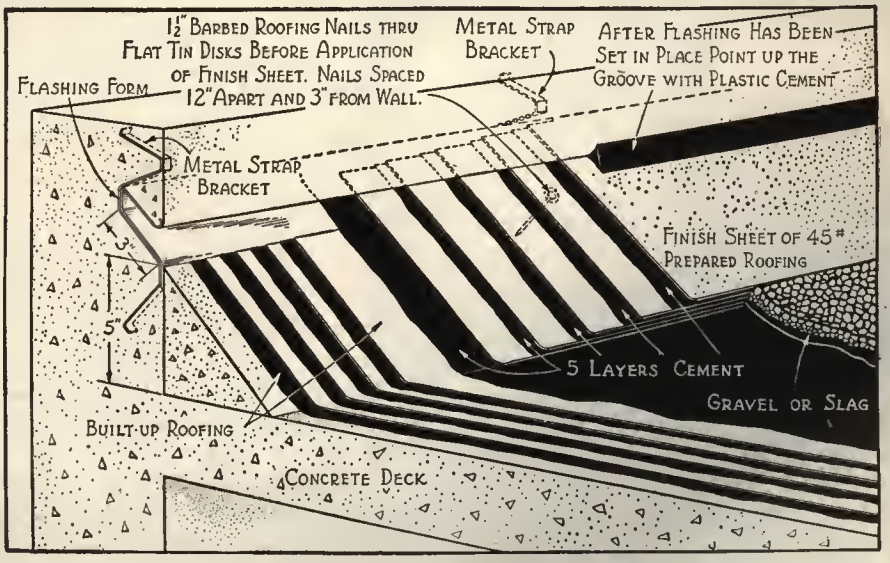
TYPE NO. 8A FLASHING

(15- or 20-year Endorsement)

Flashing Form in Concrete Walls

The same data outlined above for Type No. 8 Flashing (for brick walls) applies to Type No. 8A Flashing (for concrete walls).

This construction, too, should be used only in conjunction with random level roof decks; it must not be used on areas where there are valleys, crickets, or any artificial inclines whatever.



RUBEROID

The answer to ROOF BLISTER PROBLEMS

TRAPPED AIR CAUSES BLISTERS

On Flat Roof Decks

At Flashings and Bends

Air-Vent Prevents Blisters

Air Escapes thru Perforations

RUBEROID PERFORATED AIR-VENT FELT

The "Double Valve" action of Ruberoid Air-Vent* Felt averts many annoying roof failures. Air, trapped under roofing, expands with the sun's heat, causing blisters that bulge and lift. Patented Air-Vent Felt has pinpoint perforations—punched alternately from top and bottom—that form "Outlet" and "Inlet" valves. When Air-Vent is laid, the air or vapor beneath is forced out through these tiny "Outlet" valves, Asphalt seeps through the "Inlet" valves giving a better bond between the layers of felt. Result: freedom from blister problems.

Ruberoid Air-Vent Felts (available in both Asphalt and Asbestos types) have proved themselves through years of use on industrial and commercial buildings in all weathers. Specify Air-Vent for built-up roofs . . . it reduces roofing failures and costly repairs. Ask your approved Ruberoid roofing contractor or write us for full specifications.

* Pat. No. 2096784

The RUBEROID Co.

Executive Offices: 500 FIFTH AVENUE, NEW YORK 18, N. Y.

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[illegible]BILE 8, ALABAMA: Emogene Street

BIRD Master-Bilt

WEATHER-TEX THICK-BUTT SHINGLES

SLATE BLENDE

BIRD & SON, inc.

BIRD PRODUCTS

Established 1795

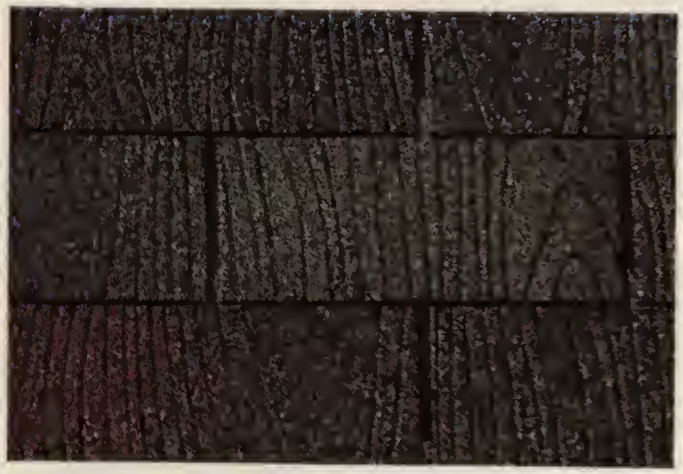
1949

BIRD *Master-Bilt*

WEATHER-TEX
THICK-BUTT SHINGLES

See also BIRD NEPONSET BLACK VAPOR BARRIER CATALOG in Insulation Section of Sweet's

For longer wear and distinctive appearance Select BIRD *Master-Bilt* THICK-BUTT Shingles



SLATE BLENDE—This popular shingle blende in Weather-Tex combines conservative color with the solid appearance found in slate.

COLONIAL GREEN—The new Bird Green perfeeted by Bird Color experts to meet the growing demand for bright green roofs.

Notice the two *extra* protective layers on a BIRD Master-Bilt Shingle. The extra asphalt coating and extra mineral granules on the exposed butt of the shingle assure you of these added values:

GREATER BEAUTY — Thicker butts cast heavy shadow lines. This feature plus Master-Bilt's massive appearance makes a truly beautiful roof.

GREATER DURABILITY — Not one, but TWO protecting layers safeguard the roof. In addition, all granules on BIRD Master-Bilts are primed for complete adhesion to the asphalt.

GREATER FIRE PROTECTION — The extra layer of fireproof mineral granules assures greater safety from chimney sparks or flying fire brands.

The colors shown are but a few of those available. Write us for the name of your nearest BIRD dealer who will show you complete color selection.

BIRD *Master-Bilt* WEATHER-TEX THICK-BUTT SHINGLES

BIRD *Master-Bilt*

WEATHER-TEX
THICK-BUTT SHINGLES

See also BIRD NEPONSET BLACK VAPOR BARRIER CATALOG in Insulation Section of Sweet's.

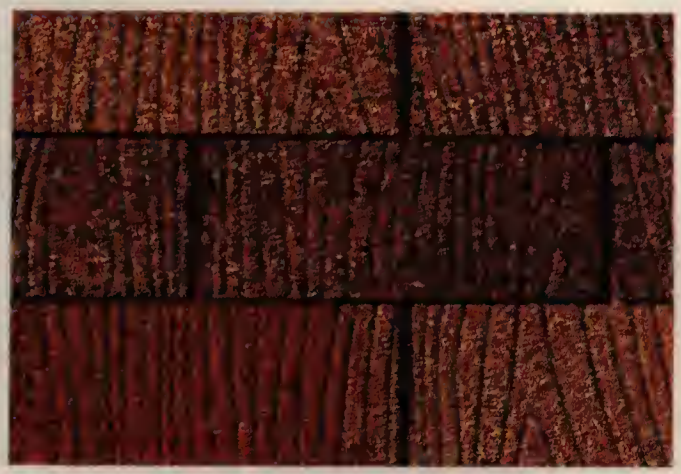
Available in Two Surface Finishes

PLAIN
OR
WEATHER-TEX

And in a wide choice of COLORS and BLENDES

SPECIFICATIONS

SIZE OF EACH STRIP	12 in. x 36 in.
TABS PER STRIP	3
HEADLAP	2 in.
EXPOSURE ✪	5 in.
APPROX. WEIGHT PER SQUARE	210 lbs.
UNITS PER SQUARE	80
UNDERWRITERS' LABEL	Class C



RUSSET-GLO—The attractive weathered effect in bright BIRD Russet-Glo Blende, Weather-Texed.

✪

This shingle may be laid with only 4 in. exposure, giving triple thickness roof—4 in. headlap, and weighing 265 lbs. to 100 sq. ft. Roofs so laid require 100 shingles, or 25% more material per 100 sq. ft. Especially suited for high wind areas.

BRIGHT RED—A red which will set your home off—give it a modest distinctiveness.

BIRD & SON, inc.
BIRD PRODUCTS
Established 1795

BIRD *Master-Bilt* WEATHER-TEX THICK-BUTT SHINGLES

BIRD 19″ PROSLATE ROOFING

ARCHITECTS, CONTRACTORS, BUILDERS are swinging to this roofing with the concealed nail application

2 BIG REASONS WHY

1. Proslate is applied differently. It's double-locked onto the building: first, with concealed nails that can't work loose and cause leaks. And then each strip is bonded to the next, with the exclusive BIRD Quick-Set Cement. This double-lock method, free of nail holes, produces one great wind-proof, leak-proof sheet, so strong that hurricanes can't tear it apart.

2. Proslate has a surface that even the roughest weather can't harm, because Proslate is different from ordinary roofings. It's doubly protected by a tougher *reinforced* asphalt base, and deeply embedded mineral granules to resist sun exposure, fire and weather wear. Yet Proslate is economical; low in first cost, and even lower as *trouble-free* years roll by.

Approved by the National Board of Fire Underwriters.

Important Points to Remember when Selecting Roofing for Heavy Duty

1. PROSLATE provides the Double Locked Roof
   A — Through concealed nailing
   B — Through sealed laps
2. 50% more Headlap than ordinary roofing.
3. Every lap *permanently* sealed with BIRD Quick-Set Cement included with each roll.
4. No Nail Holes in exposed roofing to permit leaks to develop around nails.
5. Choice of Colors. PROSLATE is available in attractive plain colors which harmonize with all shingle colors and blends.

BIRD PROSLATE is ready to withstand the heaviest punishment. Specify PROSLATE wherever roll roofing is required, such as for low pitched porches, garages, camps, industrial buildings, railroad stations, and for all farm buildings.

SPECIFICATIONS

Width of Roll	19″
Approx. Weight per Roll	92 lbs.
Square Feet per Roll	122.5 (covers 100 sq. ft.)
Lap	3″ Selvage
Underwriter's Label	Class C
Fixtures Included	½ Gal. BIRD Quick-Set Cement and sufficient nails

BIRD & SON, inc.

BIRD PRODUCTS

Established ® 1795

ASPHALT SHINGLES · INSULATED SIDINGS
BUILDING PAPERS · FLOOR COVERINGS
LINOLEUM · ARMOLITE RUGS

RUBBERLIKE FLOOR RUNNER · INDEX PRESSBOARDS · SHIPPING CONTAINERS
SHOE CARTONS · BUILT-UP ROOFS
BIRD CLEATED FIBRE BOXES

Bird & Son, inc.
East Walpole, Mass.

295 Fifth Avenue
New York 16, N. Y.

Areo Drive
Shreveport 81, La.

1472 W. Seventy-Sixth St.
Chicago 20, Ill.

No. 1062-I-DH-DJ.

Printed in U.S.A.

Carey

DEPENDABLE PRODUCTS

ASBESTOS CEMENT SHINGLES

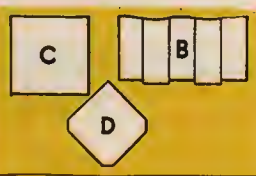
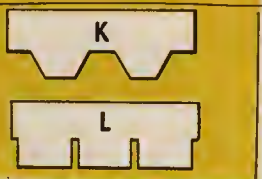
ASPHALT SHINGLES

PREPARED ROOFING

76 YEARS OF SERVICE TO HOME AND INDUSTRY

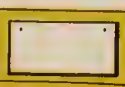
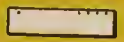
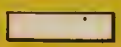
THERE'S A *Carey* ROOF FOR EVERY BUILDING

SELECTION TABLE

GROUP	SHAPE	NAME	Sizes, In.	Exposure, In.	Head-lap, In.	Weight per sq. lb.	Under-writers' Label	Page
ASBESTOS-CEMENT SHINGLES		(B) Tri-Tone Blend Strip Shingle No. 20	12 x24	9x20	3	280	Class "B"	3
		(C) Scotch No. 30	16 x16	12x13	3	290	Class "B"	3
		(D) French No. 70	16 x16	13	3	260	Class "B"	3
ASBESTOS-CEMENT SIDING		(E) Old Colony Duo Edge No. 210	12 x24	10½x24	1½	180		4
		(F) Old Colony No. 205	12 x24	10½x24	1½	180		4
ASPHALT INDIVIDUAL SHINGLES		(I) Asfaltslote (for Dutch Lop applicotion)	12 x16	10	2	162	Class "C"	5
		(J) Coreylok (Hexogonol)	16 x16		2½	138	Class "C"	5
ASPHALT STRIP SHINGLES ‡Also ovoiloble in Textured		(K) 2 Tob, Hexogonol	11⅓x36	4⅔	2	167	Class "C"	8
		(L) 3 Tob, Squore Butt	12 x36	5	2	210‡	Class "C"	8

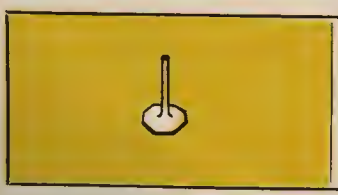
Insulated Brick Siding.....Page 9 Prepared Roll Roofing.....Page 10 Roll Brick Siding.....Page 9

STARTERS FOR CAREYSTONE SHINGLES

SHAPE	STYLE	SIZES, In.	COLORS	COVERAGES (Per 100 lineal ft.)	WEIGHTS, Lbs. (Per 100 lineal ft.)
	Americon	8x16	Mixed	75 pcs. (3-15/20 bdls.)	130
	Scotch	4x16	Mixed	100 pcs. (5 bdls.)	90
	Strip Shingle	4x24	Mixed	60 pcs. (3 bdls.)	75
	French Method Eove Storter	4x16	Mixed	75 pcs. (3 bdls.)	60
	French Method Second Storter	20½ (wide)	Groy ond Mottled	60 pcs. (3 bdls.)	120

RIDGE SHINGLES AND ROLLS

	Hip and Ridge Shingles No. 57	5½ to 6 wide 16 long	Windsor Groy, Mottled	336 Shingles (11-6/30 bdls.)	400
	Curved Ridge Roll	16-in. lengths	Windsor Groy, Mottled	93 Sections	240
	Angle Ridge Roll	16-in. lengths	Windsor Groy, Mottled	88 Sections	260



Galvanized Needlepoint Nails
1¼ in., 238 per lb.
1¾ in., 170 per lb.

Storm Buttons
112 pcs. per lb.

UTILIZIT BOARD

The ideal underlayment for Careystone Siding offering more than twice the protection and insulation of ordinary asphalt felts and providing a smooth, fl nailing surface, which assure the best workmanshi and finished appearance to the job. Furnished in sheets, 48" x 6 weight 60 lbs. per 100 square feet.

SLATERS CEMENT—Knife or Gun Grade Consistency. Furnished in all colors to match Careystone accurately. Packed conveniently in 5-lb. cans to 300-lb. bbls.

Careystone ASBESTOS CEMENT SHINGLES

FIREPROOF . . . . . PERMANENT

The ORIGINAL ASBESTOS-CEMENT STRIP SHINGLE

TRI-TONE BLENDS No. 20

This shingle is furnished in four types of five panel strips. Each panel, on each strip, has its own individual, authentic wood grain texture, a separate color tone and a corresponding staggered butt. Regardless of how these strips are laid there can be no bunching of tones or patterning.

Tri-Tone Strip Shingles are moderately priced; have real individual appearance; produce harmonious blends; give complete weather protection; and the application is simple. Every corner is securely anchored and the corners and butts lie flat and stay down: side lap stagger is not apparent.

Colors: "Tri-Tone Blends"—Gray.

Size: 12 x 24 in., exposure 9 in., 80 pieces (4 bdls.) per square.
Required: 160 Needlepoint Nails, 80 storm buttons per square.
Weight: Approx. 280 lbs. per sq.
Underwriters' Label Class B.

TRI-TONE BLENDS . . . Three Shades on Each Shingle in Four Combinations. Can Be Laid with Wave Line or Staggered Butt Exposed.

OTHER CAREYSTONE SHINGLES

SCOTCH METHOD No. 30

Has the texture and appearance of American Method Shingles though the cost is much less.

Size: 16 x 16 ins. *92 shingles (4 bdls.) per square. Exposure: 12 x 13 ins. Required: 184 Needlepoint Nails and 92 Storm Buttons per square. *Actual coverage 99⅔ square feet.

Note: Also applied with 5⅓ in. side lap requiring 104 shingles per square.

Colors: Windsor Gray, Mottled.

Weight: Approximately 290 lbs. per square.

Underwriters' Label **Class B.**

FRENCH METHOD No. 70

Smooth stone-like surface combining beauty, protection and permanent service at low cost.

Size: 16 x 16. Smooth Finish. 3 in. Headlap 86 shingles (4-2/21 bundles) per square.

Required: 172 Needlepoint Nails and 86 Storm Buttons per square.

Colors: Gray, Mottled.

Weight: Approximately 260 lbs. per square.

Underwriters' Label **Class B.**

Apply Coreystone Shingles over Carey 15 or 20-lb. Fiberock or Corey Asbestos Roll Roofing.

Careystone SIDING

FOR ANY STYLE HOME

This sidewall material, made of Portland Cement and Asbestos Fibres, will provide lifetime service. It is low in first cost, requires a minimum of upkeep expense, and greatly improves a home. Careystone Siding is fireproof, termite proof, will not rot, deteriorate, or curl; and gives added insulation.

NEW DUO-EDGE No. 222

The effect of individual shingles laid with staggered butts and random widths is secured through careful selection and arrangement of adjacent panels of contrasting wood grain texture on each unit. By exposing the other edge a straight line appearance is secured.

Size: 12 x 24 in. Exposure: 10½ x 24 in. 57 pieces (three bundles) per square.

Weight: Approximately 172 lb per square.

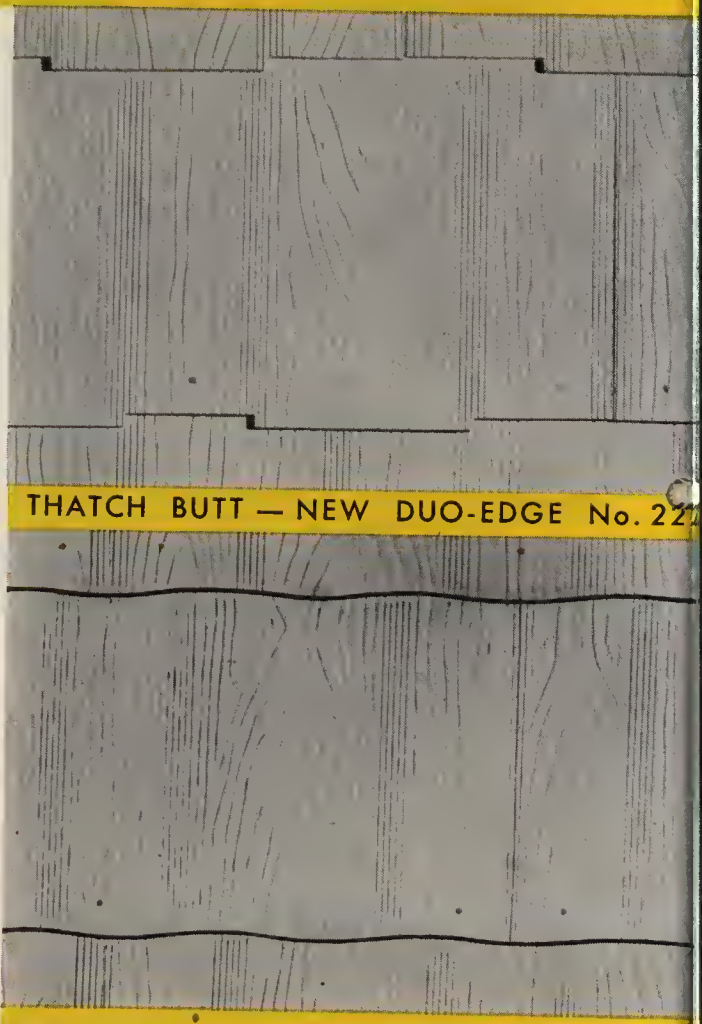
Color: Ducks-Back White.

171 Headlap nails required. Extras included: 3 x 12 in. smooth black backer strips and sufficient face nails—1 package per square.

WAVELINE No. 205

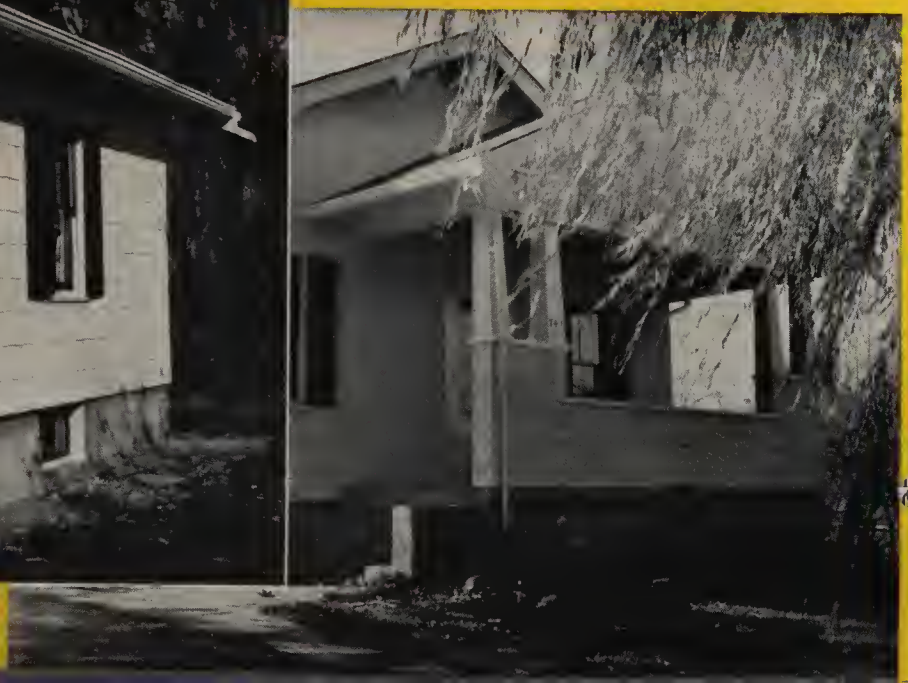
Same as No. 222 except laid wave line only.

Application and insulation is considerably improved when Careystone is laid over Carey Utilizit Board.



THATCH BUTT — NEW DUO-EDGE No. 22

WAVELINE No. 205



Careylok ASPHALT SHINGLES

Individual Asphalt Shingles are especially designed for application over old roofs. Exposed corners are securely locked down with extra heavy anchors which are furnished without extra charge. These anchors are so small that they can hardly be noticed from the ground.

Easily applied over old wood shingles or other types of roofs. They cling snugly to the old roof, shutting out wind, rain, or snow. Application is simple and inexpensive.

INDIVIDUAL ASPHALT SHINGLES
(FOR DUTCH LAP APPLICATION)

There is no trick in applying Extra Heavy Weight Shingles—no odd designs, just the conventional straight vertical and horizontal lines much preferred everywhere. By varying the depth of the overlap the finished design of the roof can be changed to suit any taste.

Colors: Dixie Green, Blue Black, Tile Red.

Size, main body: 12 x 16 in. Anchors furnished. 112 Shingles (2 cartons) per square.

Weight: Approximately 162 lbs. per square.

Underwriters' Label Class C.

Note: If double coverage is desired, order 188 shingles (1.67 squares) for each square of roof area and apply with 6-in. headlap.

EXTRA HEAVY WEIGHT

CAREYLOK "80" SHINGLES

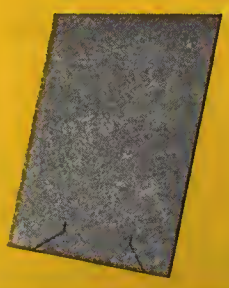
Careylok "80" Shingles are ideal for application over old roofs. They are weathertight, stormproof, and fit snugly. Wind pressure locks them even tighter. High percentage of double exposure.

Colors: Dixie Green, Emerald Blend, Azure Blend.

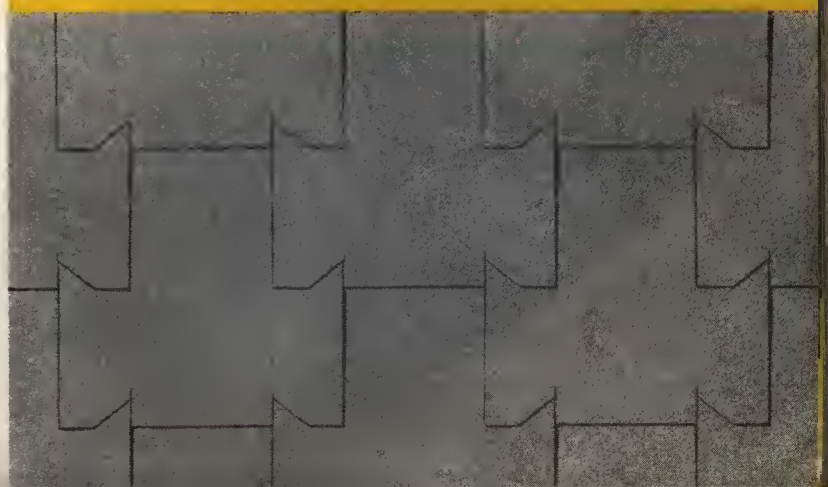
Size: 16 x 18 in. 80 shingles (2 cartons) per square.

Weight: Approximately 138 lb per square.

Underwriters' Laboratories, Inc. Label Class C.



CAREYLOK "80"



Carey Asphalt Saturated and Coated Sheathing Felt applied under the shingles assures longer service.

Your Choice

Carey

Dependable Products Since 1873

Years of Research--in Laboratory and Field make possible these Better-Value Building Products

DEPENDABLE, waterproof protection will always be the first essential of a good roof.

Yet the roof must satisfy another important requirement — appearance. Because the roof is the largest single area in the house and the dominant feature of its exterior, it should be in complete harmony both with the style of architecture and the color of the building.

Today, more than ever before, outside appearance is an important factor in home value. Home buyers want a roof that emphasizes the character of the

Harvest Blend—capturing all the warmth and glow of nature's own colors at harvest time. Other blends are Green, Red, Russet and Brown.

Dixie Green—adaptable to most types of architecture and with almost every exterior color scheme. Attractive solid colors available are Slate Green, Tile Red, Blue Black.

OF HARMONIOUS ROOF COLORS THAT ENDURE

home—that gives it dignity and charm. Here, color plays a vital part.

Carey Shingle colors have been developed through years of careful study and experience in satisfying individual preferences of home owners and the rigid requirements of architects.

Carey Shingles are available in an adequate range of nature's own colors—warm reds, cool green and beautiful blended tones, as reproduced on these pages. These colors harmonize with architecturally correct home exteriors and through combination of colors, an almost endless variety of effects may be secured, to meet the demands of any individual taste.

Carey Shingle colors are permanent. They cannot fade or wash off when exposed to the weather.

Carey will be glad to supply you with samples, so you may try them in various combinations and make sure your final selection will be right.

QUALITY CREATED AND MAINTAINED IN

Carey RESEARCH LABORATORIES

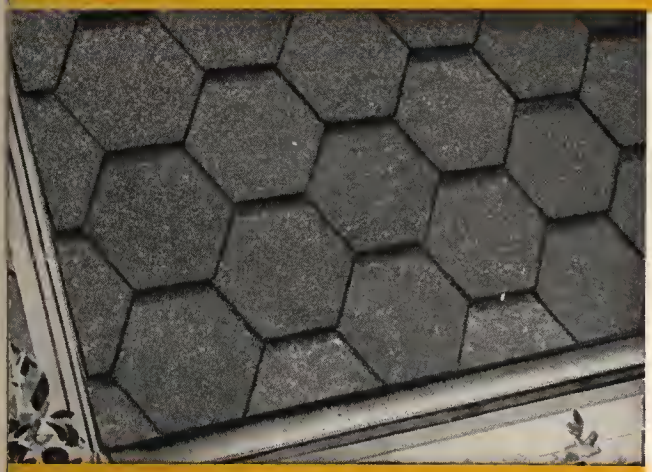
Weather-Ometer in which intensified weathering conditions are reproduced.

Exposure of test panels to every variety of weather checks the laboratory results.

Azure Blend—one of the most popular blends in the shingle line. Blue predominates, blended with complimentary colors in subdued tones to create a pleasing effect.

Slatex—Soft, pleasing tones, with textured surface simulating natural wood graining. Other colors with textured surface are Greentex and Azurtex.

Carey ASPHALT STRIP SHINGLES



2 TAB HEXAGONAL

11⅓ x 36 IN.

2-in. headlap. 86 shingles—packed 2 cartons per square.

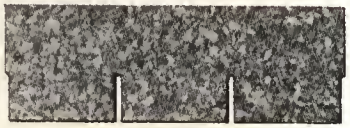
Colors: Dixie Green, Slate Green, Tile Red, Blue Black, Green Blend, Red Blend, Harvest Blend, Azure Blend.

Weight: Approximately 167 lbs. per square.

Underwriters' Laboratories, Inc., Label Class C.

SUPER STRIP

250 lb, 3-tab square butt, 12" x 36" (Approximately 250 lb per square)



THICK BUTT

210 lb, 3-tab square butt, 12" x 36" (Approximately 210 lb per square)

Both Super Strip and Thick Butt shingles have 2-in. headlap. 80 strips—packed 3 cartons per square. Laid 5 in. to the weather. Self spacing.

Are available in: Dixie Green, Slate Green, Tile Red, Blue Black, Green Blend, Red Blend, Harvest Blend and Azure Blend colors.

Both carry Underwriters' Laboratories, Inc. Label Class C.

3 TAB SQUARE BUTT — TEXTURED

12 x 36 IN.

The textured surface of this shingle is produced by a special process, developed by Carey, which faithfully reproduces true wood graining.

2-in. headlap. 80 strips—packed 2 bundles per square. Laid 5 ins. to the weather. Self spacing.

Colors: Azuretex, Greentex, and Slatex (see color reproduction on center-spread).

Weight: approx. 210 lbs. per square.

Underwriters' Laboratories, Inc., Label Class C.

Carey Asphalt Saturated and Coated Sheathing Felt applied under the shingles assures longer service.

Carey INSULATED BRICK, THATCH AND STONE DESIGN SIDING—ROLL BRICK SIDING

INSULATED SIDING

Carey Insulated Siding, Bricsulate, Stonesulate and Thatchsulate, are suitable for modernization and new construction. The heavy insulating board, which forms the rigid back of Carey Insulated Sidings, provide effective insulation—increase comfort in summer—reduce fuel consumption in winter—lower upkeep expense.

Carey Insulated Sidings protect the building by fire-resistant qualities and by the extra strength in large, rigid panels.

Carey Insulated Siding Panels are easily and quickly applied directly over old weatherboards, stucco or wood shingles.

Bricsulate colors reproduce the most popular brick used today—red, Red Blend, Tapestry, Light Buff and Gray Blend.

Stonesulate color: Gray Blend.

Thatchsulate color: Amber Blend.

Insulated Siding Panel Specifications: Size—43⅞" x 14⅜"; 12 pieces per carton; 2 cartons per square; approximately 190 lb per square.

Insulated Siding Corner Piece Specifications:

Bricsulate: 3⅝" x 3⅝" x 33¾"; 7 pieces per carton; 19.5 lineal ft. per carton; 29 lb. per carton.

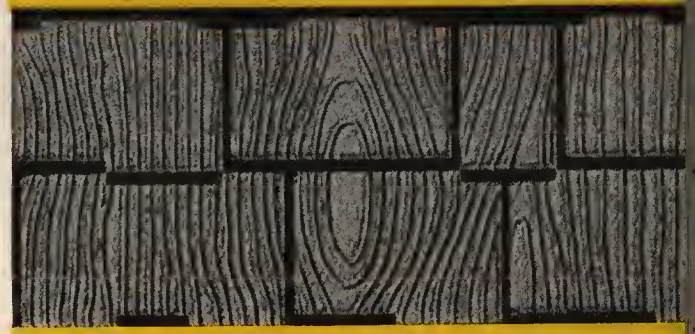
Stonesulate: 3⅝" x 3⅝" x 33¾"; 7 pieces per carton; 19.5 lineal ft. per carton; 29 lb per carton.

Thatchsulate: 3⅝" x 3⅝" x 34¾"; 7 pieces per carton; 20.3 lineal ft. per carton; 32 lb per carton.

Caulking Compound, Caulking Guns, Rustproof Black Nails, Knife Blades and Handles also available.

BRICSULATE

STONESULATE



THATCHSULATE

Right—CORNER, WINDOW AND DOOR TRIM — Completes the realistic appearance of genuine brick work.

CAREY ROLL BRICK SIDING

A good low-cost outside wall covering that effectively reproduces the appearance of brick.

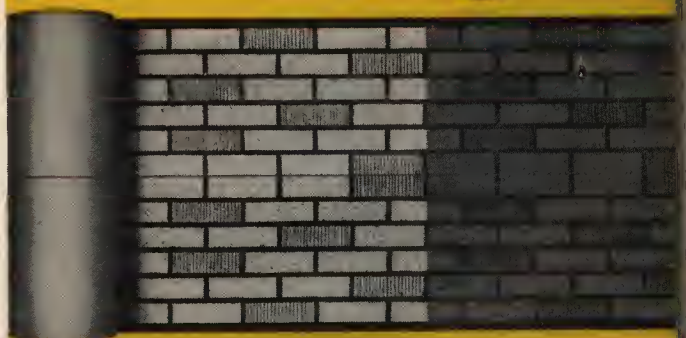
Improves wall appearance and provides additional weather protection for a surprisingly small investment. Easy and inexpensive to apply.

Comes in roll form, like roll roofing. Each roll contains two strips 18 inches wide (net—16⅞"), or width of 6 bricks. Length of roll, 36 feet, headlap 1⅛ inches. Approximately 105 lb per roll.

Colors: Red and Tapestry.

Roll Soldier Course: 10" x 43'3"; 8⅞" exposure; approximately 33 lb per roll.

Reinforced Corners: 56⅔ lineal ft. per carton; 20 pieces per carton; approximately 40 lb per carton. Each piece is 12 courses.



ROLL BRICK

Carey PREPARED ROLL ROOFING

LASTILE ROOFING • Mineral Surfaced

Colored granules are embedded into the top coating of asphalt, forming a hard, weather-resisting surface. A smooth selvage is provided along one edge to insure weather-tight laps.

Extra Heavy Weight*: 90 lb, 2-in. selvage edge. Colors: Dixie Green, Slate Green, Tile Red, Blue Black.

No. 55 SEMI-LASTILE • Mineral Surfaced

Colored granule surface gives it attractive appearance. Has uncoated smooth selvage edge designed for hot application.

Heavy — approximate weight 55 lb per square. Colors: Dixie Green, Tile Red, Blue Black. Rolls 36 in. x 36 ft. with 19 in. head lap, 17 in. exposure. No completing materials. Underwriters' Laboratories, Inc. Type 30 B.U. Label.

MICA-KOTE ROOFING • Mica Surfaced, Both Sides

An extra quality roofing of heavy felt base saturated and coated with carefully selected asphalt and finished with Mica Flakes.

*Heavy—Approx. weight 55 lb per square.

*Extra Heavy—Approx. weight 65 lb per square.

SURETY ROOFING • Mica Surfaced, One Side — Talc Surfaced, Other Side

Surety Roofing is an economical, smooth surface roofing recommended for any type of building where a low cost, durable roof is desired.

Medium.....Approx. weight 45 lb per square

Unless otherwise specified all rolls contain 108 square feet (36 ins. wide by 36 ft. long) enough to cover 100 square feet of roof surface. Sufficient quantity of lap cement and nails are furnished.

ASBESTOS ROOFING • Slate Surfaced

A strong reinforced Asbestos Felt, thoroughly saturated and coated on top side with tempered asphalt in which slate is embedded. 2-in. selvage edge.

Colors: Slate Green only carried in stock. Other standard colors made on special orders of 200 rolls or more. Complete with galvanized nails and lap cement. †Weight: 85 lb.

ASBESTOS ROOFING • Double Sanded

A high grade saturated and coated reinforced Asbestos Felt finished with a good, clean sand. Rolls 36 in. wide, 36 ft. 6 in. long, containing 110 sq. ft., 2½-in. selvage edge. Complete with Pyramid Kaps and Nails.

§Approximate weight: 68 lb.

*Underwriters' Laboratories, Inc. Class C Label.
†Underwriters' Laboratories, Inc. Class B Label.
§Underwriters' Laboratories, Inc. Special B. U. Label.

ASBESTOS ROOFING • Grapevine Finish

A strong, compact, reinforced Asbestos Felt, impregnated and coated on both sides. Talc surfaced.

*53 lb per roll.

Rolls 36 in. wide, 108 sq. ft.

Complete with galvanized nails and lap cement.
Rolls 36 in. wide containing 108 sq. ft.
†3 Ply, 52 lb per roll.
†3 Ply, 6 sheets 3 x 6 ft. per square.
30 sheets (540 sq. ft.) per case, 65 lb per square.

FIBEROCK ROOFING • Black Top

Reinforced Asbestos Felts, thoroughly impregnated with an exceptionally high melting point asphalt, having the felts cemented together with asphalt, making this material both fire retarding and waterproofing.

CAREY WHITE TOP ROOFING

Reinforced Asbestos Saturated Felt plied together with a top sheet of white asbestos which is adapted for use in built-up roof construction or as a ready roofing.

Rolls 36 in. wide, containing 108 sq. ft. with 2-in. selvage edge.

†3 Ply, approx. 55 lb per roll.

Furnished with Pyramid Kaps and Nails. We do not recommend that White Top Roofing be applied with nails and lap cement.

Carey BUILDING PAPERS, FELT AND CAP SHEETS

ROOFING ASPHALT AND FELT

ASPHALT SATURATED FELT • Underwriters' Laboratories, Inc. Label

No. 15 Feltex (432 sq. ft. per roll). Approximate weight 60 lb.

No. 15 Feltex-Perforated (432 sq. ft. per roll). Approximate weight 60 lb.

No. 30 Feltex (216 sq. ft. per roll). Approximate weight 60 lb.

ASPHALT SATURATED ASBESTOS FELT • Carries Underwriters' Laboratories, Inc. Special BU Label

Rolls 36 in. wide.

15-lb. Fiberock, perforated (324 sq. ft. per roll). Weight 45 lb per roll.

15-lb Fiberock (324 sq. ft. per roll). Weight 45 lb per roll.

20-lb. Fiberock (coated one side) (324 sq. ft. per roll). Weight 60 lb per roll.

45-lb. Fiberock Base Sheet (coated and sanded two sides) (108 sq. ft. per roll). Weight 45 lb.

TAR SATURATED FELT

No. 15 Carey-Seal Tarred Felt (432 sq. ft. per roll). Weight 60 lb per roll 36 in. wide.

15-lb. Fiberock (tar saturated) (432 sq. ft. per roll). Weight 60 lb per roll.

MINERAL SURFACED CAP SHEETS

LASTILE SPLIT SHEET

Rolls 36 in. wide, 36 ft. long. Two rolls required to cover 100 sq. ft. roof area, giving 2-ply construction.

Colors: Tile Red, Dixie Green, Blue Black. Weight approximately 122 lb per square.

Underwriters' Laboratories, Inc. Class C Label.

SMOOTH SURFACE CAP SHEETS

COLCAP

One-square rolls (108 sq. ft. per roll.) Approximate weight 43 lb per roll.

FLASHING MATERIALS

FABRICATED FLASHING MEMBRANE

A strong reinforced flashing material for all types of flashing work. (108 sq. ft. per roll). Approximate weight 32 lb per roll.

S. P. FABRIC

36 in. wide (450 sq. ft. per roll). Approximate weight per sq. yd. 10-12 oz.

CAREY ROOFING AND WATERPROOFING TAR PITCH

Flat Deck (wood barrels each 400 to 500 lb)
Steep Deck (wood barrels each 400 to 500 lb)

For our complete Catalog on Built-Up Roofing Specifications, see Sweet's File Index.

ASPHALTS

MANCO ASPHALTS

Standard Manco Asphalt (100-lb. cartons). Special Steep (100-lb. cartons.)

NABOSAR ASPHALT

Standard (100-lb. cartons). Special Steep (200-lb. cartons).

Slag (100-lb. cartons).

CAREY SPECIFICATION ASPHALTS • Refinery

Steep, Flat and Slag—100-lb. bags or cartons, 400 to 500-lb. wood barrels or fibre cartons.

WATERPROOFING ASPHALTS

No. 113 Waterproofing Asphalt, below ground (100-lb cartons).

No. 114 Waterproofing Asphalt, above ground (100-lb cartons).

CAREY BUILDING PAPERS AND FELTS

Carey waterproofed building papers keep out dampness, dust, grit, and wind; thus insuring a comfortable home.

RED ROSIN SIZED SHEATHING

Furnished in 500 sq. ft. rolls (36 in. wide).

Weights: Approximately 20, 25, 30 and 40 lb per roll.

SHEATHING FELT • Saturated Only

Polar Brand—a light weight but tough sheet of saturated felt. Furnished in 500 sq. ft. rolls (36 in. wide).

Weight: Approximately 35 lb per roll.

DISTRICT OFFICES

Atlanta 3, Ga.	The Philip Carey Mfg. Company	427 Candler Building
Boston 29, Mass.	The Philip Carey Mfg. Company	267 Medford St., Charlestown Dist.
Chicago 6, Ill.	The Philip Carey Mfg. Company	205 Wacker Drive
Cincinnati 2, Ohio	The Philip Carey Mfg. Company	217-219 E. Eighth Street
Cleveland 3, Ohio	The Philip Carey Mfg. Company	5906-5916 Euclid Avenue
Dallas 1, Texas	The Philip Carey Mfg. Company	711 Construction Building
Detroit 2, Mich.	The Philip Carey Mfg. Company	6197 Hamilton Avenue
Los Angeles 14, Calif.	The Philip Carey Mfg. Company	719 Pacific Finance Bldg.
New York 17, N. Y.	The Philip Carey Mfg. Company	Lincoln Building, 60 E. 42nd Street
Pittsburgh 19, Pa.	The Philip Carey Mfg. Company	Frick Bldg.
Philadelphia 32, Pa.	The Philip Carey Mfg. Company	24th and Sedgley Avenue
St. Louis 10, Mo.	The Philip Carey Mfg. Company	4165 Duncan Avenue
Seattle 4, Wash.	The Philip Carey Mfg. Company	Dexter Horton Building

THE PHILIP CAREY MANUFACTURING CO.

GENERAL OFFICES

CINCINNATI 15, OHIO, U. S. A.

Carey

QUALITY PRODUCTS SINCE 1873

8b
3

Flintkote

ROOFINGS AND SIDINGS

ASPHALT ROOFINGS AND SIDINGS • ASBESTOS-CEMENT ROOFINGS AND SIDINGS

THE EVOLUTION OF A QUALITY ASPHALT SHINGLE

experienced manufacturing personnel

quality asphalt

quality felt (made in Flintkote's own mills)

selected granules

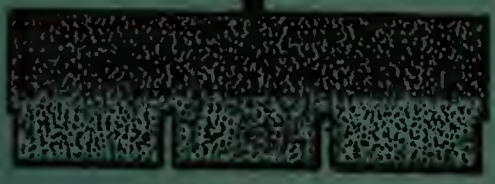
continuous research and laboratory control

carefully controlled processing

controlled color application

FLINTKOTE KNOW-HOW

Nearly a half-century of manufacturing experience is built into every Flintkote asphalt shingle. From its first products, when the Company was organized in 1901, continuous research into raw materials and manufacturing processes has resulted in a wealth of "Know-how" which enables production of quality asphalt roofing.



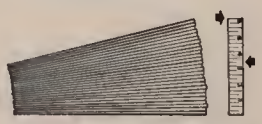
12'' TAPERED STRIPS

The Aristocrat of Asphalt Shingles

Flintkote "Topered Strip" Shingles ore exclusive and distinctive — o type thot is preeminent in asphalt roofing quality, oppeoronce ond ruggedness.They weigh 275 lbs. per squore, contain much more life-preserving stobilized osphalt and ore 25% to 33% thicker at the butts (where it counts most) thon ordinary stondord weight shingles. And, whot is even more importont, the extro weight and thickness is provided by the odditional heovy topered ospholt cooting on both sides of the shingle—62% of it being scientificolly placed on the 40% of the shingle exposed to the weother. The tapered coating on the under side gives correct balonce ond makes "Topered Strips" lie more snugly on the roof, giving greoter wind resistonce. The wedge-shoped mossive butts not only ossure additionol roof protection but creote the heovy shodow lines so much preferred by architects ond home owners.

YOU CAN *SEE* THE DIFFERENCE

Side view of pile of standard shingles.



Side view of Tapered Strips. Note extra thickness at the butts.

GIANT OVERLAY STRIP SHINGLES

Flintkote Giont Overlay Strip Shingle ideolly meets the growing need for o heovier top-quolity ospholt strip shingle for use in roofing new homes and re-roofing old ones. Weighing 250 lbs. per square this Giont Overloy Shingle gives additionol proven weothering performonce, due to its overloy method of monufocture, ond improved oppeoronce since it has o uniform fire-resistant mineral-surfaced cooting over the entire surfoce of the shingle.

12'' THIKBUT STRIPS

(Either Plain or Textured Surface)

Flintkote Thikbut Strips hove on added protective cooting of stabilized ospholt ond on odditionol surfocing of minerol granules opplied to the lower portion of the strip. This provides o shingle that is olmost double thick on the part exposed to the weather, furnishing extro protection ond creoting deeper shadow lines. Cedortex Thikbut Strip Shingles hove on ottroctive textured surfoce, resulting in an effect thot hos been found popular with many home owners.

TAPERED STRIP SHINGLES

Cross section through o Tapered Strip Shingle showing extra heavy tapered coatings of asphalt on BOTH sides of the butts.

GIANT OVERLAY STRIP SHINGLES

Cross section of o Giant Overlay Strip Shingle showing the extro layer of asphalt coating and mineral granules over the entire surface.

CEDARTEX THIKBUT STRIP SHINGLES

Cross section of o Thikbut Strip Shingle, showing the extra layer of asphalt coating and mineral granules on the butt.

SUPER GIANT INDIVIDUAL SHINGLES

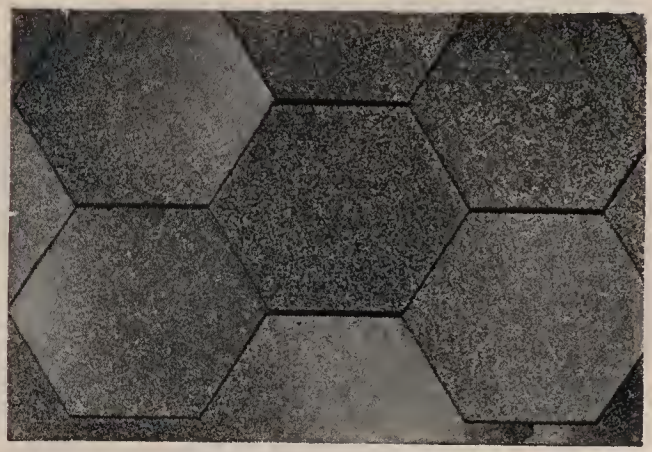
SUPER GIANT INDIVIDUAL SHINGLES

"Super Gionts" ore the ideol heovy Individuol shingle for new construction. When opplied in the Americon Method, they weigh 325 lbs. per square—giving extro strength ond rugged chorocter to the roof. This method of opplicotion gives triple thickness of shingle over the entire roof, except between the spocings of the shingles.

DUTCH LAP GIANT INDIVIDUAL SHINGLES

DUTCH LAP GIANT INDIVIDUAL

These shingles are the same os the Super Giont Individuols —the only difference being in the method of opplicotion. The Dutch Lop method is more economical, since it requires only half os much moteriol. Metol fosteners ore used to lock each tab securely to the roof.



11⅓" HEXAGON STRIP SHINGLES

11⅓" HEXAGON STRIP SHINGLES

For duroble roofs ot moderote cost, the ever populor Flintkote Hexogon Strips ore ovailoble in o wide voriety of colors ond blends. Mode of stondard weight moteriol, they provide good protection. Their symmetrical design, occentuoted by the heovy shodows cost by the double thickness ot the butt when opplied, is especiolly ottractive to home owners.

ASPHALT ROLL ROOFINGS

Flintkote Aspholt Roll Roofings are monufoctured either with smooth or mineral surface. Both types ore mode on heovy felts thot hove been soturoted with o speciol ospholt, cooted on both sides and surfoced either with colorful minerol gronules or with tolc or mica. They are made to conform with Flintkote's well known stondords of quolity—a weight ond style for every roll roofing need.

Rex Flintkote* is o smooth surfoce roll roofing of the highest quolity ond is surfoced with "Rayflex" finish on one side ond corrugated mico finish on the other. It can be opplied either side up. It weighs approximotely 65 lbs. per roll of 108 sq. ft., is approximotely 36" wide ond corries the Closs C Underwriters' Loborotory Lobel.

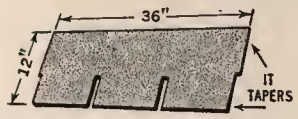
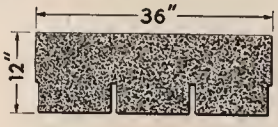
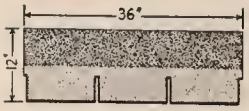
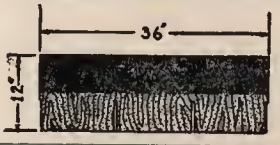
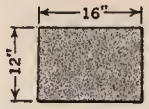
Flintkote Stalwart* Roll Roofing has a gun-metol corrugoted finish on both sides. It weighs opproximotely 55 lbs. per roll of 108 sq. ft., is opproximotely 36 inches wide ond corries the Closs C Underwriters' Loborotory Lobel.

Flintkote Reliance* is one of the most duroble, moderately priced roll roofings on the morket todoy. It is mico surfoced on both sides, weighs opproximotely 45 lbs. per roll of 108 sq. ft. ond is approximotely 36" wide. *T.M. Reg. U.S. Pat. Off.

Flintkote 90 lb. Mineral Surfaced Roll Roofing is o heavy, durable moteriol surfoced with longlasting, colorful mineral gronules. It is mode in o voriety of pleosing colors, weighs approximotely 90 lbs. per roll of 108 sq. ft., is opproximotely 36" wide, corries Closs C Underwriters' Laborotory Lobel.

FLINTKOTE ASPHALT SHINGLES

PRODUCT DATA

PRODUCT	APPROX. WEIGHT PER SQ. (lbs.)	HEADLAP (inches)	EXPOSURE (inches)	SHINGLES PER SQ.	BUNDLES PER SQ.	UNDERWRITERS' LABEL
TAPERED STRIP SHINGLES 	275	2	5	80	3	C
GIANT OVERLAY STRIP SHINGLES 	250	2	5	80	3	C
12" THIKBUT SHINGLES 	210	2	5	80	3**	C
12" CEDARTEX THIKBUT SHINGLES 	210	2	5	80	3**	C
SUPER GIANT* INDIVIDUAL SHINGLES	325	6	5	226	4	C
DUTCH LAP GIANT INDIVIDUAL 	162	2	10 x 13	113	2	C
11⅓" HEXAGON SHINGLES	167	2	4⅔	86	2	C

FLINTKOTE SHINGLE COLORS—All of the above asphalt shingles are manufactured in a wide variety of distinctive colors and blends . . . colors developed for individual beauty and blended to make harmonious combinations. Years of painstaking pioneering research and controlled manufacturing procedure by Flintkote have produced colored granules of exceptional beauty and sales appeal.

Consult our nearest district sales office for the list or samples of available Flintkote Shingle colors.

*Trademark Reg. U. S. Pat. Off.

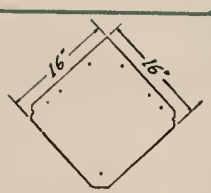
**Packed 2 Bundles per Sq. in the South.

ASBESTOS-CEMENT SHINGLES AND SIDINGS

Flintkote Asbestos-Cement Roofing and Siding Materials are manufactured from selected asbestos fibres and Portland cement. In their manufacture, they are compressed under tremendous hydraulic pressure into a solid uniform mass, making each shingle or siding a monolithic slab of maximum density and strength. Made of two non-combustible materials, asbestos and cement, resulting in fire-proof products.

Just as any cement product becomes harder and stronger with weather and age, these asbestos-cement shingles and sidings improve as they grow older. They require no protective coating or other treatment to preserve their life.

PRODUCT DATA—ASBESTOS-CEMENT SHINGLES

PRODUCT		APPROX. WEIGHT PER SQ. (lbs.)	HEADLAP (inches)	SIDELAP (inches)	EXPOSURE (inches)	SHINGLES PER SQ.
No. 10—HEXAGONAL+♦ (SMOOTH FINISH)		265	—	3	13 x 13	86
No. 20—DUTCH LAP+♦ (WOODGRAIN FINISH)		280	3	4	12 x 13	92

PRODUCT DATA—ASBESTOS-CEMENT SIDINGS

No. 70-T—12"TAPERTEX (STRAIGHT EDGE)		185	1½	—	10½ x 24	57
No. 60-W—12" WAVELINE (WOODGRAIN FINISH)		185	1½	—	10½ x 24	57
No. 70-W—12" STRAIGHT EDGE♦ (WOODGRAIN FINISH)		185	1½	—	10½ x 24	57

NOTE: + Not available in the East.
♦ Not available in the Middle West.

Vertical joint strips and face nails are supplied with all sidings.

Flintkote Asbestos-Cement Shingles carry the Class "B" Fire Underwriters' Laboratory Label.

ASBESTOS-CEMENT SHINGLES

Flintkote Asbestos-Cement Shingles ore made in two popular designs. The **HEXAGONAL SHINGLE** is one of the most widely accepted osbestos shingle styles on the morket. It hos a smoath surfoce, provides a unique and ottroctive design and affects o substantiol saving af lobar and materiols withaut socrificing odequate pratectian. In addition to noiling, a smoll metol storm onchor is used at the lower end of the shingle, halding it securely in ploce.

The **DUTCH LAP** Shingle reproduces the groin af cypress ond hos the roaf lines of shingles applied by the "American Methad." The design of the shingle is such that it pravides for excellent heodlap ond sidelop pratectian. A smoll metol fostener secures the lower corner.

ASBESTOS-CEMENT SIDINGS

Flintkote Asbestos-Cement Sidings ore made in o voriety af styles ond ore ideally odopted to new constructian home needs, in oddition ta their wide occeptonce for remodeling of existing canstructian.

TAPERTEX Asbestas-Cement Siding, a comporotively recent Flintkate develapment, hos o stroight line, edge-groin texture thot is new, distinctive ond attroctive. The texture tapers fram o flot surface ot the tap to deep indentotians ot the lower edge, giving o deep, grooved surface texture ot the butt.

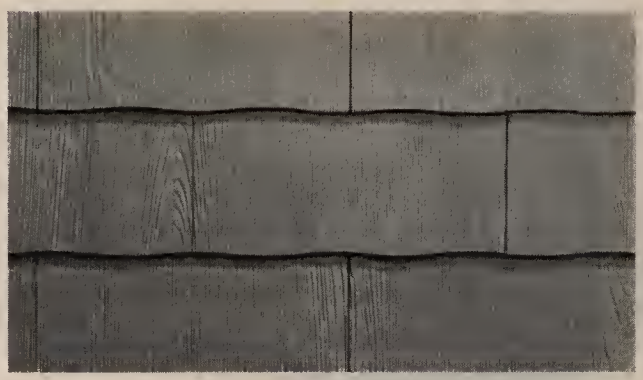
The **WAVELINE** Edged Siding reproduces the beouty of woad shingles opplied with o wavy edge, combining it with the noturol quolities of osbestos-cement products—firepraafness ond durobility. Its shodows ond butt lines further cantribute to the attroctive effect.

Flintkate Asbestas-Cement Sidings, ovoilable in distinctive styles, ore ideally odapted ta new construction residential needs ond ore widely used in remodelling present structures since new sidewolls nat anly caver unsightly ald wolls but also odd ta the volue of the property ond effect sovings in upkeep expense. Interesting effects, architecturally appropriote, ore eosily ochieved by combining different styles af Flintkote Asbestos Sidings an the some woll ar by using Asbestos Sidings for port of the sidewoll in combinotion with other moterials.

HEXAGONAL ASBESTOS-CEMENT SHINGLES

DUTCH LAP ASBESTOS-CEMENT SHINGLES

TAPERTEX ASBESTOS-CEMENT SIDING



WAVELINE ASBESTOS-CEMENT SIDING

Flintkote Asphalt Shingles are manufactured in a wide variety af distinctive calars and blends... calars develaped for individual beauty and blended ta make harmaniaus cambinatians. The calors presented on this page are representative rather than all-inclusive. Space limitatians prevent a camplete presentatian af all af the many calars and blends in the varied Flintkate line.

FLINTKOTE BUILDING MATERIALS

THE FLINTKOTE COMPANY

BUILDING MATERIALS DIVISION

30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

ATLANTA (6), GA., 1215 Sylvan Raad, S. W.
BOSTON (16), MASS., 925 Park Square Building
CHICAGO HEIGHTS, ILL., 17th St. and Wentwarth Ave.
DETROIT (27), MICH., 14201 Schaefer Highway
EAST RUTHERFORD, N. J., Central Ave. and Oak St.
NEW ORLEANS (4), LA., Poland and Galvez Sts.
WACO, TEXAS, Medical Arts Bldg.
WASHINGTON (S), D. C., Woadward Building

PIONEER DIVISION—THE FLINTKOTE COMPANY, LOS ANGELES (54), CALIF., SSth and Alameda Streets

JOHNS-MANVILLE PRODUCTS

Johns-Manville

22 East 40th Street, New York 16, N. Y.

DISTRICT OFFICES

Atlanta 3, *101 Marietta St.*
Bastan 10, *49 Federal St.*
Chicago 54, *222 North Bank Drive*
Cincinnati 2, *Central Pkway. at Walnut St.*
Cleveland 15, *45 Prospect Ave., N.W.*
Denver 2, *1755 Glenarm Place*
Detroit 2, *Grand Blvd. at 2nd St.*
Houston 1, *2212 Polk Ave.*
Las Angeles 13, *816 West 5th St.*
Milwaukee 2, *757 North Broadway*
New Orleans 12, *610 Paydras St.*
New York, *Box 270 Murray Hill Station*
Philadelphia 3, *1617 Penna. Blvd.*
Pittsburgh 22, *717 Liberty Ave.*
St. Louis 1, *1000 Market St.*
San Francisco 5, *116 New Montgomery St.*
Seattle 9, *777 Thomas St.*

CANADIAN JOHNS-MANVILLE COMPANY, LTD.
MONTREAL TORONTO VANCOUVER WINNIPEG

JOHNS-MANVILLE INTERNATIONAL CORPORATION
NEW YORK LONDON BUENOS AIRES

J-M American Colonial Shingles in Red Blend. Above, Green Blend

JOHNS-MANVILLE *AMERICAN COLONIAL* ASBESTOS ROOFING SHINGLES

For many years, all the skill and ingenuity of the J-M Research Laboratory have been focussed on the objective of a roof that was more durable and more attractive, yet priced so low that it would be within the budget of *any* home-owner. This objective has been reached with Johns-Manville American Colonial Asbestos Shingles. Thousands of squares now in service all over the country on all types of buildings testify to their ready acceptance by architects and owners.

These shingles, made of two minerals — asbestos and cement — have the mellow beauty of

graining and texture of fine old weathered wood, yet freedom from fire risk — from rot — from expensive maintenance. Theirs is the clean-cut shadow lines, the simplicity and dignity of form invariably associated with their name "Colonial."

To beauty of design has been added beauty of color. American Colonial Shingles are offered in a soft green blend which harmonizes with natural surroundings, a warm red blend which gives that distinctive contrasting touch and a blended black that is new and modern. There is also a white that is most suitable for southern homes and a natural gray.

The answer to the problem of lower application cost is found in the size and shape of the American Colonial Shingle. It is an asbestos strip shingle which, on the roof, covers as much area as the five ordinary shingles it appears to be. Yet it is applied in one operation, self-aligned.

American Colonial Asbestos Roofing Shingles are furnished 14″ x 30″, 80 shingles per square, and weigh approximately 290 lb. per square. Complete application directions are available from any Johns-Manville office.

Black Blend, a great favarite amang the American Calanial Shingles.

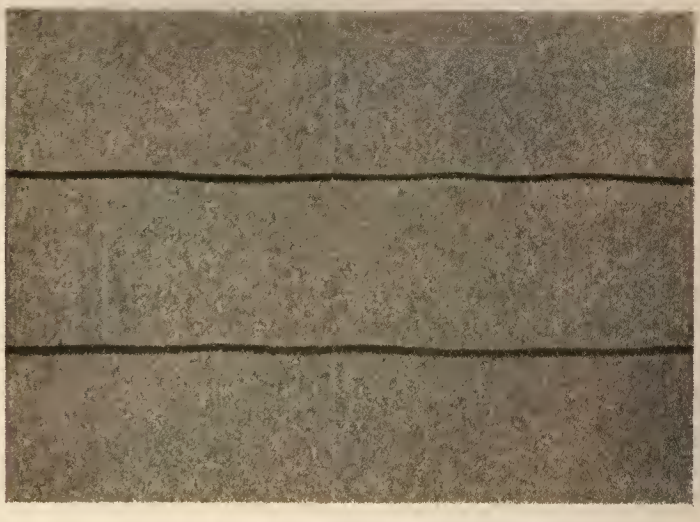
J-M American Colonial Asbestos Shingles are laid with a 6″ exposure. Eaves starters and hip and ridge shingles are available in matching colors.

Only 4 nails are required in each American Colonial Shingle. In this view, the starter course has been applied, the felt has been laid and the first course started . . . right over the old roof.

The pre-fabricated "strip" can be applied in a fraction of the time it would take to lay the 5 individual shingles it resembles. The corner of each strip lines up with the center point of the previous shingle. Alignment is simple and accurate.

Where it is necessary to cut shingles to fit along valleys; at the ridge; around dormers, etc., a shingle cutter, as shown, available from your dealer, cuts these American Colonial Shingles in a clean, quick and efficient manner.

Close-up showing texture and graining of J-M American Colonial Shingles

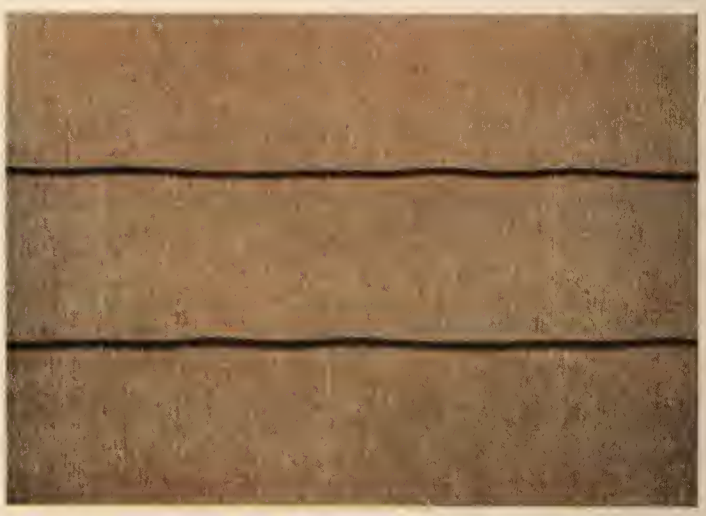


Permatane Green Blend Asbestas Siding Shingles
(Also available in Silver Gray)

JOHNS-MANVILLE ASBESTOS SIDING SHINGLES PROVIDE A BEAUTIFUL EXTERIOR

Johns-Manville Asbestos Siding Shingles have all the beauty of texture found in the graining of weathered wood shingles and have made this charm available in a lasting, fireproof material — as permanent as stone.

J-M Asbestos shingles will not rot, corrode, split or burn. They do not need periodic painting to preserve them. Yet, with all their advantages of beauty, fire protection and durability, these shingles cost no more applied than most other types of siding of comparable durability. When used for re-siding, they can be applied directly over the old wood siding. When combined with a roof of J-M American Colonial Shingles, they complete the protection of the exterior of the building from fire and weather.



Permatane Tan Blend Asbestas Siding Shingles

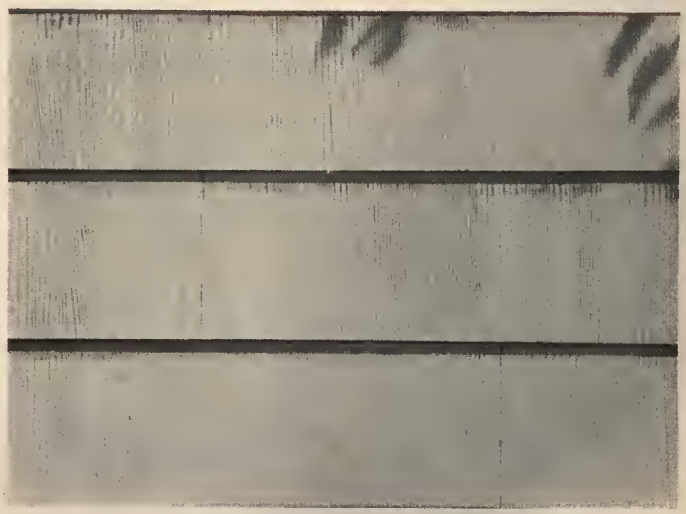
Permatone Colors

The Permatone Shingles have a textured surface that has all the charm and interest of fine weathered wood. And this pleasing texture, combined with soft pastel colors, provides a shingle for exterior walls that is completely distinctive in appearance. In addition these shingles are highly resistant to soiling in spite of long years of exposure to the weather. Especially recommended for industrial cities where smoke and soot are prevalent. Colors available are Green Blend, Tan Blend and Silver Gray.

Dover White

The Dover White Shingle is an attractive clear white with the cedargrain texture of weathered wood.

Both *Permatone* and *Dover White* Shingles are furnished with a wavy edge or a straight edge.



Daver White Asbestos Siding Shingles

JOHNS-MANVILLE ASPHALT ROOFING AND SIDING SHINGLES

Johns-Manville Asphalt Shingles are made of heavy felts saturated with the finest asphalt and surfaced with crushed mineral. They are made as strip shingles, both American and Hexagonal styles, and as individual shingles, Dutch Lap and Hexagonal styles. These shingles are made in a variety of colors, including solid colors and blends. We particularly recommend the new Giant Asphalt Strip Shingle because of the extra protection.

All J-M Asphalt Roofing Shingles listed in the J-M Building Material catalog carry the Underwriters' Class C label.

Complete data on colors, sizes, weights, exposure, etc., may be had on request at any Johns-Manville office.

J-M Asphalt Shingles give a colorful, long-lived roof at low cost

Slate Blend

Blue Blend

Green Blend

Red Blend

Printed in U.S.A.

KEASBEY & MATTISON COMPANY

AMBLER, PA.

DISTRICT OFFICES

Atlanta, Georgia
Chicago, Illinois
Cleveland, Ohio
Houston, Texas
San Francisco, California
New York, New York
Philadelphia, Pennsylvania

This home owes its ottroctive appearance to "Century" No. 30 Dutch Lap Roof Shingles and "Century" No. 58 Siding. The combination of the Light Green roof and White sidewalls is hard to match. Best of oll, this beouty is permanent—"Century" Shingles being highly resistant to weather and fire.

K&M *"Century"* Asbestos-Cement Building Products

Keasbey & Mattison Company is the oldest manufacturer of asbestos-cement building products in this country, having introduced the first asbestos-cement roofing shingles and corrugated sheathing in the United States in 1905. Being specialists in ASBESTOS, K&M has been free to concentrate its entire attention on products made from this *one* basic raw material.

All K&M "Century" asbestos shingles are made of a combination of asbestos fibre and portland cement, hence they are fire resistant, weatherproof, rot and termite proof. Manufactured in various types for both roofing and siding (as described on the following pages), there is a style for every type structure. Most K&M "Century" shingles are rough textured, which surfacing is commonly referred to as a "weathered effect". However, if your tastes run to a smooth surfaced shingle, K&M can also supply your requirements.

"Century" asbestos roofing shingles are intended for use on pitched roofs only. To secure a water tight roof, it is advisable not to apply American Method type units with a pitch of less than 4″ to the foot or Hexagonal or Dutch Lap shingles with a pitch of less than 5″ to the foot.

One important thing to remember about "Century" asbestos shingles is that, regardless of the style you select, the quality is always the same. The percentage of fibre and cement going into each type K&M shingle is carefully controlled and does not vary from one style to another. The cost of a particular shingle is determined by its size, color and thickness *only*. Thus, in contrast to many other shingles on the market today, you can specify "Century" roofing or siding with the knowledge that each style is *equally* durable, *equally* weatherproof and *equally* fire resistant.

K&M "Century" asbestos shingles are produced in a range of colors and shapes to make possible the most effective harmony between the home and the surrounding landscape.

The K&M line includes, in addition to roofing, several types of asbestos-cement siding units. These siding shingles are ideal for both new construction or for renovation and modernization of existing structures. They can be applied over existing siding and make an amazing transformation in the appearance of the home. For fireproof sheathing, both interior and exterior, K&M offers several types of flat and corrugated asbestos sheets. (For further detail, refer to back page.)

K&M Spanish Red Dutch Lap Roofing. In this method of opplicotion, each shingle is fostened in ploce with speciol (storm) onchors to provide an especially tight roof. This is a very desirable feature in oreos subjected to wind storms of high velocity.

K&M "Century" Asbestos-Cement Roofing

HEXAGONAL

The No. 4 Hexagonal Shingle (at right) provides beauty and lasting protection at moderate cost. It is recommended where economy is a factor. The No. 4 Shingle is available *only* with smooth surface in the following colors*: Gray Duoface, Spanish Red, Black and Surf Green. Size 16″ x 16″ x 5/32″ thick. 86 shingles per square weighing 258 lbs. Exposure 13″ x 13″.

DUTCH LAP

The No. 30 Shingle (center) provides all the economies of Dutch Lap application, yet resembles the more expensive American Method types in appearance. The large size of this shingle gives greater unit coverage and reduces cost of application. The K&M Dutch Lap Shingle is rigid and strong and provides a very secure roof. Available in*: Spanish Red, Graytone, Black and Surf Green. (See cut at top of page.) Size 16″ x 16″ x 5/32″ thick. 92 shingles per square. Weight 260 lbs. per square. 1/4″ lap application gives 3″ headlap, 4″ side lap.

AMERICAN METHOD

The No. 5 American Method Shingle (at bottom right) has been scientifically designed for quick and economic application. On the roof, it presents the random widths and thatched butt lines characteristic of the American Method. Furnished in four colors*: Spanish Red, Surf Green, Black and Graytone. Size 15 3/8″ x 24″ x 5/32″ thick. 90 shingles per square weighing 250 lbs. Exposure 6 11/16″, 2″ headlap.

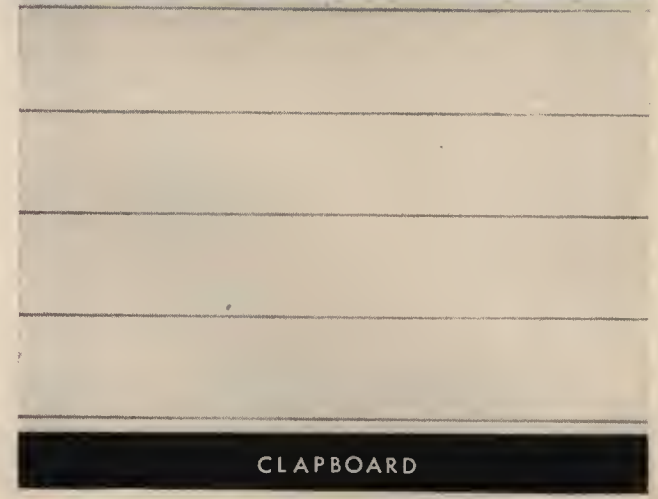
Styles of "Century" Roofing. The reversible feature of the No. 4 Gray Duoface is papular with architects. This shingle is colored both sides and may be applied with the plain Newport Gray or the mattled side (above) exposed.

**Because of shortages of raw materials (particularly pigments), it is possible that certain colors may not always be immediately available. Therefore, we suggest that you check with your nearest K&M District Office before drawing up final color specifications.*

K&M "Century" Asbestos-Cement Siding

K&M's attractive, deep grained siding shingles are available in two popular styles . . . wavy and straight edge, and in the two colors shown above. In addition, there is "Century" Asbestos Clapboard for those who prefer the sweeping beauty and simple architectural beauty of these longer, smooth-surfaced siding units.

NO.57 WAVY BUTT


CLAPBOARD

"Century" Asbestos Siding can be applied quickly and simply over wood shingles, clapboard or stucco. Sheathe all surfaces with asphalt saturated felt (at least 15 lbs. weight), flash all joints with asphalt felt strips, exposed face nails to be 1¾″ or 2″ for repair work and 1″ for new construction.

SPECIFICATIONS

No. 57 Siding—12″ x 24″ x 5/32″ (weathered surface and wavy butt line), 57 per square; 19 per bundle.

Approximate weight: 180 lbs. per square—exposure 10½″ x 24″.

Colors: Shell White and Graytone.

Clapboard—9½″ x 48″ x 3/16″—36 pieces per square; 12 per bundle.

Approximate weight: 200 lbs. per square—exposure 8½″ x 48″.

Color: White (smooth).

This attractive home is sided with fire resistant "Century" Shingles. Once applied, "Century" Siding may be forgotten, and painting expense eliminated entirely.

K&M *"Century"* FLAT & CORRUGATED ASBESTOS SHEATHING

APAC, used as exterior siding on this huge administration building, combines up-to-the-minute design with maximum durobility. Design and Construction by The Austin Company.

K&M *"Century"* APAC BOARD—The principal feature of this newest "Century" flat asbestos-cement sheet material is its adaptability. There is almost no limit to the number of ways APAC can be used in the construction and fabrication fields. Durable, easy to apply, fire and weather resistant, it is suited equally well for exterior siding or for all types of interior panelling and partitions.

"Century" APAC sheets are light gray in color, and their pleasing appearance makes painting unnecessary. This material is furnished in large, easily worked 4′ x 8′ sheets and in thicknesses of 3/16″, 1/4″ and 3/8″. APAC is easy to cut by scoring on one side and snapping off along a straight edge. In addition to APAC, K&M also manufacturers two other well known asbestos sheet materials—"Century" Linabestos in Buff color only, and "Century" Sheetflextos, for interior panelling, where flexibility is of prime importance.

K&M *"Century"* ASBESTOS CORRUGATED

Here is a time tested, heavy duty industrial sheathing that is now seeing extensive usage for decorative purposes, as well. The illustrations at left demonstrate its suitability for exterior roofing and siding, and for artistically designed interiors of restaurants, cocktail lounges, shops and the like.

Furnished in 42″ wide sheets and in lengths from 3′ to 12′, "Century" Asbestos Corrugated can be cut with portable electric saw and drilled for nails, drive screws and bolts. It is supplied standard in a light gray color. It will not corrode, rot or disintegrate, and will withstand practically all conditions common to industry.

For example, K&M "Century" Asbestos Corrugated is highly resistant to internal and external fires, and will not warp, buckle or crack. It will also withstand most acids and gases—such as fumes and vapors around gas plants, coke ovens, chemical plants and refineries.

The new TOP-SIDE Fasteners, available only with K&M "Century" Corrugated, cut erection costs on roof installations over steel purlin construction. The fasteners are applied wholly from the roof surface and eliminate the need for costly scaffolding.

TECHNICAL INFORMATION

ASPHALT ROOFING

ASBESTOS CEMENT SIDING

United States Gypsum

For Building • For Industry

Gypsum • Lime • Steel • Insulation • Roofing • Paint

GENERAL OFFICES—300 WEST ADAMS STREET, CHICAGO 6, ILLINOIS

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SEATTLE, WASH.
SYRACUSE, N. Y.
WASHINGTON, D. C.

UNITED STATES GYPSUM

ASPHALT SHINGLES

USG* THICK-BUTT SHINGLES

DESCRIPTION

A three-in-one strip shingle with extra thickness in the portion exposed to the weather. The granules are embedded in a single moulded coating of asphalt mastic which bonds securely to the asphalt-saturated felt base.

Surfaces: Plain or textured.

Size: 12" x 36" with two ⅜" wide cut-outs.

Solid Colors: Black, Red, Green.

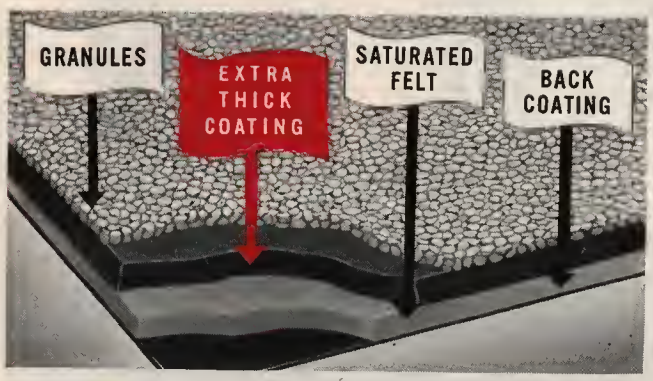
Blend: Briar Green, MAYFAIR GREEN*, Pompeian Red and Venetian Red.

Weight: Approximately 210 pounds per square.

FUNCTION AND UTILITY

FIRE RESISTANT—Carries class "C" label of Underwriters. Many insurance companies recognize that USG Thick-Butt Shingles lessen the threat of fire, and in some states, a lower insurance rate is offered on this type of roof.

PROTECTION AGAINST THE ELEMENTS—USG Thick-Butt Shingles are so designed that the bulk of the protection is placed where exposed to the wear of the weather. The exposed portion of shingle is 33 per cent thicker and 50 per cent heavier than the unexposed portion. This roof better fortifies the building against snow, wind, rain and sun.



LONGER WEAR—The USG method of manufacture gives maximum protection to the felt, assuring long service. The life expectancy for USG Thick-Butt Shingles is considerably greater than for standard thickness shingles.

BEAUTY—The USG method of manufacture permits deep texturing resulting in a massive, rugged type of beauty with deep shadowing.

COST—No premium is charged for USG Thick-Butt Shingles. They are comparable in price to standard shingles of the same weight.

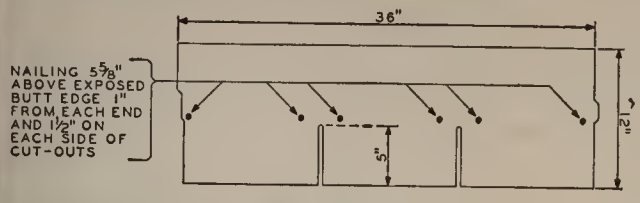
LIMITATIONS OF USE

For use on roofs having a rise of at least 4" to the horizontal foot.

"USG", "GLATEX", and "MAYFAIR GREEN" are registered trademarks owned by United States Gypsum, used by it to distinguish its products. "USG" identifies the particular asphalt roofing and gypsum sheathing; "GLATEX" identifies the particular asbestos cement siding; and "MAYFAIR GREEN" identifies a particular blend of asphalt shingles manufactured only by United States Gypsum Company.

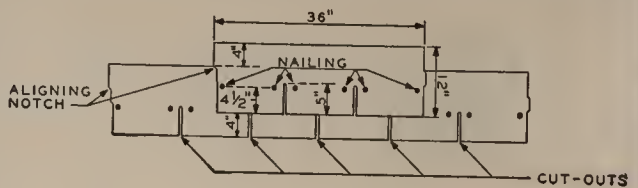
PRODUCT DATA AND APPLICATION METHODS

5" EXPOSURE—CONVENTIONAL METHOD:



Head Lap	Exposure	Strips per Square	Bundles per Square	Approx. Wt. per Square
2"	5"	80	3	210

4" EXPOSURE—EXTRA PROTECTION METHOD:



Head Lap	Exposure	Strips per Square	Bundles per Square	Approx. Wt. per Square
4"	4"	100	3.75	263

**Trademark Reg. U. S. Pat Off.*

ASPHALT SHINGLES

USG RANDOM-TAB SHINGLES

USG Random-Tab Shingles fulfill the desire for made-to-order individuality

DESCRIPTION

A strip shingle with tabs of random widths and lengths that provide a pleasing irregularity of lines with deep shadows combined with attractive variation of blended color. Extra heavy felt saturated with a full-bodied asphalt form the base. The granules are embedded in a heavy coating of asphalt bonded to the base.

Surface: Textured only.

Size: 9″ to 11″ wide by 36″ long.

Blends: Briar Green, Pompeian Red, Heather and Brown Blend.

Weight: Approximately 255 pounds per square.

FUNCTION AND UTILITY

FIRE RESISTANT—Carries class "C" label of Underwriters. The fire protection value of USG Random-Tab Shingles is recognized by many insurance companies, and in some states, a lower insurance rate is offered when these shingles are used.

INDIVIDUALITY—Pleasing irregularity, deep shadows, splendid variation of color blends. These are the hand effects found otherwise in the more expensive roofs but available here in the greater economy of strip shingles.

WIND RESISTANT—The sharp angles formed by the irregularly cut tabs are not easily caught by the wind. Provision is made for securely nailing and all nails are protected by double coverage.

COST—Comparable to the best of strip shingles but providing the qualities of hand laid individual shingles.

Nails are completely concealed.

3″ coverage between joint and closest cut-out.

Automatic alignment helps assure pleasing irregularity.

PRODUCT DATA

Head Lap	Exposure	Size of Shingle	Bundles per Square	Weight per Square
2″ to 3″	3″ to 5″	9″ to 11″ x 36″	3	255 lbs.

GLATEX* ASBESTOS CEMENT SIDING

DESCRIPTION

A siding material made of a combination of asbestos fibers and portland cement plus a baked-on mineral type coating, not unlike a vitrified enamel in appearance, instead of the ordinarily porous asbestos-cement surface. GLATEX Asbestos-Cement Siding is die cut and made with a wood-grain texture in either a straight-line or a wavy-line butt, 5/32" thick in units 12" x 27".

FUNCTION AND UTILITY

ADAPTABLE to both new construction and remodel construction.

CONVENTIONAL CONSTRUCTION—No special framing is required. It may be applied over wood, gypsum or insulation sheathing. See attachment methods on next page.

RESISTS MOISTURE AND DIRT—The special-coated surface, not unlike a vitrified enamel, attracts less moisture and dirt than ordinary asbestos-cement surfaces. Stains do not readily adhere to the surface. Thus GLATEX siding retains its original freshness longer.

No. 600—Wavy Butt GLATEX

No. 950—Clapboard GLATEX

FIREPROOF—The combination of asbestos fiber and portland cement provides a surface that will not burn and which helps protect framing against fire hazard.

ECONOMICAL—GLATEX siding never requires paint. It is easily and economically maintained and provides "life-long" service.

CLEANABLE—Surface grime can be cleaned from surface of GLATEX siding by simply washing with soap and water.

ATTRACTIVE—Indented wood-grain effect enhances beauty of GLATEX siding.

LARGE UNITS—The 27" long units mean fewer joints, faster application and tighter walls.

THE SMUDGE TEST

Apply dirty oil or grease

Wipes off without penetrating surface

Surface is restored—no stains remain

PRODUCT DATA

No. 950 CLAPBOARD SIDING		No. 600 WAVY BUTT SIDING SHINGLE	
Dimensions	12" x 27" x 5/32"	Dimensions	12" x 27" x 5/32"
Approximate Weight per Square	178 Pounds	Approximate Weight per Square	175 Pounds
Weather Exposure	10½"	Weather Exposure	10½"
Overlap	1½"	Overlap	1½" Maximum, 1⅛" Minimum
Finish	Wood-grain Texture	Finish	Wood-grain Texture
Color	Satin White	Color	Satin White
Shingles per square	51	Shingles per square	51
Shingles per bundle	17	Shingles per bundle	17

Trademark Reg. U. S. Pat. Off.

Henry P. Staats, N.Y.C., Architect

Van Anda

Colonial Lumber Specialties Inc.

EARLY AMERICAN BRAND HAND SPLIT SHINGLES

PHONE WORTH 4-6650

30 CHURCH STREET, NEW YORK, N. Y.

POST AND RAIL FENCE

Early American Brand Hand Split Shingles

(Reg. U.S. Pat. Off.)

Salid matched baard decking adds cansiderable insulation value. Building paper may be used directly an tap af decking (center phata) or woven between caurses (battom). Paper used (battam) is 18″ wide strip af raofer's felt. Many cantractars emplay this latter feature with success in canjunctian with the apen deck methad (tap). Rat ar decay will nat accur in any of the abave installatians.

Early American Brand hand split shingles are rough textured and hand hewn from western red cedar.

They are identical in appearance and quality to those used by the pioneer home-builders of America. They differ only in modern improvements which have been added to assure best building practices. All have a smooth, flat back and a natural tapering tip to assure a tight fitting roof or sidewall. These shingles are 25″ to 27″ long, random widths, manufactured with adequate length to permit a safe head-lap at even the maximum exposure.

They arc used widely for roofs or sidewalls wherein it is desired to achieve both unusual beauty and maximum durability at reasonable cost.

features

Manufactured edge-grain from select quartered logs, these shingles lay flat without cupping or curling and make a surface of extraordinary durability.

Unlike "mouldcd" or "processed" products, each shingle in the bundle has a separate character that identifies it. This avoids a monotonous or tiresome repetition of pattern.

The exposed surfaces of these shingles are hand-hewn and require no paint or stain to color or preserve them.

When used without paint or stain, they weather in a short time but are adaptable to the use of white or colored sidewall treatment.

A postal card inquiry will bring prompt response from our technical staff where recommendations are needed for color or stain requirements.

As a roof or sidewall, these shingles are among the most highly prized lumber products because of their excellent insulating value.

special uses

This product has received wide acceptance among architects and engineers in restoration work of historical nature. Because of the high fidelity to character of these shingles, a true authenticity may be obtained through their use.

We will be pleased to send you a list of our installations in your area upon request.

general provisions

All starter courses should be doubled, using for the undercourse a sawn shingle.

These shingles may be laid upon the conventional 1″ x 2″ or 1″ x 3″ shingle strip, or may be laid upon tongued and grooved or shiplap solid sheathing covered with a good grade of waterproof building paper.

The latter type of roof, due to its superior insulation value and complete absence of infiltration, is preferred by many architects and contractors.

In the interest of maximum durability, the use of 16 oz. copper, lead coated, is endorsed wherever flashings or valleys are indicated.

Most applicators make a material allowance of approximately 5% for waste due to trimming and fitting around openings.

Early American Brand Hand Split Shingles

(Reg. U.S. Pat. Off.)

specifications

All (roofs), (sidewalls), shall be covered with EARLY AMERICAN BRAND (specify type), as furnished by Colonial Lumber Specialties, Inc., 30 Church Street, New York, N. Y.

Expose shingles (specify exposure in inches) to the weather.

Shingles shall be laid in parallel courses, doubled at eaves. (See general provisions.)

Break all joints of Hand Split Shingles with at least a 2″ sidelap.

Lay Hand Split Shingles not less than ⅛″ apart.

Use hot dipped zinc coated or copper shingle nails of adequate lengths with due regard to the thickness of shingle involved.

Each 4″ in width or fraction thereof shall contain a nail, but no shingle shall employ less than two nails.

When possible, all cutting and trimming shall be done with a hatchet in preference to sawing.

Due to the off-square butt lines, shingles shall be laid in straight parallel courses as much as possible excepting when a staggered or rustic appearance is desired. It is advisable to lay shingles just as they come from the bundles.

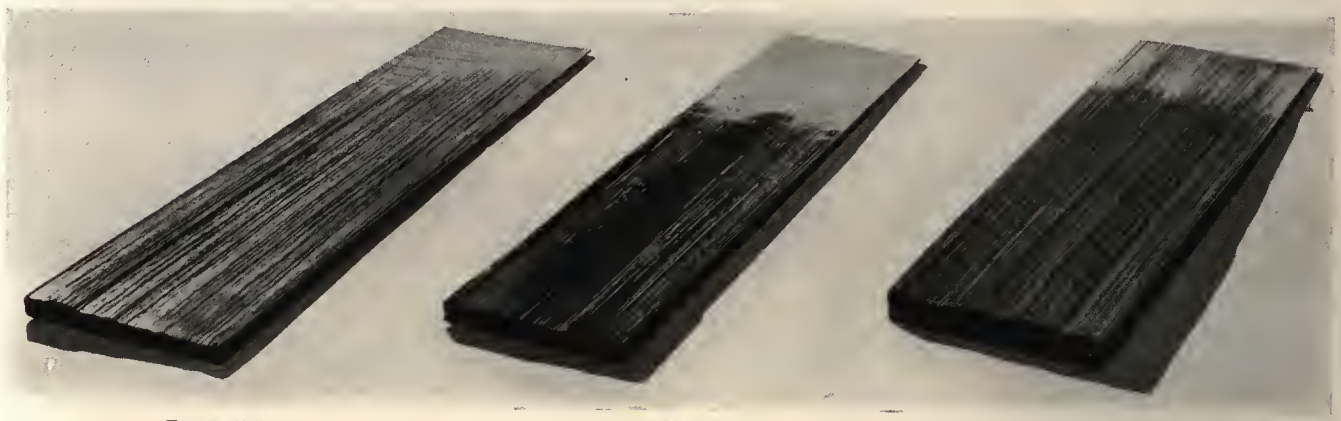
Roof and dormer cheek step flashed

Closed valley with flashing and paper in place

DELIVERIES

All shingles can be delivered to the job site via truck when within a 100-mile radius of New York City; otherwise f.o.b. cars nearest station. Shipments made to Illinois, Michigan, Indiana and states East. Deliveries arranged for other destinations.

types available



Type "A" Type "B" Type "C"

Type "A": Butt thickness varies from ⅜″ to ⅝″. This type is particularly adapted to sidewall installations and will not project beyond standard window and door casings. May be exposed up to and including 12″ to weather for sidewalls.

Type "B": Butt thickness varies from ½″ to ¾″. This type is suited to roofing uses and sidewall installations wherein both texture and extreme durability is indicated. Customary exposure to weather is: roofs 8″; sidewalls 12″.

Type "C": Butt thickness varies from ¾″ to 1¼″. This type is widely used for rustic architecture or where striking effects are desired.

Early American Brand

(Reg. U.S. Pat. Off.)

Details of alternate course woven hip

Roof and chimney flashed and countered

Early American Brand hand hewn post and rail fencing

Colonial Lumber Specialties Inc.

EARLY AMERICAN BRAND HAND SPLIT SHINGLES

POST AND RAIL FENCE

PHONE WORTH 4-6650

30 CHURCH STREET, NEW YORK, N. Y.

CREO-DIPT.. *First in the Home Parade!*

For 40 years Creo-Dipt has been the choice of architects, builders and discriminating home owners for homes of colorful beauty and enduring charm.

Appropriate for most any type of architecture, genuine Creo-Dipt Certigrade red cedar stained shingles are a sound lifetime investment. Maintenance costs are low since Creo-Dipts weather gracefully, requiring restaining only once every 4 to 6 years. Unlike imitation materials, the original freshness of Creo-Dipt stained shingles can be restored or, if preferred, an entirely new color scheme may be chosen.

Because of high insulating values, Creo-Dipts cut heating bills and provide cooler interiors in hot summer months.

For distinction and practicability choose Creo-Dipt for roofs and sidewalls.

For Long Exposure and Heavy Shadow Lines

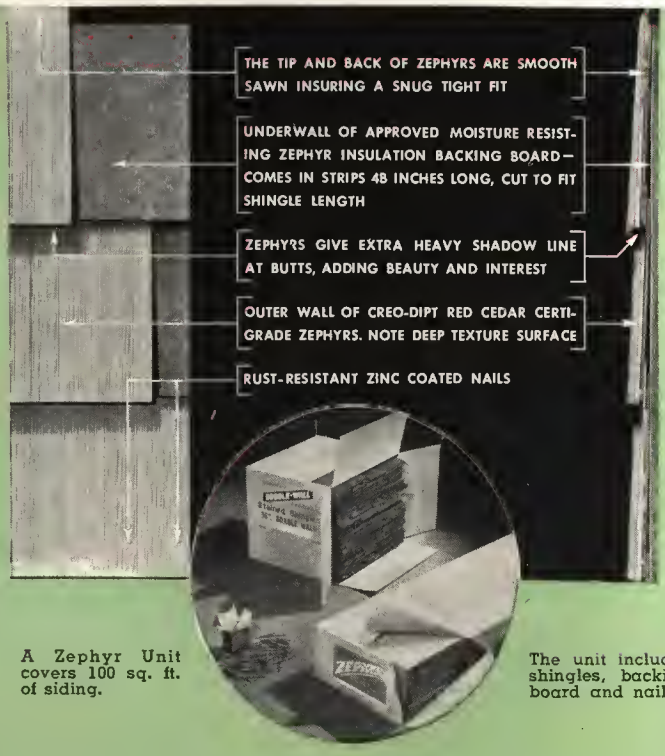
. . . *Choose* CREO-DIPT *Double Wall Zephyrs!*

Combining sidewalls and insulation in one, Creo-Dipt Zephyr Double Walls are a practical solution to high building costs. Double Wall Zephyrs consist of genuine Certigrade red cedar shingles, straight grained with parallel sides and square butts, deep textured and factory stained and preserved with pure linseed oil base stains, plus moisture resistant insulating backing board.

Application over sheathing in new construction or over old siding or stucco in remodeling is speedy as shown by the illustrations on page 3 — reducing labor costs to a minimum.

Zephyr Double Walls are sold in units of 100 square feet, including Zephyr red cedar stained outer wall shingles or shakes, insulation backing board and special small head Creo-Dipt rust proof nails.

Experience has proven that Zephyr Double Walls pay for themselves in a short period of time in fuel and repainting savings that result.



A Zephyr Unit covers 100 sq. ft. of siding.

The unit includes shingles, backing board and nails.

CREO-DIPT Double Coursing Method . . . *for New Sidewall Construction or Remodeling*

Where desired the Creo-Dipt Double Coursing Method with Zephyr-type Shakes can be used in place of Double Wall Zephyrs. This construction consists of an outer wall of Certigrade red cedar factory stained and preserved Creo-Dipt Zephyr-type Shakes, straight grained, deep textured applied over an underwall of natural cedar undercoursing shingles. Both types of shingles for outer and underwalls for each 100 square feet of sidewall application are sold as a complete Creo-Dipt doublecoursing unit. Special small head Creo-Dipt Rust Proof Nails are also available.

Creo-Dipt Double Coursing Method saves fuel and painting costs — adds beauty and value to new sidewall construction and remodeling.

(1) A single nail or staple will hold each under shingle.

(2) The tip and back of Zephyrs are smooth sawn, insuring a snug fit. Sides are parallel reducing trimming and waste.

(3) Building Paper is used underneath.

(4) Zephyr Outer walls are straight grained, deeply textured and beautifully stained.

(5) Undercoursing natural red cedar shingles are used as the underwall, increasing insulation.

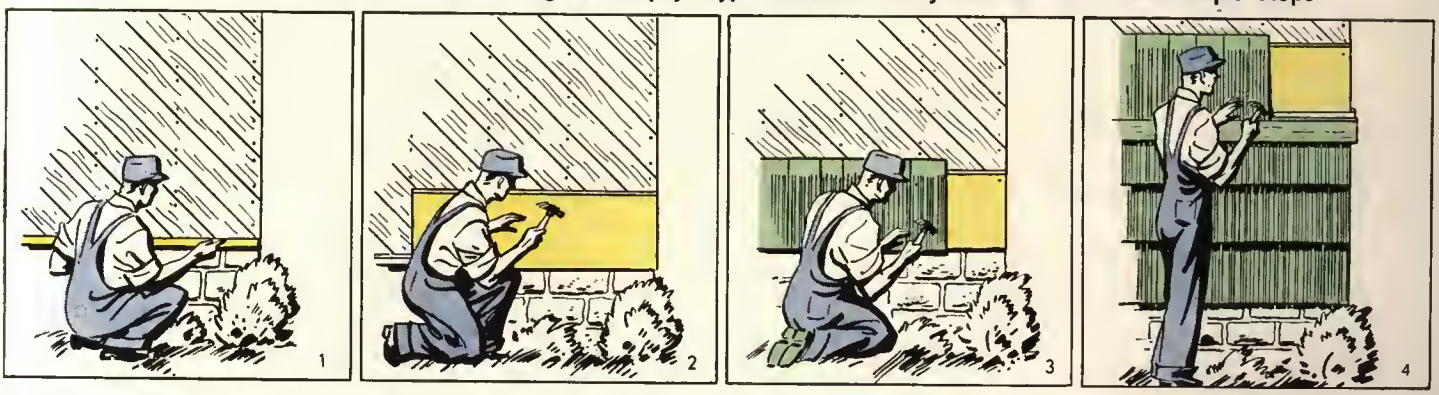
(6) Notice heavy, interesting, wide shadow line at butt.

(7) Lay at long exposure to the weather.

(8) Outer wall ½" lower than underwall.

(9) Two Special Creo-Dipt Rustproof small-head nails should be used on all Zephyr shingles that are 6" or under in width, placed 2" above butt line and ¾" from edge. On Zephyrs from 6" to 10" in width use one extra nail in center. On wider Zephyrs use 2 extra nails spacing them about 4" apart. This holds the Double Wall securely so that it will not be affected by any weather condition. Use a strip of ordinary shiplap or chalk line for a straight edge or guide in applying. Lay the butts of the unstained underwall shingles on the upper lip — and Zephyr-type Shakes on the lower lip.

Double Wall Zephyrs or Double Coursing with Zephyr-Type Shakes is Easily Done in These Four Simple Steps



STEP 1 — Apply cant strips of Zephyr Board 2 inches wide, 48 inches long only for first or bottom course. This introduces proper projection and tension for succeeding courses. Cut 8 cant strips from a piece of Zephyr board 16 x 48 inches, 7 from the 13½" x 48" pieces about 2 inches wide.

STEP 2 — Apply the first strip of Zephyr backing board extending the lower edge out and over the cant strip. Use 3 ordinary nails driving in the center one first and the other two in opposite corners 3 to 4 inches from the top. Adjacent strips of Zephyr Board should be spaced ⅛ inch apart.

STEP 3 — Apply Zephyr shingles over approved Zephyr backing board. Use a straight piece of ordinary ship lap for guidance. Zephyr board lies on the upper lip and Zephyr shingles on the lower one, concealing the underwall. Or a chalk line may be snapped as a guide, extending the butts of the Zephyr shingles ½" below the lower edge of the backing board. Cover joints of board with wide Zephyr shingles.

Use only Creo-Dipt small head rustproof nails, which pass thru both shingles and Zephyr backing board at top and bottom.

STEP 4 — Raise ship lap, proceed to lay other courses in same manner. Use two Creo-Dipt nails for 6" width shingles or under, placed 2" above butt line on 18", 1½" above on 16" Zephyrs. On Zephyrs 7 to 10" use one extra nail in center; for wider shingles use two extra nails 3" to 4" apart.

When the Creo-Dipt Double Coursing Method is used instead of Zephyrs with insulation backing board the procedure is identical except that undercoursing shingles are substituted for the underwall instead of using Zephyr insulation board.

* Figure 5X and Perfections in relation to the manner in which they are to be used.
Example: One square of 16" 5X when applied on a roof at 5" exposure will require 4 cartons 20-20 courses each.

One square of 16" 5X when applied at 7½" exposure on a sidewall will require 2.6 cartons 20-20 courses (100 sq. ft. ÷ 38.5 sq. ft. — see recommended 7½" exposure in coverage chart to the right).

18" Perfections should be figured on the basis of 4 cartons for roofs at 5½" exposure or 2.55 cartons (18-18 courses) for side walls at 8½" exposure. (100 sq. ft. ÷ 39.3 sq. ft. — see recommended 8½" exposure in coverage chart to the right).

COVERAGE CHART — CREO-DIPT SHINGLES

Tabulated below are the square feet covered by one bundle of shingles according to exposure desired and pack (number of courses per bundle). Each shingle is identified as to length, trade name, together with recommended roof and sidewall exposure. Double underline indicates maximum roof exposure. Single underline, maximum sidewall exposure.

	No. Courses Per Bundle	EXPOSURE 5"	5½"	6"	7"	7½"	8"	8½"	10"	11"	12"	14"
*16" — 5X	20/20	25.7	28.3	30.8	36.0	38.5	41.1	43.7	51.4	56.5	61.7	72.0
*18" — Perfections	18/18	23.1	25.4	27.8	32.4	34.7	37.0	39.3	46.2	50.9	55.5	64.2
24" — Royals	13/14			20.8	24.3	26.0	27.8	29.5	34.7	38.2	41.6	48.6
18" — Hand Splits (Non Tapered)	18	11.6	12.7	13.9	16.2	17.4	18.5	19.7	23.1	25.5	27.8	32.4
25" — Yorktowns and Pilgrims (Hand Split Shakes)	8/8					15.4	16.4	17.5	20.6	22.6	24.7	

RUSTIC HAND SPLIT SHAKES... *for Roofs and Sidewalls*

Hand split shakes date back to early Colonial Days. No other building material gives the same pleasing rustic appearance nor the deep interesting shadow lines so desirable in the unusual home.

Creo-Dipt Hand Split Shakes are of three kinds. Pilgrims, which are hand split one side and smooth sawn on the other, are 25" in length with a butt thickness varying from ⅝" to 1¼". Yorktown shakes are similar to Pilgrims but are more regular with an average butt thickness of ½" to ¾". Non-tapered handsplits, 18" in length, are hand split both sides and average ⅜" thick from end to end. See coverage chart on page 3. More detailed information and specifications are contained in the Creo-Dipt brochure on Shakes, which will be sent on request.

Other Creo-Dipt Stained Shingles for Roofs and Sidewalls

In addition to Zephyrs and Hand Split Shakes, Creo-Dipt also produces a complete line of Certigrade red cedar stained shingles in the following sizes. 16" Five-X, 18" Perfections, and 24" Royals. Unlike Zephyrs and Hand Split Shakes, these other Creo-Dipt shingles are smooth sawn both sides. Send for Reference Data Bulletin.

Creo-Dipt Shingles are carried in stock by leading distributors in principal points insuring prompt local delivery.

Standard CREO-DIPT Colors

Creo-Dipt Shingles are stocked in Silver Gray, Terra Cotta Red, Cape Cod Gray, Congo Brown, Moss Green, Ebony Black and also White Primer for a finish coat of Colonial White "A." Send for color chart.

Creo-Dipt's exclusive process of staining in linseed oil base stain preserves and protects wood shingles, insuring attractive colors of long life.

Never Paint Wood Shingles—Always Use Creo-Dipt Shingle Stains

Paint has its place but not on shingles. A shingle must breathe to keep alive—paint clogs its pores, seals in moisture and causes decay and rot. It also bridges the rough graining, cracks and peels as shingles contract and expand, and most important it covers and obscures the natural grain and beauty of the shingle. Beautify, protect and preserve red cedar shingles with Creo-Dipt Linseed Oil Base Stains.

CREO-DIPT COMPANY, INC., General Offices • North Tonawanda, N. Y.

ESTABLISHED 1909

FACTORIES: NORTH TONAWANDA, N. Y. TELEPHONE: TONAWANDA 2005

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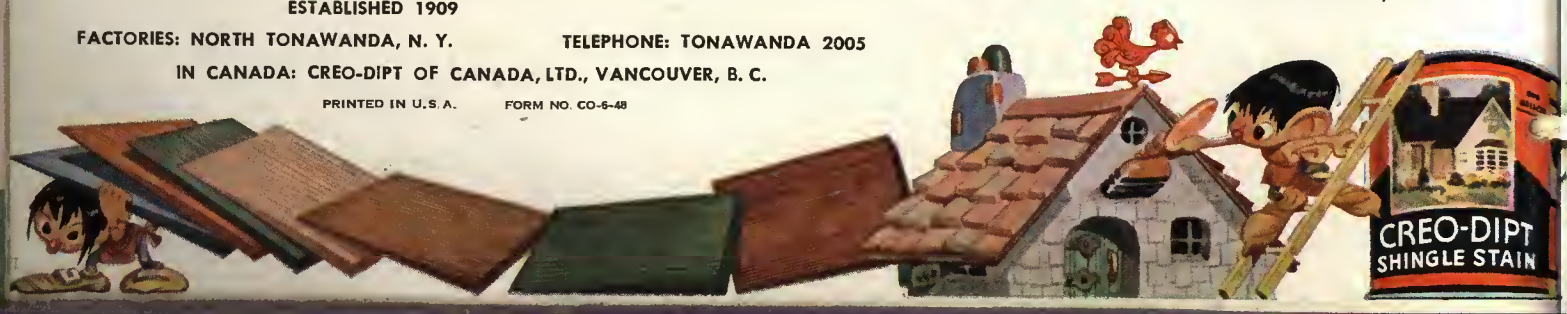


STAINED SHINGLES AND SHAKES
for Roofs and Sidewalls

Traditionally American design is enhanced with stained cedar shingle roof, combined with stained shingle or shake sidewalls.

Numberless effective combinations utilize stained shingles or shakes for partial coverage on sidewalls.

Stained Shingle & Shake ASSOCIATION

STAINED CEDAR SHAKES AND STAINED CEDAR SHINGLES

MASTER SPECIFICATIONS for ARCHITECTS and BUILDERS

●

SHEATHING BOARDS

(*The choice of open or solid sheathing is optional when Stained Shingles or Shakes are applied. The geographical location of the building will determine the most practical procedure.*)

(1) All sheathing shall be

(*Use 2 for open sheathing and 3 for solid sheathing.*)

(2) square edge boards 1″x3″, 1″x4″ or 1″x6″, and shall be spaced the same distance apart on centers as the shingles are to be laid to the weather, or 1″x6″ shall be spaced on double the weather exposure.

(*Use 3 for solid sheathing.*)

(3) Dressed and Matched or Shiplap cut from 1″ stock shall be laid solid.

(*Use 4 for BOTH open and solid sheathing.*)

(4) Each board shall be double-faced nailed at each end and at each bearing with two 8d nails driven about 1″ from the edges of the boards.

SHEATHING PAPER

(5) The outside of all exterior sheathed walls shall be covered with one continuous unbroken layer of rosin sized sheathing paper weighing not less than 20 lbs. per roll of 500 square feet.

(*If added insulation is wanted, dry or unsaturated deadening felt, or light-weight "blue" wall board may be specified.*)

(6) Sheathing paper shall be laid shingle fashion without wrinkles or buckles and with all joints at least 6″ and shall be carried over the studs, jambs, heads and sills of all openings, and no end laps shall occur within 18″ of any internal or external corner.

SHINGLES AND SHAKES

(7) The contractor shall cover all roof surfaces with (*Specify Stained Cedar Shingles or Handsplit Cedar Shakes.*)

(8) and all exterior side walls, sides of dormers, gable ends

(9) with Stained Cedar Shakes or Stained Cedar Shingles.

AMERICA'S TOP QUALITY ROOF AND SIDEWALL MATERIAL

Stained processed Shakes and Stained Cedar Shingles offer the architect versatility in color, weather exposure, and adaptability to all climatic conditions. Excellent quality, traditional with cedar shingles for roofs and sidewalls, is enhanced by full stain impregnation.

Beauty is enhanced by machine vertical graining and machine squared edges and butts, permitting tight, invisible joints on double-coursed walls.

This entrance illustrates the advantage of the variable exposures obtainable with double-coursed Stained Shake sidewalls. Choice of 12″ to 14″ exposure permits design of course lines flush with top and bottom of doorways and window casings. Tight "invisible" joints result from parallel edges and square butts of processed shakes.

ROOF AND SIDEWALL *Specifications*

ADVANTAGES OF STAINED SHINGLES AND SHAKES

Dip-Stained Shingles ond Shakes have two decided advantages of importance to architects. The dipping process completely immerses all sides and edges of the cedar in the penetrating stain oils, thus adding protection to the conceoled surfaces, as well as those exposed to the weather, assuring complete color impregnotion and tight fitting. Bulk dip-staining is an economy foctor because of lower labor costs compared with staining ofter opplication. Members of the Stained Shingle and Shoke Association have developed stains of particular excellence for impregnating cedar. Shingles and Shakes stoined by the manufacturer are certain to be more skillfully colored.

ADVANTAGES OF GROOVED "PROCESSED" SHAKES

A grooved or "processed" shake is a vastly improved top-grade cedar shingle. Precision machines are used to give the flat exposed surface a "combed" texture more uniform and more beautiful than the early American Handsplit Shakes. In addition, the machine process squares up the normally irregular shingle butts so that true horizontal course-lines are assured. Vertical edges of the shakes are machined parallel, permitting the use of tight, "invisible" joints which eliminate "shingled" appearonce, and provide a luxury siding look at great savings in cost. Stained Processed Shakes are readily available in a wide variety of colors through the manufacturers listed at the end of this bulletin.

(Stained Cedar Shakes and Stained Shingles are manufactured in three different lengths: 16", 18" and 24". The choice of length to be used may be determined upon the basis of the architectural effect that is wanted, and the cost that is justified. The longer shingles have thicker butts and are consequently longer lived, although the 16-in. length will give exceedingly good service, and very long life when properly applied according to these specifications.

(10) Stained Shingles (or Handsplit Shakes) for roofs shall be (*Specify length.*)

(11) Stained Shakes (or Stained Shingles) for side walls shall be (*Specify length.*)

(12) Stained Shakes (or Stained Shingles) for outer courses shall be (*Specify length.*)

(13) Shingles for under courses shall be (*Specify grade and length.*)

(14) Roof shingles shall be laid with a weather exposure of (*Specify exposure to the weather in inches from the following table.*)

(In general the lowest pitch used in the roof will govern, although certain instances may permit two different weather exposures for separate parts of the same roof.)

Pitch of Roof			*Exposure of Shingles in Inches*		
Pitch	*Rise in inches*	*Run*	*16*	*18*	*24*
1/8	3	12	3¾	4¼	5¾
1/6	4	12			
1/4	6	12	5	5½	7½
1/3	8	12			
1/2	12	12			
5/8	15	12			
3/4	18	12			

(15) Side wall Stained Shakes (or Stained Shingles) shall be applied with a weather exposure of (*Specify exposure to the weather in inches from the following table.*)

Length of Shingles (in inches)	*Exposure of Shingles (in inches)*	
	Single Course	*Double Course**
16	6 to 7½	8 to 12
18	6 to 8½	9 to 14
24	8 to 11	12 to 16

**Assuming exposed course is face or butt-nailed.*

(16) Shingles or Shakes shall be doubled at all eaves (*Specify "tripled" where box cornices or narrow eaves occur.*)

(*Use 17 for side walls.*)

(17) and at foundation line.

(*To insure proper spill into gutters use 18.*)

(18) Butts of the shingles in the first course on roofs shall project 1½" from the first sheathing board.

STAINED CEDAR SHAKES AND STAINED CEDAR SHINGLES

(19) Roof shingles shall be spaced apart not less than ¼" nor more than ⅜".
(20) Side wall Stained Shakes (or Stained Shingles) shall be (*Specify spacing as in 21 for Shakes or 22 and 23 for Stained Shingles.*)
(21) laid with close jointed edges,
(22) spaced apart not less than ⅛" nor more than ¼",
(23) and the joints in the shingles in any one course shall be not less than 1½" away from the joints in adjacent courses.

TAPERSPLIT SHAKES

(24) Roof sheathing shall be spaced on centers equal to the weather exposure of the Shakes.
(25) Exposure shall be 10" or less on roofs rising 5½" or more in 12". (*SEE 32 for Resawn Shakes.*)
(26) First course at eaves shall be tripled-covered with: one full strip of 30 lb. felt or equal plus one course of 18" tapersplits plus one course of 25" tapersplits.
(27) One 12" strip of 30 lb. felt shall be laid (*Use 28* for *10" exposure or 29 for 8" exposure.*)
(28) 20" up from the butt line of each course.
(29) 16" up from the butt line of each course.
(30) Hips and ridges shall be covered with two strips of 30 lb. felt, 8" wide before laying hip or ridge Shakes.
(31) Nails shall equal quality specifications for Shingle roofs and shall be 5d or 6d for roof shakes with butt thickness of ½". For shakes of ⅝" to 5/4" thickness, 7d or 8d nails shall be used.

RESAWN SHAKES

(32) Specifications shall be same as Tapersplit Shakes except that Resawn Shakes are not recommended for roofs having less than 4" rise in 12" run.

HIPS AND RIDGES

(33) All hips and ridges shall be (*Specify type of which 34 is an example.*)
(34) the modified "Boston" type. Shingles shall be of approximately the same uniform width. The first Shingle of the hip shall be sawed across the butt so that the end of the butt will be parallel with the butts of the Shingles in the first course of Shingles at the eave line. It shall then be nailed in place with the lower edge extending along a line previously marked off back from the center line of the hip on that side, the nails being placed so that they will be covered by the next hip Shingle applied.

COLOR ON WALLS

Dip-stained at the manufacturing plants, processed cedar Shakes are offered in a wide variety of excellent full-toned colors. Shown below are four of the most preferred shades.

DARK GREEN—Perennial favorite for all climates, a dark green Shake is manufactured by nearly all members of the Association.

LIGHT BROWN—A beautiful shade for full walls, especially adaptable to architectural treatments in combination with stone and tile.

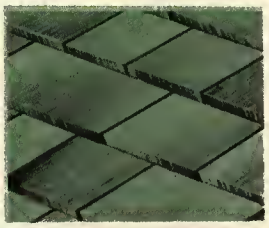
LIGHT GRAY—This neutral tone, produced by all manufacturers, resists wear—lasts for years without restaining.

DARK BROWN—Becomes more beautiful and mellow with age. Many home-owners and architects agree that this Shake never needs restaining.

ROOF AND SIDEWALL *Specifications*

COLOR ON ROOFS

Stain impregnation is particularly beneficial in making roofs more resistant to snow, rain and sun. Pre-staining is inexpensive, adds longer life and real beauty.



Standard Green is a favorite for Cope Cad and American Colonial roofs.

Dark Green has extreme resistance to sun and rain; complements green landscaping.

Deep Red—America's foremost roof color for small hames.

Brawn—Especially complimentary to light or dark brown shake sidewalls.

The edge of this Shingle projecting above the center line of the hip shall be cut back flush with the face of the opposite hip or ridge Shingle. The next two Shingles are now applied, but in reverse order, so that the final trimmed-off edge slants in a direction opposite to that of the first exposed edge.

NAILS AND NAILING

(Do not use bright, or blued, steel wire nails in applying Shakes or Shingles.)

(35) Each roof Shingle shall be rigidly secured in place with not more than two full driven rust-resistant or zinc coated. (*Specify size.*)

(Use 36 with 40 for new roofs with 16" and 18" shingles and for new single-coursed side walls.)

(36) 3d shingle nails.

(Use 37 for new roofs with 24" shingles.)

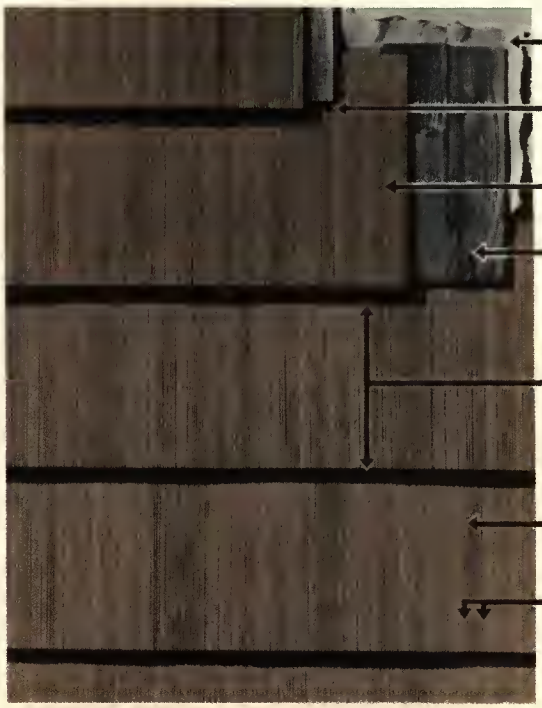
(37) 4d shingle nails.

(Use 38 for new double-coursed side walls with all shingles and for over-roofing with 16" and 18" shingles.)

(38) 5d "box" or special 14-gauge shingle nails.

(Use 39 for over-roofing with 24" shingles. For butt-nailing in double-coursing use small head 5d nails.)

DOUBLE COURSING SIDEWALL APPLICATION



Unsaturated building paper is laid between undercoursing Shingles and sidewall sheathing.

Outer course is laid ½" lower than the under (concealed) layer, providing attractive thick appearance and shadow line.

STAINED CEDAR SHAKES or STAINED CEDAR SHINGLES are used for the outer course.

Unstained undercoursing Grade Shingles are used for the under course.

Weather exposures may be varied to achieve many desirable architectural effects. Sixteen-inch shingles or shakes may be exposed up to 12" to the weather. Eighteen-inch shingles and shakes allow exposures as great as 14" to the weather.

Stained cedar shakes or shingles may be laid with either tight or spaced joints, depending on the effect desired.

Two rust-resistant, small head 5d nails per shingle or shake for outer course, applied 2" above butt-line and ¾" from edges. Use a third nail in shingles wider than eight inches. Each undercourse shingle may be stapled temporarily, or held in place with one 3d nail.

STAINED CEDAR SHAKES AND STAINED CEDAR SHINGLES

(39) 6d "box" or special 14-gauge shingle nails.

(40) except that 5d shingle nails shall be used for hips and ridges. (See 38.)

(41) Nails shall be driven flush but not so that the head crushes the wood and shall be placed not more than ¾" from the side edges of the shingles and ¾" to 2" above the butt line of the shingles in the next course above.

(*Use 42 where double-coursing occurs.*)

(42) except that in butt-nailing in double-coursing, the nails shall be placed from 2" to 3" above the butt line, and there shall be a third nail used in shakes over 8" wide.

FLASHINGS

(43) All flashings and sheet metal throughout shall be (*Specify material, weights, etc.*)

(*The proper choice of materials for valleys and flashings rests with the architect, and must, of course, be determined upon the basis of cost as well as probable life. 16" Stained Cedar Shingles or Stained Shakes will give good service for 25 to 50 years or longer, depending upon exposure and pitch of roof; hence much consideration should be given to the proper choice of metal for flashings.*)

LEAD: *Lead should be specified as "hard lead" weighing not less than 2½ lbs. per sq. ft. for step flashings and not less than 3 lbs. per sq. ft. elsewhere.*

TIN: *Tin or terne plates should be not less than IX (and if terne, coated with tin and lead, containing not less than 25% tin) and weighing not less than 300 lbs. per box of 112 sheets 20" x 28" in size.*

GALVANIZED IRON: *Galvanized Iron should be specified by gauge and coating using 24 or 26 gauge with a coating not less than 1½ ounces per square foot.*

COPPER: *Copper should be specified as soft sheet copper weighing not less than 16 ounces per square foot.*

SOLDER: *Solder should be specified as half and half pig lead and block tin. Flux should be rosin for tin and acid for galvanized iron.*

(44) Proper allowance shall be made in all cases for expansion and contraction and all flat and lap seams shall be made in the direction of the flow of water.

(45) The Contractor shall provide flashings and counterflashings wherever indicated on the drawings and as necessary to make a weather and water tight job. Flashings shall be free from longitudinal joints.

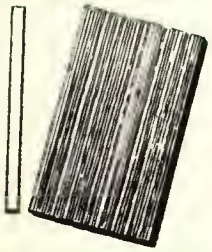
REMODELING OLD HOMES

Application of Stained Shakes to old, cracked, leaky and unsightly walls is a simple matter. Over stucco, nailing strips are attached with nails long enough to penetrate the old surface and the underlying sheathing. Over all old flat wood surfaces, stained shakes are double-coursed directly to the surface, adding insulation, long life, and completely new architectural appearance to outmoded sidewalls.

Stained Shingles, Handsplit and Resawn Shakes are all excellent for re-roofing right over old materials. The "bridging" effect of shingle application actually adds materially to the strength and rigidity of the roof, where most materials add only weight, without increasing structurol strength. The preservative oils in **Stained Shingles** add extro years of life.

ROOF AND SIDEWALL *Specifications*

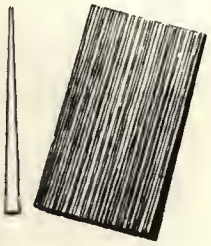
HANDSPLIT SHAKES



Ideally suited to luxury homes, resorts and summer or country cottages, handsplit shakes are truly America's "natural" roofing material. Used since colonial days, these shakes reflect America's earliest architectural tradition, and will out-last, for their cost, any other roof material available.

TAPERSPLIT SHAKES

(Both sides with natural split surface)

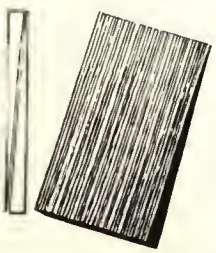


These are produced with hand tools from clear Cedar blocks. After the logs are sawed to the proper length, expert shake makers split these blocks so that they taper from butt to tip, similar to a sawn shingle. They are made 24" or 25" long and ½" thick at the butt, tapered to a thin tip so they can be applied on a roof in the same manner as shingles.

These Tapersplit Shakes can be produced only in Vertical Grain. The edges are trimmed by hand to remove sap, rot, or other defects, and to give a reasonably true edge, but not to make them at right angles to the butt.

RESAWN SHAKES

(Handsplit face, sawn back)



Cedar logs are first cut into blocks the proper length. Then these blocks are split by hand into boards about 1½" thick. These boards are then made into shakes by sawing them diagonally, which produces a thin tip, a flat sawed back, and a rough face. Resawn shakes present a rougher surface than Tapersplit shakes and have a greater variance in thickness.

They are made in one length, and packed in two sizes according to the thickness—⅜" to ¾" x 25" or 24" and ⅝" to 5/4" by 25" or 24".

VALLEY FLASHINGS

(Use 46 to 56 for Open Valleys and 57 for Closed Valleys.)

(46) Longitudinal joints in valleys will not be permitted.

(47) Transverse joints shall be made shingle fashion and lap not less than

(Use 48 for roofs of ½ pitch or steeper.)

(48) 6 inches

(Use 49 on roofs of ½ to ¼ pitch.)

(49) 8 inches

(Use 50 on roofs of less than ¼ pitch.)

(50) 10 inches

(Use 51 for tin.)

(51) and shall be soldered.

(Use 52 for lead.)

(52) Valley sheets shall not be longer than 8 ft. Joints between lead sheets must be loose-locked, the joint being filled with an approved non-hardening compound. Lead valley sheets shall be secured with hard lead cleats folded into the loose-locked joints; the other end of the cleat being nailed free of the lead sheet.

(53) Valleys sheets shall extend outward on each side from the center line of all valleys for a distance of at least (*Specify distance.*)

(Use 54 for ½ pitch and steeper and 55 for less than ½ pitch.)

(54) 7 inches.

(55) 10 inches.

(56) At the ridge line, the open portion of every valley shall be at least 2" wide, increasing in width at the rate of at least ½" per 8 ft. in length as it descends. Valleys uniform in width, and not less than 4" wide shall be used where their length does not exceed 8 ft.

(57) Flashings for closed valleys shall be separate pieces so that there will be a flashing between each course of shingles. Each piece shall be set so as to lap at least 3" and to be entirely concealed by the shingles; shall be fastened with nails at the top edge only; shall be sufficient length to extend 2" above the top of each shingle and shall lap the flashing sheet below 3".

Stained CEDAR SHAKES & SHINGLES FOR ROOFS & SIDEWALLS

ASSOCIATION MEMBERS

Portland Shingle Company
9038 North Denver Avenue
Portland, Oregon

Colonial Cedar Company, Inc.
600 West Nickerson Street
Seattle, Washington

West Coast Stained Shingle Co.
1118 Leary Way
Seattle, Washington

Capilano Shingle Company, Ltd.
P. O. Box 608
Vancouver, B. C., Canada

Perma-Products Company
7001 Morgan Avenue
Cleveland, Ohio

The Robert McNair Shingle Co., Inc.
198 West Hastings Street
Vancouver, B. C., Canada

M. R. Smith Lumber & Shingle Co.
Box 1854 Henry Building
Seattle, Washington

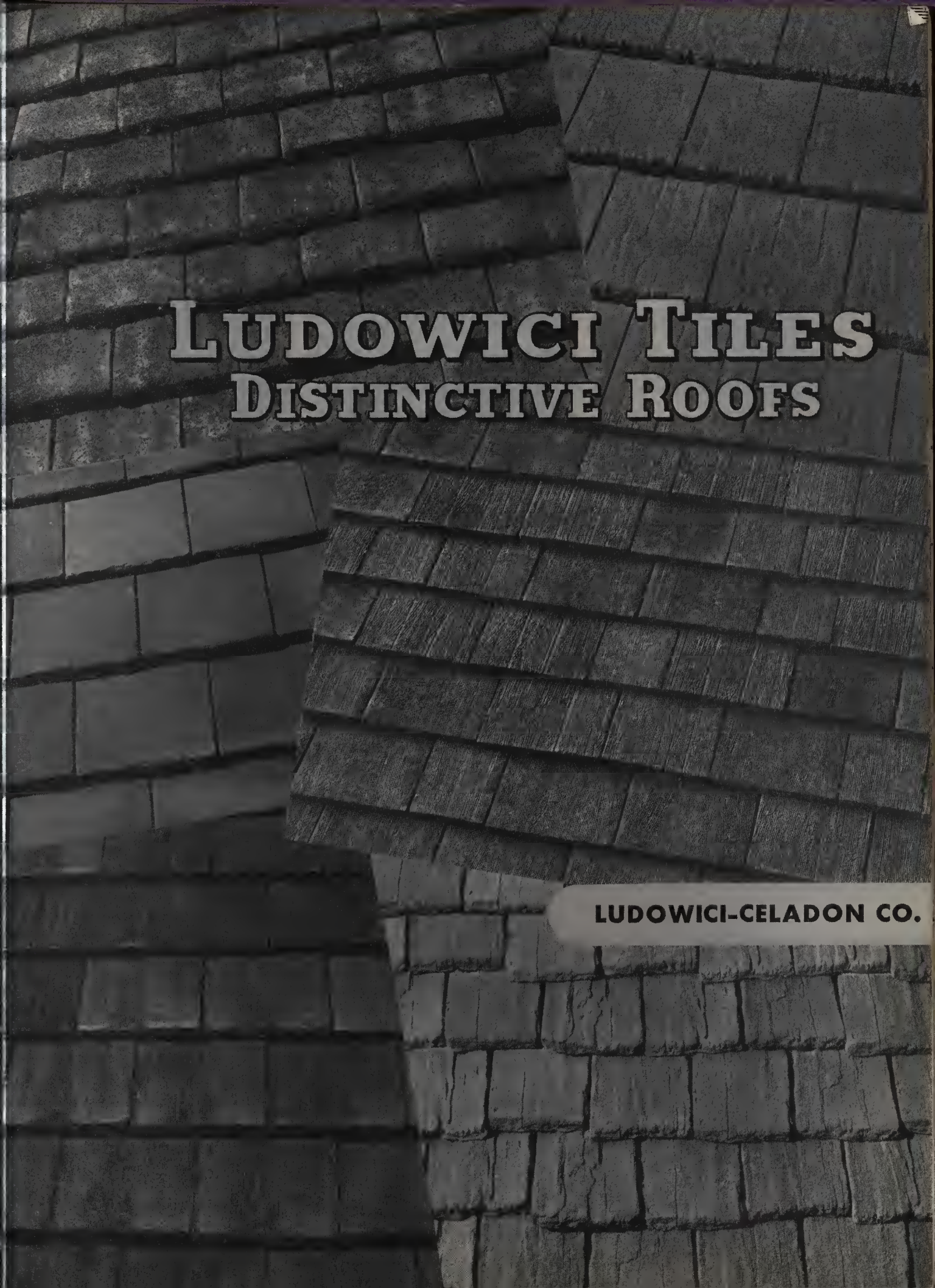
Preservative Paint Company
5410 Airport Way
Seattle, Washington

Creo-Dipt Company, Inc.
North Tonawanda, New York

Huntting-Merritt Shingle Co., Inc.
9110 Milton Street
Vancouver, B. C., Canada

Everett Shingle & Shake Company
Everett, Washington

LITHO IN U. S. A.



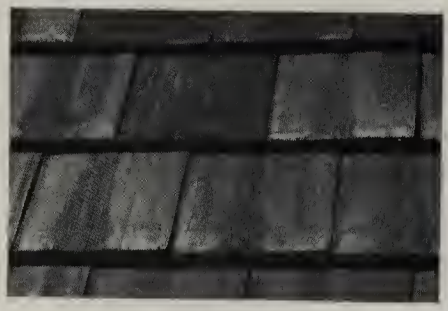
Ludowici Tiles
Distinctive Roofs

LUDOWICI-CELADON CO.

LUDOWICI INTERLOCKING SHINGLE TILES

Ludowici Roofing Tiles and Ludowici Tile Slabs are made from fine shales.
Over fifty years experience has enabled Ludowici to develop tiles of quality and beauty, in a wide variety of patterns, soft rich colors and non-reflecting textures. Authentic designs meet all architectural requirements.

Glazes full and dull are produced in many colors. Personal tastes can be met.
Ludowici Interlocking Tiles are easily laid up units, side and top locked, nailed direct to roof base. They are sturdily designed, rugged in appearance yet light in weight and reasonable in cost.



WILLIAMSBURG

Average 225 pieces per square.
Exposure—8″ by 8″.
Weight—900 lbs., fittings included.
Surface—Rough-combed texture.
Standard colors—Grays and greens.

LIGHT WEIGHT

Average 173 pieces per square.
Exposure—7⅞″ by 10¾″.
Weight—860 lbs., fittings included.
Surface—Smooth or weathered texture.
Colors—Blacks, browns, greens, reds.

TILE STONES

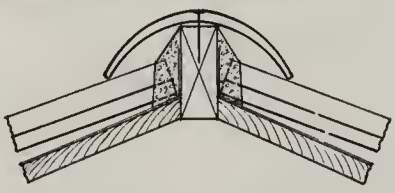
Average 225 pieces per square.
Exposure—8″ by 8″.
Weight—900 lbs., fittings included.
Surface—Stone-like texture.
Standard colors—Grays and greens.

EARLY AMERICAN

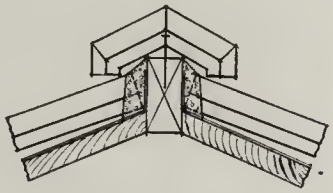
Average 173 pieces per square.
Exposure—7⅞″ by 10¾″.
Weight—880 lbs., fittings included.
Surface—Weatherbeaten wood texture.
Standard colors—Grays and greens.

DETAILS SCALE 1½″ PER FOOT

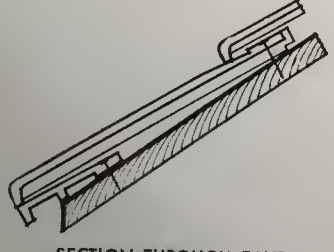
SECTION THROUGH GABLE



CIRCULAR COVER HIP

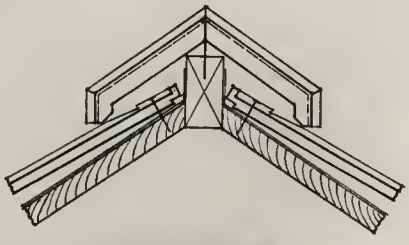


NO. 118 HIP



SECTION THROUGH EAVE

CIRCULAR COVER RIDGE



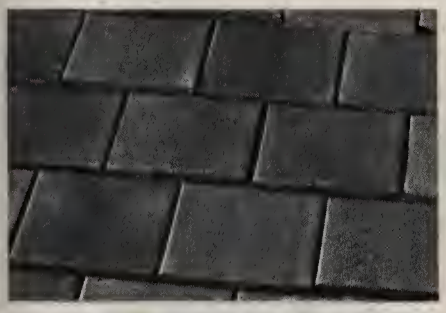
NO. 211 RIDGE

LUDOWICI TILE SHINGLES

Tile is a perfect roof. Variety in color and surface textures make Ludowici Tiles adaptable to any natural setting and any type of architecture. They afford exceptional protection against fire and the elements.

Properly applied, their first cost is their only cost. No heavier under construction is necessary than is required for a well built roof.

Samples and applicable specifications on request.



PROVINCIAL

Average 295 pieces per square.
Exposure—7½" by 6½".
Weight—1620 lbs., fittings included.
Surface—Fine scored or weathered texture.
Colors—Blacks, browns, greens, reds.

GEORGIAN

Average 277 pieces per square.
Exposure—5", 7" or 8" by 6½".
Weight—1600 lbs., fittings included.
Surface—Rough-combed texture.
Standard colors—Grays and greens.

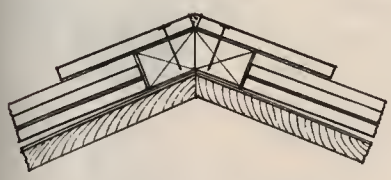
COLONIAL

Average 317 pieces per square.
Exposure—7" by 6½".
Weight—1600 lbs., fittings included.
Surface—Weatherbeaten wood texture.
Standard colors—Grays and greens.

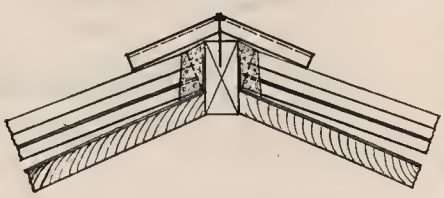
NORMAN

Average 410, 343 or 317 pieces per square.
Exposure—7" by 5", 6" or 6½".
Weight—1610 to 1850 lbs., fittings incl.
Surface—Pitted and weathered.
Colors—Greens, grays, browns, blacks.

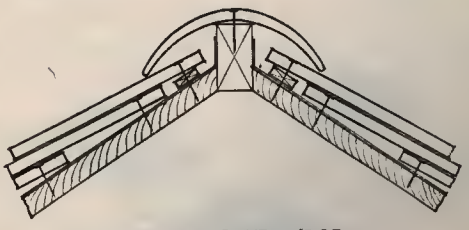
DETAILS SCALE 1½" PER FOOT



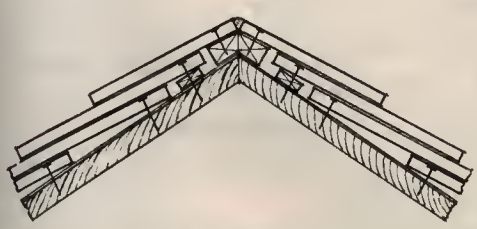
HEADER COURSE HIP



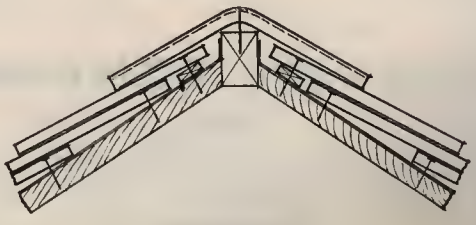
NO. 111 HIP



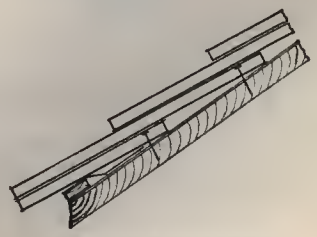
CIRCULAR COVER RIDGE



HEADER COURSE RIDGE



NO. 111 RIDGE



SECTION THROUGH EAVE

Ludowici Roofing Tiles Made From Hard Burned Shale

Ludowici tiles of varied shapes and surfaces reproduce with great fidelity the rugged charm of French and English countryside roofs, of old Spanish and Italian villas, and tile roofs of the Northern countries.

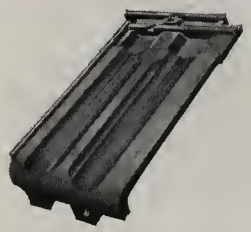
Authentic units of design are provided not only for European and Classical reproductions, but also to faithfully reproduce our own Colonial roofs, which were covered with hand split wood shingles.

PATTERN	EXPOSURE	WEIGHT
Spanish	8¼" x 10¼"	1000 lbs.
French	8⅛" x 13¼"	1000 lbs.
Greek	12" O.C. x 10"	1460 lbs.
Greek	19" O.C. x 15"	1470 lbs.
Raman	12" O.C. x 10"	1400 lbs.
Raman	19" O.C. x 15"	1480 lbs.
Cubana Tapered Mission	11¼" O.C. x 15"*	1600 lbs.
Straight Barrel Mission	11½" O.C. x 11¼"	1350 lbs.
Straight Barrel Mission	11½" O.C. x 15"	1350 lbs.

* When used with 18" Straight Barrel Mission pans. Weights include average fittings.

SPANISH

ROMAN



FRENCH

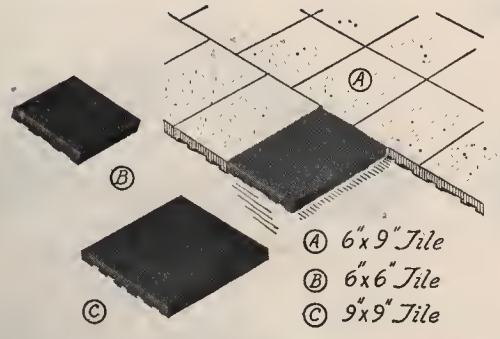
GREEK

TAPERED MISSION

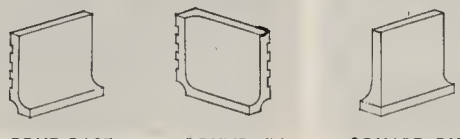
STRAIGHT BARREL MISSION

Ludowici Tile Slabs

Hard burned, smooth surfaced, acid resistant and of proven durability, Ludowici Tile Slabs fulfill many requirements. Builders use them for promenades, terraces, walks, floors, porches, pools, tanks and various industrial needs. Extruded under heavy pressure and accurately cut, the acceptance of this product illustrates the advances made in the brickmakers art. Made in natural Red shades in ¾" and 1" thicknesses.

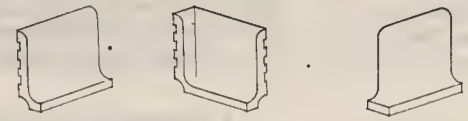


SQUARE TOP COVE BASE AND ANGLES



COVE BASE — ROUND IN ANGLE — SQUARE OUT ANGLE

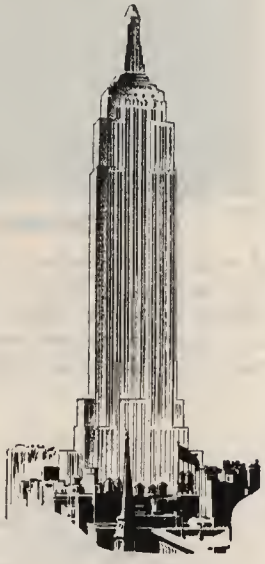
ROUND TOP COVE BASE AND ANGLES



COVE BASE — SQUARE IN ANGLE — ROUND OUT ANGLE

BULL NOSE TILE SLABS

BULL NOSE — ROUND OUT CORNER — ROUND IN CORNER — SQUARE IN CORNER



LUDOWICI-CELADON COMPANY

New York 17, N. Y.
565 Fifth Avenue

Washington 5, D. C.
740—15th Street, N.W.

104 South Michigan Avenue
Chicago 3, Ill.

Cleveland 20, Ohio
13111 Shaker Square

SLATE

Photograph by Sigurd Fischer

Slate for Roofing, Flooring, Terraces, Walks

The product of our quarries is hard, dense slate rock of a degree of quality and color peculiar to the district. The quarried rock is made into roofing slate, slate flooring and garden flagging at our own quarries by experienced craftsmen in strict accordance with approved details and specifications.

All orders are executed under our personal supervision, assuring our clients that the years of our experience as slate makers have gone into the preparing of their material for the roof, floor or flagging.

Architectural Service

We will gladly prepare sketches, color schemes, specifications, details, etc., for all types of slate roofs. Samples sent on request.

O'Brien Brothers' Slate have the following advantages:

Colors—complete range of slate colors
Thickness—as desired
Surface Texture—smooth or rough
Roof Texture—designed as specified
Natural stone
Non-combustible
Waterproof
Long life
Resistant to climatic changes
No preservative required
Lower insurance premiums
High salvage value
Low maintenance costs

O'BRIEN BROTHERS SLATE CO., INC.
established 1901

• colors available

weathering green and gray Originally known as Sea Green, then as Weathering Green and of late described as Semi-Weathering Green and Gray. It is the basic product of Vermont quarries and most widely known and used. Grayish slate color when first quarried, upon exposure to the elements a percentage change to soft tones of buff and brown, the remainder retaining initial color. This change in color in no way affects the durability of the slate. Available in light and dark shades.

unfading green Is one of the strong, fast colors. The shades vary somewhat from a light green to a dark emerald color.

unfading mottled gray green Presents a grayish green background with promiscuous clouds or spots of mottling in dark, medium and light shades.

unfading mottled green and purple The green and purple color appears in each individual slate, in varying shades, some almost clear purple or green, but usually mottled. All blend together in a soft and harmonious effect. Can be furnished with purple or green predominating.

variegated purple The purple predominates—some slates being clear purple, but some with green spots and shadings. A small percentage change upon exposure to a harmonious shade of brown and buff color while others retain their original color.

mottled gray black Vary in shade from clear light gray to tones of dark gray, created by dark streaks, some running vertically, others crosswise of the individual slates.

Vermont black Vary in shade from dark gray to black.

rustics Made from top rock with green, gray, black and purple base rock. Face of slate shows colors in bronze and buff clear and in splotches with base rock color showing through splotches. Suggested specifications be for not less than ⅜″ thick and thicker.

unfading red Available in limited quantities only in random widths and lengths. The most expensive of all slate quarried.

All roofing slate described are guaranteed grade A slate conforming to federal specification SS-S-451.

• sizes

The foregoing colors can be furnished singly or in any desired percentage of each. Except as otherwise indicated, the average standard thickness is 3/16″ for commercial types with smooth texture. Rough texture slates are available in intermingled thicknesses from 3/16″ to ⅜″.

A "square" is the standard of measurement and is the number of pieces of any size required to cover one hundred square feet of roof surface, not including waste in cutting for hips, valleys, dormers, etc. For very steep roofs or siding where a 2″ double head lap is sufficient, fewer slates are needed.

Many slates are being applied over artificial roofings which have succumbed to the ravages of time and the elements, thus converting semi-permanency into permanent roof protection.

The standard lengths are 24″, 22″, 20″, 18″, 16″, 14″, 12″, 10″. For some years, architects have continued to favor the use of one length and random widths or graduated lengths and random widths. This avoids the multiplicity of uniform rectangular exposures and improves perspective. Any of the designated colors can be furnished in these thicknesses and estimated weights per square—3/16″ 700 to 800 lbs.; ¼″ 950; ⅜″ 1400; ½″ 1800; ¾″ 2500; 1″ 3400.

• nails for use with slate

Slate nails may be zinc coated, copper weld or copper. However, numerous slate roofs, applied with ordinary wire slate nails many years ago, have given a long period of service and are still intact. Freedom from moisture keeps nails dry and rustless. Under ordinary conditions, 3d nails are suitable for commercial standard slates on main roof sections and 6d for hips and ridges. Thicker slates require longer and heavier gauge nails. (Add one inch to twice the thickness of the slate.) Nail holes are machine punched, which is in accordance with Federal Specifications.

• application data

The orthodox method of application provides a double head lap of 3″, the exposure being determined by deducting the lap (3″) from the length of the slate and dividing the difference by 2. Thus a slate 18″ in length should show an exposure of 7½″ and undereave slate 11″ long. The length of the eave slate is found by adding not less than 3″ to the exposure of the regular slate.

The slate as quarried in the Vermont-New York district, being a permanent roofing material, should be properly applied by competent and reliable workmen, the most important detail being the maintenance of the 3″ head lap throughout.

Standard thickness slate weighs only about seven pounds to the square foot of roof surface.

Any roof construction conforming to good engineering practice and suitable for other roofing material is adequate for standard slate. This fact should be fully recognized in the interest of truth, economy and conservation. The weight of the roof covering is an insignificant factor when compared with the combined weights of rafters, sheathing, snow, etc., and the water saturation of artificial roofing materials. Research conducted by the National Slate Association fully established the fact that any building strong enough for other types of roofing material is equally sufficient for standard thickness slate.

• specifications

(1) General and Guarantee

(a) The General Conditions of the contract are hereby made a part of the contract and the roofing contractor shall examine these General Conditions and thoroughly acquaint himself with all the requirements therein contained.
(b) This contractor shall furnish all materials and labor in accordance with the drawings and these specifications.
(c) This contractor shall inspect all surfaces prepared for slating by other trades, point out to the proper authority all defects, and shall not proceed with the laying of felt, flashings or slate until the necessary corrections have been made.
(d) Roofing shall be applied by workmen experienced in the applying of slate.
(e) The roofing contractor shall furnish his own scaffold or rigging, or arrange with the general contractor for the use of scaffolds furnished by others.
(f) A written guarantee shall be futnished that the materials used ate in strict accordance with these specifications, and that any and all repairs required on the roof due to defective materials or workmanship furnished under this contract shall be made without cost to the owner for a period of one year.

(2) Roofing Felt

(a) On all boarding to be covered with slate, furnish and lay asphalt saturated rag felt, not less in weight than that commercially known as "30-lb." felt. In this weight, per 100 sq. ft., a tolerance of 1 lb. plus or minus will be allowed.
(b) Felt shall be laid in horizontal layers with joints lapped toward eaves and at ends at least 2 in. and well secured along laps and at ends as necessary to properly hold the felt in place and protect the structure until covered by the slate. All felt shall be preserved unbroken, tight and whole.
(c) The felt shall lap over all hips and ridges.
(d) Felt shall be lapped 2" over the metal of any valleys or built-in gutters.

(3) Slate

All slate shall be hard, dense, sound rock, machine punched fot two nails each. All exposed corners shall be practically full. No broken corners on covered ends which sacrifice nailing strength or the laying of a watertight roof will be allowed. No broken or cracked slates shall be used.

For Standard Thickness Roofing Slate

(a) Slate shall be of commercial standard thickness, Grade A, as furnished by O'Brien Bros. Slate Co., Inc., Granville, N. Y.
(b) State whether one standard length or graduated lengths and random widths.
(c) State whether one color, or the percentage of each color required.
(d) A certificate shall be furnished the roofing contractor by the quarrier certifying that the roofing slate furnished are in accordance with these specifications and/or approved layout.

For Graduated Slate Roof

(a) Slate shall be Grade A as furnished by O'Brien Bros. Slate Co., Inc., Granville, N. Y., machine punched fot two holes, and varying in thickness from .." at eave to .." at ridge; the percentage of each thickness to be respectively ..... The thicknesses shall be intetmingled in the various courses, modulating from the heavier and thicker slates in the lower courses of the roof to the thinner slates at the ridge, in such way and manner as will develop the best architectural effect. A detailed roof layout for the application of the slate shall be furnished by O'Brien Bros. Slate Co., Inc., Granville, N.Y., and approved by the architect before material is fabricated.
(b) All slate shall be in standard random widths graduated in length from .." at eave to .." at ridge, applied with standard 3" lap and exposures.
Add paragraphs (c) and (d) as listed under "Standard Thickness" specifications.

(4) Hips

(a) All hips shall be laid to form "saddle" hips without metal underneath. (Specify "Boston" or "Mitered" Hips if preferred.)

(5) Ridges

(a) All ridges shall be laid to form "saddle" ridges. The nails of the combing slate shall pass through the joints of the slates below.

(6) Valleys

(a) All valleys shall be laid to form "open" valleys.

(7) Elastic Cement

(a) Cement shall be an approved brand of waterproof elastic slaters' cement colored to match as nearly as possible the general color of the slate.

(8) Nails

(a) All slate shall be fastened with two large-head slaters' solid copper nails. Use 3d (1¼") nails for slates 18" or less in length, 4d (1½") for 20" or longer, and 6d (2") for slates on hips and ridges.

(9) Slating

(a) The entire surface of all main and porch roofs, the toofs and sides of any dormer windows, if shown, and all other surfaces so indicated on the drawings, shall be covered with slate in a proper and watertight manner.
(b) The slate shall project 2" at the eaves and 1" at all gable ends, and shall be laid in horizontal courses with the standard 3" head lap, and each course shall break joints with the preceding one. Slates at the eaves or cornice line shall be doubled and canted ¼" by a wooden cant strip.
(c) Slates overlapping sheet metal work shall have the nails so placed as to avoid puncturing the sheet metal. Exposed nails shall be permissible only in top courses where unavoidable.
(d) Neatly fit slate around any pipes, ventilators, etc.
(e) Nails shall not be driven in so far as to produce a strain on the slate.
(f) Cover all exposed nailheads with elastic cement. Hip slates and ridge slates shall be laid in elastic cement spread thickly over unexposed surface of undercourses of slate, nailed securely in place and pointed with elastic cement.
(g) Build in and place all flashing pieces furnished by the sheet metal contractor and co-operate with him in doing the work of flashing.
(h) On completion all slate must be sound, whole and clean, and the roof shall be left in every respect tight and a neat example of workmanship.

a few representative roofing installations

installation	location	architect
Salvage residence	Glen Head, L. I., N.Y.	Rager H. Bullard
bathhauses	Saratoga Springs, N.Y.	J. H. Freedlander
Central Islip State Haspital	Islip, L. I., N.Y.	William Haugaard
Euthenics Building, Vassar College	Poughkeepsie, N.Y.	York & Sawyer
Edsel Fard residence	Seal Harbar, Me.	Duncan Candler
Cannecticut Mutual Life Insurance Building	Hartfard, Cann.	Benjamin W. Marris

tennis court surfacing

Available in fine grade red or green in bags or in bulk. Coarse grade #11 in red or green color, oiled or not according to customer's wishes. About two tons coarse and one ton fine necessary to do a regulation size court.

slate flagstone

Vermont natural colored slate flagstone is the ideal material for terraces, walks, pools, auditoriums, flat roof surfaces, flooring, garages, etc.
Furnished in substantially the same colors, separately or collectively, as indicated for roofing slate. Most popular type is designated as "full range of colors including 5% of Red." The irregular units (sketch No. 6) are by far the more popular. Range about 1 to 4 square feet in area; ¾" to 1" thick—natural surfaces. Weight about 12 pounds per square foot. Sold by the "square" of 100 square feet. Random rectangles (sketch No. 4) also furnished; with machine trimmed or rough sawed edges. Can be laid out and diagrammed by quarrier for specified areas when required.

● Specifications

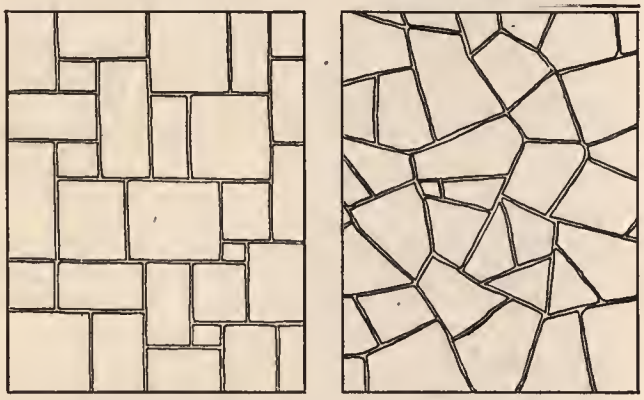
Random Irregular Flagstone

Flagstone to be No. 6 Grade A Vermont slate as supplied by O'Brien Bros. Slate Co., Inc., with natural surface in irregular shaped units ranging 1 to 4 square feet each—¾" to 1" thick in (a) full range of colors, i.e., greens, grays, purples and a percentage of red, or (b) (specify the color or range of color desired).

Random Rectangular Flagstone

Flagstone to be No. 4 Random Rectangular units furnished with natural surface. Colors shall be (a) Full range or (b) (specify the color or range of colors desired). Thicknesses shall be (a) ¾" to 1", or (b) ½". Edges shall be (a) machine trimmed or (b) rough sawed. For more formal treatment of No. 4 Random Rectangular slate, including interior floors, where a more selected installation is desired, specify as follows:
Flagstone in No. 4 Random Rectangular pattern to be laid out by quarrier to fit floor areas shown on drawings and furnished with sawed or rubbed edges. Surface shall be either (a) natural cleft or (b) sand rubbed.

run of quarry units of no specified size



No. 4 Random Rectangular — No. 6 Irregular

Slate to be cut to lay with ½" joints according to setting plan to be submitted by quarrier. Colors to be (a) full range or (b) as selected by the Architect.

● installation specifications for slate floors, terraces and walks

1. slate:

The contractor shall furnish and lay all slate for walks, floors and terraces listed below. Slate shall be (here specify color, thickness, surface, size when necessary, shape of pieces, style of edges and width of joints).

2. type of installation:

(*Note:* Specification writer may copy here only those paragraphs covering type of installation desired.)

(A) on soil with grass joints. (Soil or Turf Sub-bed.)
Mark out location of all walks and terraces to be laid with grass joints. If ground is not well settled, wet and tamp thoroughly. Fill any holes or depressions with thoroughly tamped soil. Lay slate directly on soil in (here specify arrangement and pattern). Each piece of slate shall rest on a solid, even bed with the top surface level.

(B) on soil with gross joints. (Cinder Sub-bed.)
Mark out location of all walks and terraces to be laid with slate with grass joints and excavate to a depth of eight to ten inches. Fill excavations with cinders from six to eight inches deep, well rolled and tamped to an even surface. On top of cinder bed place a two-inch layer of soil and on soil lay slate in (here specify arrangement and pattern). Fill all joints with soil to level of surface of slate and sow grass seed.

(C) laid in concrete on earth:
(*Note:* If experience in a given locality warrants greater depth, specification writer can change figures accordingly.)

(*a*) Mark out location of all walks and terraces to be laid with slate in concrete and excavate to a depth of ten inches. Fill excavation with cinders well rolled and tamped to within five inches of level desired.

(*b*) On cinder bed place a course of cinder concrete three inches deep. Follow at once with the setting mixture (three parts sand with one part of cement). As soon as this setting bed is leveled, sprinkle it with pure Portland Cement to make perfect bond between slate and setting bed and lay slate in (here specify arrangement and pattern). Thoroughly wet the pieces of slate as set and bed to desired level. Point all joints with concrete mixed two parts well sieved sand and one part cement.

3. cleaning slate:

(*Note:* Only required for slate floors with concrete mixture joints.)
Sponge all slate as set on exposed surface with clean water to remove mortar stains, and if necessary upon completion, rub down with a solution three parts coal oil and one of linseed oil. (If light or weak solution of muriatic acid is needed and used for cleaning, care should be taken to wipe only exposed slate surfaces to avoid acid eating out cement joints.)

4. completion:

Upon completion all slate shall be sound, whole and clean and the work shall be left smooth and in every respect a neat example of craftsmanship.

O'BRIEN BROTHERS SLATE CO., established 1901
main office: Granville, N. Y. — quarries: Pawlet, Vermont
(telephone: 185)

For all types of modern roofing construction . . .

Rising & Nelson

natural colored

VERMONT *roofing* **SLATE**

Dutch Village, Albany, N. Y.

RISING & NELSON SLATE CO., INC. • WEST PAWLET, VERMONT

introduction

Investigation has shown that the cost of the roof of any structure ought to bear a certain definite relation to the cost of the entire building—not only from the standpoint of protection, but also from appearance. Every permanent building should be roofed with a material which will give it lasting protection, and at the same time be in character with the house and its surroundings itself. Because it does possess these qualities, for centuries slate has been the criterion by which other roof coverings have been judged. A slate roof has that indefinable quality which distinguishes any object of real value. And, at the same time, completes the picture of a well constructed building or home.

advantages

- non-combustible-fireproof
- wide range of effects possible
  - appearance
    - color
    - surface texture
  - thickness
    - roof texture
- little or no maintenance cost
- resists climatic changes
- increases property values
- reduces insurance premiums
- waterproof
- high salvage value
- natural stone
- permanence

characteristics

The principal difference between slate and other stones is the natural slaty cleavage of the former which permits it to be more easily split in one direction than in the other. Slate quarried for roofing stock is of dense sound rock, exceedingly tough and durable. In the manufacturing of slate, nothing is added to or taken away from the natural stone. It is cut and trimmed mostly by hand labor into the most economical size and desired thickness. A slate roof is really a custom-made job, its ownership gives a feeling of pride and security.

application data

The orthodox method of application provides a double head lap of 3", the exposure being determined by deducting the lap (3") from the length of the slate and dividing the difference by 2. Thus a slate 18" in length should show an exposure of 7½" and undereave slate 11" long. The length of the eave slate is found by adding not less than 3" to the exposure of the regular slate.

The slate as quarried in the Rising & Nelson quarries, being a permanent roofing material should be properly applied by competent and reliable workmen, the most important detail being the maintenance of the 3" head lap throughout.

Standard thickness slate weighs only about seven pounds to the square foot of roof surface.

Any roof construction conforming to good engineering practice and suitable for other roofing material is adequate for standard slate. This fact should be fully recognized in the interest of truth, economy and conservation. The weight of the roof covering is an insignificant factor when compared with the combined weights of rafters, sheathing, snow, etc., and the water saturation of artificial roofing materials. Research conducted by the National Slate Association fully established the fact that any building strong enough for other types of roofing material is equally sufficient for standard thickness slate.

color

Semi-weathering Green and Gray: Frequently called Sea Green, it is the basic product of Rising & Nelson quarries and most widely known and used. Grayish green when first quarried, upon exposure to elements a percentage change to soft tones of buff and brown; the remainder retaining initial color. This gradual change serves to beautify the roof and in no way affects the durability of the slate. Interspersed in a mixed color roof, this slate will eliminate sharp contrasts and improve the blend immeasurably.

Variegated Purple: In this slate from Rising & Nelson quarries, the purple color predominates, part being clear purple, but some with green spots and shadings. Makes a handsome roof at a moderate price. Any thickness or gradation from 3/16" up.

Unfading Mottled Green and Purple: Consists of slightly varying shades of purple; some almost clear but usually mottled with green; others with green background mottled with purple. All blend in a soft and harmonious effect.

Mottled Gray Black: Vary in shade from clear light gray to tones of dark gray, created by dark stripes or streaks, some running vertically, others crosswise of the individual slates.

Unfading Green: One of the strong, fast colors. The shades vary somewhat from a light green to a dark emerald color.

All roofing slate described is guaranteed Grade A slate conforming to FEDERAL SPECIFICATION SS-S-451.

sizes

The foregoing colors can be furnished singly or in any desired percentage of each. Except as otherwise indicated, the average standard thickness is 3/16" for commercial types with smooth texture. Rough texture slates are available in intermingled thicknesses from 3/16" to 3/8".

A "square" is the standard measurement and is the number of pieces of any size required to cover one hundred square feet of roof surface, not including waste in cutting for hips, valleys, dormers, etc. For very steep roofs or siding where a 2" double head lap is sufficient, fewer slates are needed.

Many slates are being applied over artificial roofings which have succumbed to the ravages of time and the elements, thus converting semi-permanency into permanent roof protection.

The standard lengths are 24", 22", 18", 16", 14", 12", 10". For some years, architects have continued to favor the use of one length and random widths or graduated lengths and random widths. This avoids the multiplicity of uniform rectangular exposures and improves perspective. Any of the designated colors can be furnished in these thicknesses and estimated weights per square — 3/16" 700 to 800 lbs.; 1/4" 950; 3/8" 1400; 1/2" 1800; 3/4" 2500; 1" 3400.

specifications

(1) General and Guarantee

(a) The General Conditions of the contract are hereby made a part of the contract and the roofing contractor shall examine these General Conditions and thoroughly acquaint himself with all the requirements therein contained.

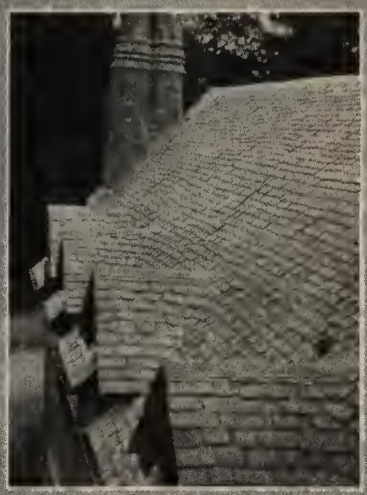
(b) This contractor shall furnish all materials and labor in accordance with the drawings and these specifications.

(c) This contractor shall inspect all surfaces prepared for slating by other trades, point out to the proper authorities all defects, and shall not proceed with the laying of slate, felt or flashings until corrections have been made.

(d) Roofing shall be applied by workmen experienced in the applying of slate.

(e) The roofing contractor shall furnish his own scaffold or rigging, or arrange with the general contractor for the use of scaffolds furnished by others.

(f) A written guarantee shall be furnished that the materials used are in strict accordance with these specifications, and that any and all repairs required on the roof due to defective materials or workmanship furnished under this contract shall be made without cost to the owner for a period of one year.



specifications *continued*

(2) Roofing Felt —

(a) On all boarding to be covered with slate, furnish and lay asphalt saturated rag felt, not less in weight than that commercially known as "30-lb." felt. In this weight, per 100 sq. ft., a tolerance of 1 lb. plus or minus will be allowed.

(b) Felt shall be laid in horizontal layers with joints lapped toward eaves and at ends at least 2" and well secured along laps and at ends as necessary to properly hold the felt in place and protect the structure until covered by the slate. All felt shall be preserved unbroken, tight and whole.

(c) The felt shall lap over all hips and ridges.

(d) Felt shall be lapped 2" over the metal of any valleys or built-in gutters.

(3) Slate —

All slate shall be hard, dense, sound rock, machine punched for two nails each. All exposed corners shall be practically full. No broken corners on covered ends which sacrifice nailing strength or the laying of a watertight roof will be allowed. No broken or cracked slates shall be used.

For Standard Thickness Roofing Slate (a) Slate shall be of commercial standard thickness, Grade A, as furnished by Rising & Nelson Slate Company.

(b) State whether one standard length or graduated lengths and random widths.

(c) State whether one color, or the percentage of each color required.

(d) A certificate shall be furnished the roofing contractor by the quarrier certifying that the roofing slate furnished are in accordance with these specifications and/or approved layout.

For Graduated Slate Roof (a) Slate shall be Grade A as furnished by Rising & Nelson Slate Company, machine punched for two holes, and varying in thickness from ....." at eave to ....." at ridge; the percentage of each thickness to be respectively ..... The thicknesses shall be intermingled in the various courses, modulating from the heavier and thicker slates in the lower courses of the roof to the thinner slates at the ridge in such a way and manner as will develop the best architectural effect. A detailed roof layout for the application of the slate shall be furnished by the quarriers and approved by the architect before material is fabricated.

(b) All slate shall be in standard random widths graduated in length from ....." at eave to ....." at ridge, applied with standard 3" lap and exposures. Add paragraphs (c) and (d) as listed under "Standard Thickness" specifications.

(4) Hips —

(a) All hips shall be to form "saddle" hips without metal underneath. (Specify "Boston" or "Mitered" Hips if preferred.)

(5) Ridges —

(a) All ridges shall be laid to form "saddle" ridges. The nails of the combing slate shall pass through the joints of the slates below.

(6) Valleys —

(a) All valleys shall be laid to form "open" valleys.

(7) Elastic Cement —

(a) Cement shall be an approved brand of waterproof elastic slaters' cement colored to match as nearly as possible the general color of the slate.

(8) Nails —

(a) All slate shall be fastened with two large-head slaters' solid copper nails. Use 3d (1¼") nails for slates 18" or less in length, 4d (1½") for 20" or longer, and 6d (2") for slates on hips and ridges.

(9) Slating —

(a) The entire surface of all main and porch roofs, the roofs and sides of any dormer window, if shown, and all other surfaces so indicated on the drawings, shall be covered with slate in a proper and watertight manner.

(b) The slate shall project 2" at the eaves and 1" at all gable ends, and shall be laid in horizontal courses with the standard 3" head lap, and each course shall break joints with the preceding one. Slates at the eaves or cornice line shall be doubled and canted ¼" by a wooden cant strip.

(c) Slates overlapping sheet metal work shall have the nails so placed as to avoid puncturing the sheet metal. Exposed nails shall be permissible only in top courses where unavoidable.

(d) Neatly fit slate around any pipes, ventilators, etc.

(e) Nails shall not be driven in so far as to produce a strain on the slate.

(f) Cover all exposed nailheads with elastic cement spread thickly over exposed surface of undercourses of slate, nailed securely in place and pointed with elastic cement.

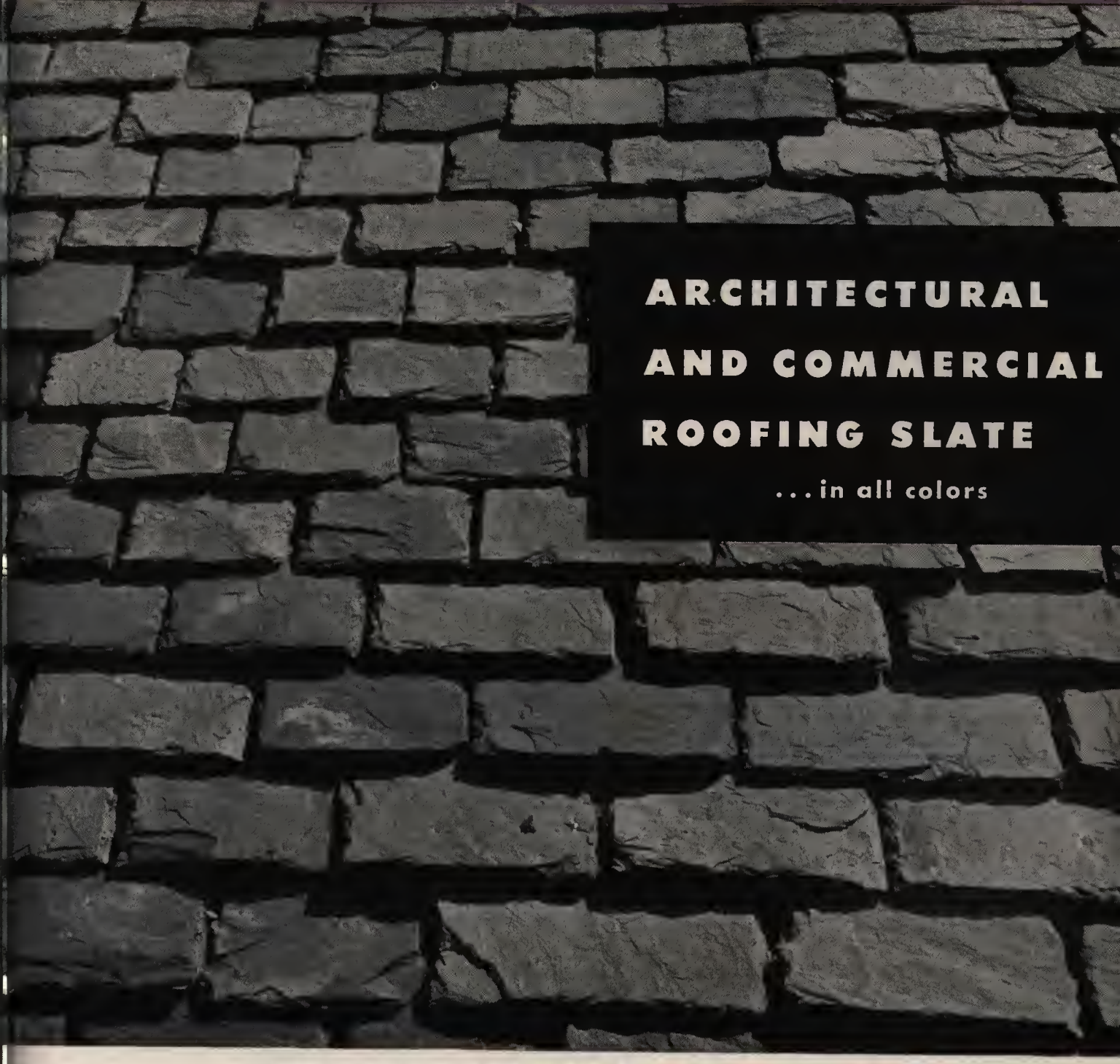
(g) Build in and place all flashing pieces furnished by the sheet metal contractor and co-operate with him in doing the work of the flashing.

(h) On completion all slate must be sound, whole and clean, and the roof shall be left in every respect tight and a neat example of workmanship.

Natural Colored Slate Flagstone

Furnished in irregular and rectangular shapes in substantially the same colors, separately or collectively, as indicated for roofing slate. Most popular types is designated as "full range of colors including percentage of Red." The irregular units are by far the most popular. Range about 1 to 4 square feet in area; 3/4" to 1" thick —natural surfaces. Weight about 12 pounds per square foot. Sold by the "square" of 100 square feet. Random rectangles also furnished; with machine trimmed edges. Can be laid out and diagrammed by quarrier for specified areas when required.

RISING & NELSON SLATE COMPANY • WEST PAWLET, VERMONT



● Close up section of Architectural roof in mixed colors—graduated thicknesses ¾" to ½" and varying exposures.

Yorkmont facilities

With its subsidiaries, YORKMONT ranks as major quarriers and shippers of all types, sizes and colors of Vermont-New York natural colored roofing slates. Quarries and assembling yards in Poultney, Wells and Pawlet, Vt. and Washington County, N. Y. Private railroad siding at shipping depot No. 5, Granville, N. Y. Truckload deliveries can be made within a radius of 250 miles from Granville.

Natural colored slate is but one of few commodities of which it can be accurately stated that, regardless of economic conditions, their time tested intrinsic merit remains unchanged to "survive the ages." They will never disintegrate. Will always justify the investment.

Architectural service

Layouts for graduated slate roofs, samples and all desired information, general or technical, relating to any of our products will be promptly furnished on receipt of architect's plans or inquiries.

With justifiable confidence architects may safely omit the "or equal" clause in specifying YORKMONT and request our certificate of compliance.

Executive staff includes the special services of a consultant with more than half a century of experience with every phase of the Vermont-New York slate industry; insuring distinctive performance in connection with all commissions entrusted to us.

YORKMONT SLATE SURVIVES THE AGES

YORKMONT SLATE COMPANY, INC.

Slate Has Been Used by All Civilizations

All civilizations have used SLATE. Roman buildings in Britain had slate roofs. Ancient castles were roofed with slate. The slate roof on an English chapel at Bradford on Avon is more than 1200 years old. There is also a recorded slate roof in America that has covered six buildings after nearly 200 years of service. Colored slate is truly the "Methuselah" of roofing materials.

The Vermont-New York colored slate belt extends northeast to southwest some 35 miles, from West Castleton, Vt. to Salem, N. Y. in what is known as the Taconic range between the Adirondacks and Green Mountains, the overall width being about 1 mile. Present operations are located at Fair Haven, Poultney, Wells, Pawlet and West Pawlet, Vt. and Granville, N. Y. Some of the larger quarries are from 100 to 200 ft. in depth.

The overburden varies from 10 ft. to 40 or 50 ft. In some quarries the slate beds are all of one color and type. In others, one or more colors are produced from the same quarry, either all Semi-weathering or all Unfading.

The slate rock is blasted out in large slabs weighing up to 2 tons and conveyed over cableways to the slate making cabins. There, with jack hammers and/or saws they are reduced to blocks of suitable dimensions which are split into slate and trimmed to size.

Nowhere else in the United States has slate been found in such an array of natural colors providing a selection for every individual requirement. Composed of about 60% silica, they will never disintegrate. Admixtures of sundry oxides and dioxides in greater or lesser degree account for variations in color.

YORKMONT

Standard Colors

Semi-Weathering Green and Gray—Frequently called Sea Green, is the basic product of Vermont quarries and most widely known and used. Grayish green when first quarried, upon exposure to elements, a percentage (varying according to prevailing climatic conditions where installed) change to soft tones of buff and brown; the remainder retaining initial color. This gradual change serves to beautify the roof and in no way affects the durability of the slate. Interspersed in a mixed color roof, this slate will eliminate sharp contrasts and improve the blend immeasurably.

Unfading Clear Gray Green — Of permanent color but become uniformly "greener" on exposure.

Unfading Mottled Gray Green—Presents a grayish green background with promiscuous clouds or spots of mottling in dark, medium and light modulations, not very conspicuous when applied—endowed with more character than Unfading types of Green or Gray slates.

Unfading Mottled Green and Purple—More frequently called Mottled Purple. Consists of slightly varying shades of purple; some almost clear but usually mottled with green; others with green background mottled with purple. Usually furnished in full color range.

Unfading Cardinal Red—Color permanent. Is produced nowhere else than in Washington County, N. Y. Used either singly or in a mixed color roof. Production cost is higher than for other colors.

Vermont Gray Black—Vary in shade from dark gray to black. Intermingled thicknesses ¼ in. to ⅜ in. Production is limited but usually sufficient in quantity to enhance the general appearance of a mixed color roof.

Freaks—the Unusual—Black, also Green and Mottled Gray background, with natural rust, bronze and gold imprints of varying size. Average ¼ in. to ⅜ in. in thickness. 15% to 20% will prove a unique addition to a multi-colored roof. Production limited.

Partial List of Projects Using

Projects	*Color and Type*	*Architects*
Cafeteria Building, College of New Rochelle, New Rochelle, N. Y.	127 squares Unfading Mottled Green & Purple	Voorhis, Walker, Foley & Smith
Peterson Hospital, Craig Colony, Sonyea, N. Y.	64 squares Unfading Mottled Gray Green	New York State Architect
Sacred Heart of Mary Academy, Sag Harbor, L. I., N. Y.	110 squares Pheasants & Semi-Weathering Green & Gray	W. J. Boegel
New Nurses Hall, Reading Hospital, Reading, Pa.	144 squares Type Y2	Gilbert Associates, Inc.
Raybrook State Hospital, Raybrook, N. Y.	400 squares Unfading Mottled Gray Green	New York State Architect
Field House, Trinity College, Hartford, Conn.	270 squares Type Y6	McKim, Mead & White
Seaman Avenue School, Freeport, L. I., N. Y.	270 squares Type Y6	Frederic P. Wiedersum
Residence Hall for Women, Western State Teachers College, Bowling Green, Ky.	93 squares Type Y6	J. M. Ingrim & John F. Wilson
Hospital Building, Apple Creek State School, Apple Creek, Ohio	426 squares Unfading Mottled Green & Purple	Joseph A. Gattozzi
Fairfield Prep School, Fairfield, Conn.	125 squares Type Y3	Fletcher Thompson, Inc.
Mechanical Engineering Building, University of Buffalo, Buffalo, N. Y.	72 squares Unfading Mottled Gray Green	Green & James

Yorkmont Slate Survives the Ages

ROOFING SLATE

Typical Color Combinations Favored by Architects

Y 1

30% Semi-Weathering Green & Gray
30% Unfading Mottled Gray Green
20% Unfading Mottled Purple
10% Vermont Black
10% Red

Y 2

50% Unfading Mottled Gray Green
20% Semi-Weathering Green & Gray
10% Unfading Mottled Purple
10% Vermont Black
10% Green Freaks

Y 3*

70% Semi-Weathering Green & Gray
30% Unfading Purple & Unfading Mottled Purple

Y 4

50% Semi-Weathering Green & Gray
10% Unfading Mottled Gray Green
20% Unfading Mottled Purple
20% Black & Green Freaks

Y 5

20% Semi-Weathering Green & Gray
20% Unfading Mottled Gray Green
20% Unfading Purple & Mottled Purple
20% Vermont Gray Black
15% Green Freaks
5% Red

Y 6

40% Clear Unfading Gray Green
20% Semi-Weathering Green
40% Unfading Mottled Purple

Any combination of Unfading slates, i.e., Unfading Greens & Grays with Purples or Mottled Purples, creates sharp contrasts and more or less of a checkerboard effect. This can be avoided by the intermingling of a percentage, say 25%, of the Semi-Weathering Greens and Grays which will mellow and soften the enmasse effect.

★ Based on sales records over an extended period, Type Y3 appears to be one of the most popular types of colored slate roofs favored by many architects. It is an intermingling of 70% Semi-Weathering Greens & Grays with 30% Unfading Purples and Unfading Mottled Purples. The matured effect might be described as simulating "heather."

Standard Thicknesses

Type A—Standard thickness slate—one color or mixed colors, average 3/16 in. to 1/4 in. thickness. Weight, 700 to 800 lbs. per square. Take base price.

Type B—Combination of smooth and rough texture material, one or more colors, as preferred. Intermingled thicknesses 3/16 in. to 3/8 in. Average weight, 1000 lbs. per square. F.O.B. quarry, price about 10% more than Type A.

Type C—Same as Type B, but with a suitable addition of 1/2 in. thickness. Estimated weight, about 1200 lbs. per square. F.O.B. quarry, price about 20% more than Type A.

Type D—Same as Type B, with addition of 3/4 in. thickness. Average weight, about 1400 lbs. per square. F.O.B. quarry, price about 33⅓% more than Type A.

It is more or less generally conceded that intermingled thicknesses applied promiscuously over roof surface develops a preferable and economical architectural type of roof. Avoids lines of demarcation resulting from specified courses when graduated from thickest slate at eaves to thinner slates at ridge.

Schedule of Standard Sizes

Length of Slate	Widths	Exposure	Length of Under Eave
24″	12″ to 16″	10½″	14″
22″	11″ to 16″	9½″	13″
20″	10″ to 16″	8½″	12″
18″	9″ to 14″	7½″	11″
16″	8″ to 14″	6½″	10″
14″	7″ to 14″	5½″	9″
12″	6″ to 12″	4½″	8″
10″	6″ to 10″	3½″	7″

Slates longer than 24″ should not be less than full 1/4″ thick or narrower than half the length.

Nail Holes

Nail holes are machine punched and countersunk as recommended and approved by the United States Bureau of Standards.

Simplified Form of Specification for Yorkmont Roofing Slate

Slate shall be Grade A as furnished by Yorkmont Slate Co., Inc., Granville, New York.

State whether one standard length and random widths, or graduated lengths and random widths.

For thickness, state whether Type A, B, C or D, or otherwise.

For color, state whether Type 1 to 6, or otherwise.

A certificate shall be furnished the roofing contractor certifying that the roofing slate furnished are in accordance with specifications and/or approved layout.

YORKMONT ROOFING SLATE

Projects	*Color and Type*	*Architects*
St. Mary of Sorrows Church, Buffalo, N. Y.	67 squares Unfading Mottled Gray Green	Karl & Wm. Schmill
Women's & Men's Dormitories, Illinois Wesleyan University, Bloomington, Ill.	172 squares Unfading Mottled Gray Green	Poundstone, Ayers & Godwin, Architects; Schaeffer, Hooton & Wilson, Ass't Architects
G. Kaplan's Residence, Harrisburg, Pa.	46 squares Type Y3	Wm. L. Murray
3 Buildings at Dennison University, Granville, Ohio.	245 squares Unfading Green & Unfading Mottled Green & Purple	Wm. Gehron
3 Buildings at Michigan State College, East Lansing, Mich.	368 squares Unfading Mottled Green & Purple.	O. J. Munson
Addition to Bethany House, Bethany College, Bethany, W. Va.	100 squares Type Y6	The Thayer Co. Architects
Gaston Avenue Baptist Church, Dallas, Tex.	108 squares Semi-Weathering Green & Gray Green	Mark Lemmon
St. Michaels College, Burlington, Vt.	135 squares Unfading Mottled Gray Green	Freeman, French & Freeman

YORKMONT SLATE FLAGGING

Natural Colored Slate Flagging

Colored slate flagstones last indefinitely and are easily installed. Specifications will be furnished on request for varying sub-surface conditions.

For walks, terraces, flat roof surfaces, interior floors, etc., a touch of charm is added to a residence or public building at a decidedly nominal investment.

Basic colors include a range of greens, grays and purples with a percentage of Cardinal red. Furnished singly or in combination.

The irregular shaped units ¾ in. to 1 in. thick, with natural surface—weighing about 10 lbs. per square foot are more generally used. Vary in size from 1 to 4 sq. ft. Suitable for setting either in cement or turf. ⅜ in. to ½ in. thickness weighing about 8 lbs. per square foot is sufficient for a cement installation.

Random rectangles are used more especially for formal effect. Same range of colors and thickness, but cost substantially more than the irregular units. Can be:

A. Natural face and sawed edges.
B. Sand rubbed face and sawed edges.
C. Machine chamfered edges.

When desired, material can be laid out and fitted by quarriers with each unit numbered to correspond to a detailed setting plan.

Suggested Specifications for Flagstone Terraces and Walks

Slate

The contractor shall furnish and lay all slate for walks and terraces listed below. Slate shall be (here specify color, thickness, surface, size when necessary, shape of pieces, style of edges and widths of joints).

Type of Installation

On Soil with Grass Joints (Soil or Turf Sub-bed)—Mark out location of all walks and terraces to be laid with grass joints. If ground is not well settled, wet and tamp thoroughly. Fill any holes or depressions with thoroughly tamped soil. Lay slate directly on soil (here specify arrangement and pattern). Each piece of slate shall rest on a solid, even bed with the top surface level.

On Soil with Grass Joints (Cinder Sub-bed)—Mark out location of all walks and terraces to be laid with slate with grass joints and excavate to a depth of 8 to 10 in. Fill excavations with cinders from 6 to 8 in. deep, well rolled and tamped to an even surface. On top of cinder bed place a 2-in. layer of soil and on soil lay slate in (here specify arrangement and pattern). Fill all joints with soil to level of surface and sow grass seed.

Laid in Concrete on Earth—
(Note: If experience in a given locality warrants greater depth, specification writer can change figures accordingly.)
(a) Mark out location of all walks and terraces to be laid with slate in concrete and excavate to a depth of 10 in. Fill excavation with cinders well rolled and tamped to within 5 in. of level desired. (b) On cinder bed place a course of cinder concrete 3 in. deep. Follow at once with the setting mixture (three parts sand with one part of cement). As soon as this setting bed is leveled, sprinkle it with pure Portland cement to make perfect bond between slate and setting bed and lay slate in (here specify arrangement and pattern). Thoroughly wet the pieces of slate as set and bed to desired level. Point all joints with concrete mixed two parts well sieved sand and one part cement.

SPECIALTIES

Redkote Tennis Court Surfacing

Redkote is a fast-drying tennis court surfacing of pulverized natural slate, fast color, of a soft shade of red. It is economical and easy to apply on a clay, sand or dirt base. (Write for specifications.) Redkote is unaffected by extreme heat or severe cold. It eliminates glare, and provides a surface that is non-slip, true-bounce and resilient. It is equally adaptable to badminton, handball or volleyball courts; sprinting tracks, sand traps, and golf tees.

Redkote Mixtures—Redkote comes in two grades:

"F" *(Fine)* for usual court surfaces—a tested admixture of fine, medium and some coarse particles.
"C" *(Coarse)* for those who desire a "grass-court" type of bounce.

Redkote Requirements—About 5 tons of Redkote Surfacing are required for a standard court 60 ft. x 120 ft. Approximately two drums (400-600 lbs.) of flake calcium chloride are desirable per season—one drum mixed at the beginning of the season; the other used as conditions require. No wetting of the Redkote is necessary.

OTHER SPECIALTIES

Other Yorkmont Specialties include dimension tile; slate treads, risers, base, border and wall copings; radiator tops, etc., in Unfading Green and/or Unfading Purple or Unfading Mottled Green & Purple.

YORKMONT SLATE COMPANY, INC.

MAIN OFFICE

Telephone Building, GRANVILLE, N. Y. *Phone: 40*

specifications for

Carey

built-up roofs

1949

THE *Carey* ROOFINDER INDEX

THIS index will enable the architect to select the proper type of built-up roofing to meet existing conditions. He can read across from known factors of deck types, bond, surface and incline, to the specification number for a roof meeting the known requirements, and the page on which the specification appears.

BONDS—All Philip Carey Manufacturing Company Built-Up Roofs applied according to specifications shown herein when desired, will be covered by Guaranty Bonds of The Fidelity & Casualty Co. of New York if applied by Carey approved roofers. No roofing bonds are issued for roofs applied on the Pacific Coast, including the states of Arizona and Utah.

DECK	YEARS	SURFACE	INCLINE	CONSTRUCTION	UNDERWRITERS' LABORATORIES INC. RATING	SPEC. NO.	PAGE NO.
WOOD or PRECAST GYPSUM	20-YEAR	Slag or Gravel	Level to 3 in. per ft. Level to 2 in. per ft.	Asphalt and Feltex Coal Tar Pitch and Careyseal	Class "A" Class "A"	1-A 1-B	3
		Smooth Asphalt	½ in. to 6 in. per ft. ½ in. to 6 in. per ft.	Asphalt Fiberock, and Carey Rockfelt Asphalt, Colcap and Carey Rockfelt	Class "C" Class "C"	9-A 9-C	9
	15-YEAR	Slag or Gravel	Level to 3 in. per ft. Level to 2 in. per ft.	Asphalt and Feltex Coal Tar Pitch and Careyseal	Class "A" Class "A"	2-A 2-B	4
		Mineral Surfaced Cap Sheet	2 in. to 12 in. per ft.	Asphalt and Feltex	Class "C"	6-AC	8
		Smooth Asphalt	½ in. to 6 in. per ft.	Asphalt Colcap and Carey Rockfelt	Class "C"	10-A	10
	10-YEAR	Mineral Surfaced Cap Sheet	2 in. to 12 in. per ft.	Asphalt and Feltex	Class "C"	5-AB	8
		Smooth Asphalt	½ in. to 6 in. per ft.	Asphalt and Feltex Asphalt, Feltex and Carey Rockfelt	Class "C" Class "C"	10-B 10-C	10
CAREY THERMO-BORD, CONCRETE, INSULATED STEEL, POURED GYPSUM, or INSULATED DECK	20-YEAR	Slag or Gravel	Level to 3 in. per ft. Level to 2 in. per ft.	Asphalt and Feltex Coal Tar Pitch and Careyseal	Class "A" Class "A"	3-A 3-B	5
		Smooth Asphalt	½ in. to 6 in. per ft.	Asphalt, Fiberock and Carey Rockfelt	Class "C"	11-A	11
	15-YEAR	Slag or Gravel	Level to 3 in. per ft. Level to 2 in. per ft.	Asphalt and Feltex Coal Tar Pitch and Careyseal	Class "A" Class "A"	4-A 4-B	7
		Smooth Asphalt	½ in. to 6 in. per ft.	Asphalt and Carey Rockfelt Asphalt, Fiberock and Carey Rockfelt	Class "C" Class "C"	11-C 12-A	11 12
	10-YEAR	Smooth Asphalt	½ in. to 6 in. per ft.	Asphalt and Feltex Asphalt, Feltex and Carey Rockfelt	Class "C" Class "C"	12-B 12-C	12
SPRAY POND ROOFS							
CONCRETE, POURED GYPSUM, PRECAST CONCRETE SLAB	10-YEAR	Double Slag or Gravel	Level to 1 in. per ft. Level to 1 in. per ft.	Asphalt and Feltex Coal Tar Pitch and Careyseal	Class "A" Class "A"	3-AS 3-BS	6
PROMENADE TILE DECK							
POURED CONCRETE	10-YEAR	Promenade Tile	Level to 1 in. per ft. Level to 1 in. per ft.	Asphalt and Feltex Coal Tar Pitch and Careyseal	Class "A" Class "A"	PR-1A PR-1B	13
COLD PROCESS BUILT-UP							
WOOD or PRECAST GYPSUM	15-YEAR	Slag or Gravel	Level to 3 in. per ft.	Asphalt Cement and Colcap	Class "A"	AC-1	14
		Smooth Coating	¾ in. to 5 in. per ft.	Asphalt Cement and Fiberock	Class "A"	AS-1	16
	10-YEAR	Smooth Coating	¾ in. to 5 in. per ft.	Asphalt Cement and Fiberock	Class "B"	BS-1	18
	5-YEAR	Smooth Coating	¾ in. to 5 in. per ft.	Asphalt Cement and Colcap	Class "C"	CS-1	20
CAREY THERMO-BORD, INSULATED STEEL or CONCRETE	15-YEAR	Slag or Gravel	Level to 3 in. per ft.	Asphalt Cement and Colcap	Class "A"	AC-2	15
		Smooth Coating	¾ in. to 5 in. per ft.	Asphalt Cement and Fiberock	Class "A"	AS-2	17
	10-YEAR	Smooth Coating	¾ in. to 5 in. per ft.	Asphalt Cement and Fiberock	Class "B"	BS-2	19
	5-YEAR	Smooth Coating	¾ in. to 5 in. per ft.	Asphalt Cement and Colcap	Class "C"	CS-2	21

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SPECIFICATIONS FOR Carey 20-YEAR ROOFS

OVER WOOD OR PRECAST GYPSUM DECKS

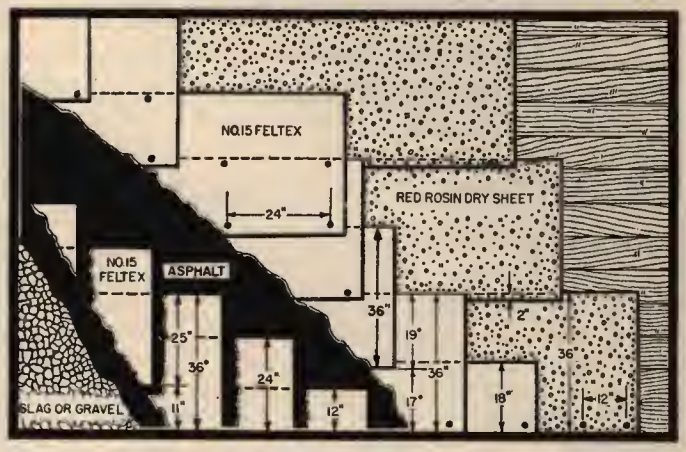
(Slag or Gravel Surface)

SPECIFICATION No. 1-A

CONSTRUCTION: Asphalt and Asphalt Rag Felt
INCLINE: Level to 3 in. per ft.
SURFACE: Slag or Gravel
Underwriters' Laboratories Class "A" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

Paper: 1 Ply—Red Rosin Dry Sheet
Felt: 5 Plies—No. 15 Feltex (Perforated)
Asphalt: 125 lb. Carey Manco Asphalt
Surface: Slag—300 lb.
Gravel—400 lb.



DECK SURFACES

Wood Deck—Before these Built-up Roofing Specifications are applied the deck shall be covered with Red Rosin Dry Sheet or Sub Grade Felt, Polar Brand Sheathing or a substitute of similar nature, same to be lapped approximately 2 in. and secured to the deck by occasional nailing.

Nails to be used in securing the Built-up Roofing Specification in the manner described under "Application" shall be either 1-in. roofing nails driven through flat tin caps, or 1-in. "Simplex" nails.

Gypsum Decks—Gypsum decks must be thoroughly dry prior to application of roofing. The Red Rosin Dry Sheet or a substitute of a similar nature is required on pre-cast gypsum decks. Base sheets should be secured to gypsum decks by use of "Viking" or approved staples through tin caps instead of nails.

APPLICATION

The felts used in the construction of the roof shall be 36 in. wide. The first two sheets shall be laid dry, lapped 19 in., leaving 17 in. exposed, and be secured to the deck by occasional nailing. To the surface thus provided a mopping of asphalt shall be applied into which, while hot, shall be embedded three sheets of felt, each sheet to overlap the previous sheet 25 in., leaving 11 in. exposed. Solid moppings of asphalt shall be applied between the plies of this three-ply construction so that at no point shall felt touch felt.

To the top surface of this construction a flood coat of hot asphalt shall be poured from a dipper and not less than 50 lb. shall be used to cover 100 sq. ft. of roof surface. Into this top flood coat of asphalt, while hot, slag or gravel shall be embedded. Asphalt shall not be heated over 450° F. See note at bottom of page.

APPLICATION OF SPECIFICATION No. 1-A, INCLINES 1½ IN. TO 3 IN. PER FT. (ASPHALT ONLY)

In applying this specification on wood or precast gypsum decks having a slope greater than 1½ in. per ft. and not exceeding 3 in. per ft., the top three plies shall be nailed at a point 6 in. from the back edge of each sheet as same is embedded in the hot asphalt.

Nails to be spaced on approximately 8-in. centers and felt to be laid at right angles to the slope of the roof.

Carey Steep Manco Asphalt shall be used throughout.

SPECIFICATION No. 1-B—COAL TAR PITCH AND TARRED RAG FELT

INCLINE: Level to 2 in. per ft.
Underwriters' Laboratories Class "A" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

Paper: 1 Ply—Red Rosin Dry Sheet
Felt: 5 Plies—No. 15 Careyseal Tar Rag Felt
Pitch: 150 lb. (approved type)
Surface: Slag—300 lb.
Gravel—400 lb.

DECK SURFACES

(Same as Specification No. 1-A, above)

APPLICATION

Felts used to be 36 in. wide. Application same as Specification 1-A above. (Except tarred felt and tar pitch used.)

Note: Carey Manco Asphalt should not be heated over 450° F.; this precaution will avoid damage to the asphalt. In special cases, such as in cold weather or if there is an unavoidable long distance from the kettle to the place of application of the asphalt to the roof, the asphalt may be heated to 475° F., but should not be held at this temperature longer than one hour. These temperatures should be taken with an accurate armored mercury thermometer.

SPECIFICATIONS FOR Carey 15-YEAR ROOFS

OVER WOOD OR PRECAST GYPSUM DECKS

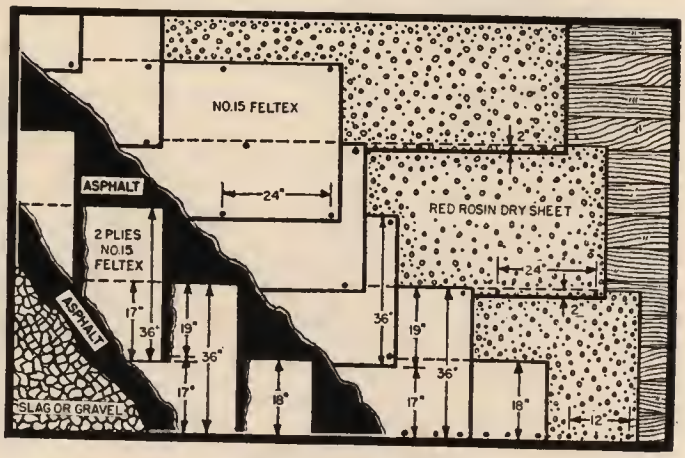
(Slag or Gravel Surface)

SPECIFICATION No. 2-A

CONSTRUCTION: Asphalt and Asphalt Rag Felt
INCLINE: Level to 3 in. per ft.
SURFACE: Gravel or Slag
Underwriters' Laboratories Class "A" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

Paper: 1 Ply—Red Rosin Dry Sheet
Felt: 4 Plies—No. 15 Feltex (Perforated)
Asphalt: 100 lb. Carey Manco Asphalt
Surface: Slag—300 lb.
Gravel—400 lb.



DECK SURFACES

Wood Deck—Before these Built-up Roofing Specifications are applied the decks shall be covered with Red Rosin Dry Sheet or Sub Grade Felt, Polar Brand Sheathing or a substitute of similar nature, same to be lapped approximately 2 in. and secured to the deck by occasional nailing.

Nails to be used in securing the Built-up Roofing Specifications in the manner described under "Application" shall be either 1-in. roofing nails driven through flat tin caps or 1-in. "Simplex" nails.

Gypsum Decks—Gypsum decks must be thoroughly dry prior to application of roofing. The Red Rosin Dry Sheet or a substitute of a similar nature is required on pre-cast gypsum decks. Base sheets should be secured to gypsum decks by use of "Viking" or approved staples through tin caps instead of nails.

APPLICATION

The Feltex used in the construction of this roof shall be 36 in. wide. The first two sheets shall be laid dry, lapped 19 in., leaving 17 in. exposed, and be secured to the deck by occasional nailing. To the surface thus provided a solid mopping of asphalt shall be applied, into which, while hot, shall be embedded two sheets of felt, each sheet to overlap the previous sheet 19 in., leaving 17 in. exposed. Solid moppings of asphalt shall be applied between the two top plies, so that at no point shall felt touch felt. To the top surface of this construction a flood coat of asphalt shall be poured from a dipper and not less than 50 lb. shall be used to cover 100 sq. ft. of roof surface. Into this top flood coat of asphalt, while hot, slag or gravel shall be embedded. Asphalt shall not be heated over 450° F. See note at bottom page 3.

APPLICATION OF SPECIFICATION No. 2-A, INCLINES 1½ IN. TO 3 IN. PER FT. (ASPHALT ONLY)

In applying this specification on wood or pre-cast gypsum decks having a slope greater than 1½ in. per ft. and not exceeding 3 in. per ft., the top two plies shall be nailed at a point 1½ in. from the back edge of each sheet as same is embedded in the hot asphalt. Nails to be spaced on approximately 8-in. centers and felt to be laid at right angles to the slope of the roof.

Carey Steep Manco Asphalt shall be used throughout.

SPECIFICATION No. 2-B—COAL TAR PITCH AND TARRED RAG FELT

INCLINE: Level to 2 in. per ft.
Underwriters' Laboratories Class "A" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

Paper: 1 Ply—Red Rosin Dry Sheet
Felt: 4 Plies—No. 15 Careyseal Tar Rag Felt
Pitch: 125 lb. (approved type)
Surface: Slag—300 lb.
Gravel—400 lb.

DECK SURFACES

(Same as Specification No. 2-A, above)

APPLICATION

Felts used to be 36 in. wide. Application same as Specification No. 2-A above. (Except tarred felt and tar pitch used.)

For application of Insulation, see page 27

SPECIFICATIONS FOR Carey 20-YEAR ROOFS

OVER CAREY THERMO-BORD DECK, CONCRETE, STEEL, POURED GYPSUM OR INSULATED DECKS

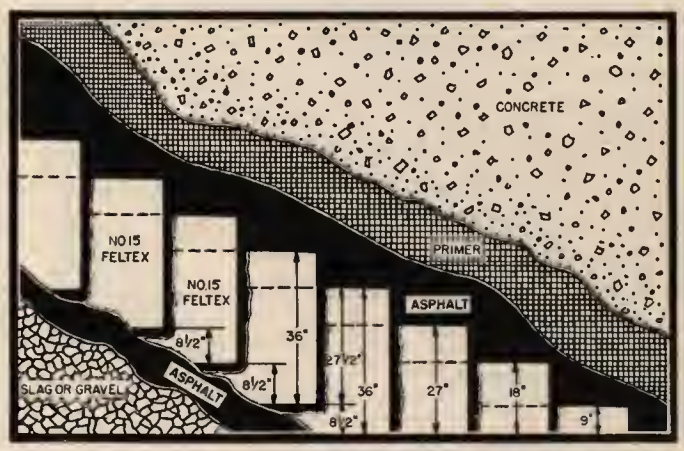
(Slag or Gravel Surface)

SPECIFICATION No. 3-A

CONSTRUCTION: Asphalt and Asphalt Rag Felt
INCLINE: Level to 3 in. per ft.
SURFACE: Slag or Gravel
Underwriters' Laboratories Class "A" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

Primer: 1 gal.
Felt: 5 Plies—No. 15 Feltex (Perforated)
Asphalt: 165 lb. Carey Manco Asphalt
Surface: Slag—300 lb.
Gravel—400 lb.



DECK SURFACES

Before roofing is applied deck must be thoroughly dry and free from frost, loose sand or debris. All low spots or depressions removed to provide satisfactory drainage.

Carey Insulated Deck, concrete and all cement surfaced decks must be primed with asphalt primer before applying hot asphalt.

Gypsum—Gypsum decks must be thoroughly dry prior to application of roofing. Primer not required but to assure proper adhesion of the roofing to gypsum, even though spot or strip mopped, the first ply should be back-nailed with "Viking" or approved staples through tin caps.

Steel—Before roofing is applied all steel decks must first be covered with two plies of No. 15 Feltex applying same in shingle construction lapping each sheet 19 in. and mopping between felts so that at no place shall felt touch felt. Over this vapor barrier a layer of approved roof insulation at least ½ in. thick must be applied with hot asphalt.

APPLICATION

The Feltex used in the construction of this roof shall be 36 in. wide. The roof surface shall first be mopped with a heavy coating of asphalt into which, while hot, shall be applied four layers of felt mopped solid between the sheets so that at no point shall felt touch felt, each sheet to overlap the previous sheet 27½ in., leaving 8½ in. exposed. To the top surface of this construction, a flood coat of asphalt shall be poured from a dipper and not less than 50 lb. shall be used to cover 100 sq. ft. of roof surface. Into this top flood coat of asphalt, while hot, slag or gravel shall be embedded. Carey Asphalt used in construction of the roof shall not be heated over 450° F. See note at bottom page 3.

APPLICATION OF SPECIFICATION No. 3-A, INCLINES 1½ IN. TO 3 IN. PER FT. (ASPHALT ONLY)

In applying this specification on a concrete deck having a slope greater than 1½ in. per ft. and not exceeding 3 in. per ft., wooden nailing strips shall be provided spaced not greater than 3 ft. on centers, if concrete deck will not allow for nailing. Wooden nailing strips, when provided, shall be laid parallel to slope of deck.

All sheets of felt shall be laid at right angles to the slope of deck and each sheet nailed 9 in. from the back edge with 1-in. roofing nails driven through flat tin caps or 1-in. "Simplex" Nails, all nails to be spaced on 1-ft. centers.

If wooden nailing strips are provided two nails are to be used at each nailing point, one nail to be 9 in. from back edge of sheet and one to be 7 in. from back edge of sheet.

Carey Steep Manco Asphalt shall be used throughout.

SPECIFICATION No. 3-B—COAL TAR PITCH AND TARRED RAG FELT

INCLINE: Level to 2 in. per ft.
Underwriters' Laboratories Class "A" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

Felt: 4 Plies—No. 15 Careyseal Tar Rag Felt
Pitch: 200 lb. (approved type)
Surface: Slag—300 lb.
Gravel—400 lb.

DECK SURFACES

(Same as Specification No. 3-A, above.)

APPLICATION

Felts used to be 36 in. wide. Application same as Specification No. 3-A above. (Except tarred felt and tar pitch used.)
Primer not required with tar pitch construction.

For application of Insulation, see page 27

SPECIFICATIONS FOR Carey 10-YEAR SPRAY POND ROOFS

OVER CONCRETE, POURED GYPSUM AND PRECAST CONCRETE SLAB

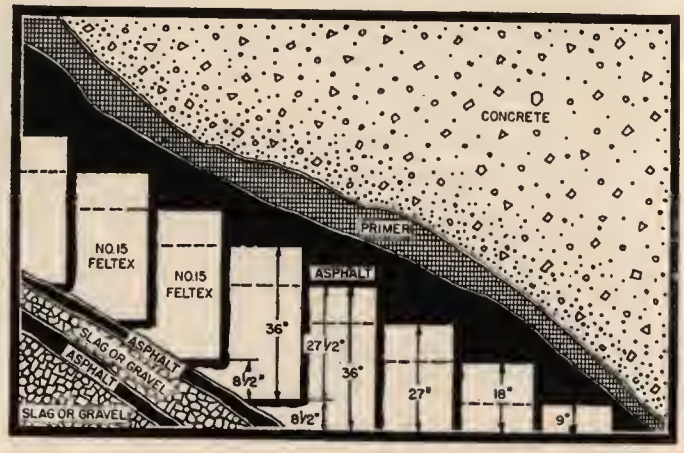
(Double Slag or Gravel Surface)

SPECIFICATION No. 3-AS

CONSTRUCTION: Asphalt and Asphalt Rag Felt
INCLINE: Level to 1 in. per ft.
SURFACE: Double Slag or Gravel
Underwriters' Laboratories Class "A" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

Primer: 1 gal.
Felt: 4 Plies—No. 15 Feltex (Perforated)
Asphalt: 285 lb. Carey Manco Asphalt
Surface: Slag—600 lb.
Gravel—800 lb.



DECK SURFACES

Before roofing is applied deck must be thoroughly dry and free from frost, loose sand or debris. All low spots or depressions removed to provide drainage.

Concrete, precast concrete slab and all cement surfaced decks must be primed with asphalt primer before applying hot asphalt.

Gypsum—Gypsum decks must he thoroughly dry prior to application of roofing. Primer not required but to assure proper adhesion of the roofing to gypsum, even though spot or strip mopped, the first ply should he back-nailed with "Viking" or approved staples through tin caps.

APPLICATION

The felt used in the construction of this roof shall be 36 in. wide. The roof surface shall first be mopped with heavy coating of asphalt into which, while hot, shall be applied four layers of asphalt felt mopped solid between the sheets so that at no point shall felt touch felt; each sheet to overlap the previous sheet 27½ in. leaving 8½ in. exposed. To the top surface of this construction, a flood coat of asphalt shall be poured from a dipper and not less than 80 lb. of asphalt shall be used to cover 100 sq. ft. of roof area. Into this flood coat of asphalt, while hot, 300 lb. of slag or 400 lb. of gravel shall he embedded.

All loose slag or gravel shall be swept from the surface and a second flood coat of asphalt shall be poured from a dipper and not less than 90 lb. of asphalt shall be used to cover 100 sq. ft. of roof area. Into this flood coat of asphalt, while hot, shall be embedded a second layer of slag or gravel using 300 lb. of slag or 400 lb. of gravel. The entire surface shall then be broomed free of all loose slag or gravel.

Asphalt should not be heated over 450° F. See note at bottom page 3.

SPECIFICATION No. 3-BS

CONSTRUCTION: COAL TAR PITCH AND TARRED RAG FELT
INCLINE: Level to 1 in. per ft.
SURFACE: Double Slag or Gravel
Underwriters' Laboratories Class "A" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

Felt: 4 Plies—No. 15 Careyseal Tar Rag Felt
Tar: 300 lb. (approved type)
Slag: 600 lb.
Gravel: 800 lb.

DECK SURFACES

(Same as Specification No. 3-AS above.)

APPLICATION

Felt to be 36 in. wide. Application the same as Specification 3-AS above (except tarred felt and tar pitch used).
Primer not required with tar pitch construction.

For application of Insulation, see page 27

SPECIFICATIONS FOR Carey 15-YEAR ROOFS

OVER CAREY THERMO-BORD DECK, CONCRETE, STEEL, POURED GYPSUM OR INSULATED DECKS

(Slag or Gravel Surface)

SPECIFICATION No. 4-A

CONSTRUCTION: Asphalt and Asphalt Rag Felt

INCLINE: Level to 3 in. per ft.

SURFACE: Slag or Gravel

Underwriters' Laboratories Class "A" Rating

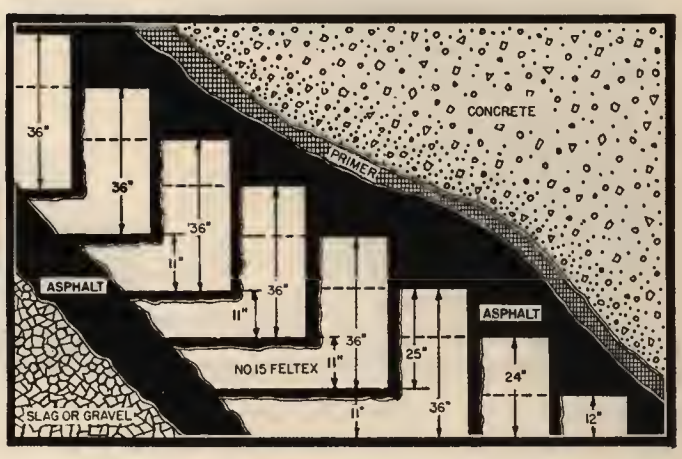
MATERIALS REQUIRED PER 100 SQ. FT.

Primer: 1 gal.

Felt: 3 Plies—No. 15 Feltex (Perforated)

Asphalt: 140 lb. Carey Manco Asphalt

Surface: Slag—300 lb.
Gravel—400 lb.



DECK SURFACES

Before roofing is applied decks must be thoroughly dry and free from frost, loose sand or debris. All low spots or depressions removed to provide satisfactory drainage.

Carey Insulated Deck, concrete and all cement surfaced decks must be primed with asphalt primer before applying hot asphalt.

Gypsum—Gypsum decks must be thoroughly dry prior to application of roofing. Primer not required but to assure proper adhesion of the roofing to gypsum, even though spot or strip mopped, the first ply should be back-nailed with "Viking" approved staples through tin caps.

Steel—Before roofing is applied all steel decks must first be covered with two plies of No. 15 Feltex applying same in shingle construction lapping each sheet 19 in. and mopping between felts so that at no place shall felt touch felt. Over this vapor barrier a layer of approved roof insulation at least ½ in. thick must be applied with hot asphalt.

APPLICATION

The Feltex used in the construction of this roof shall be 36 in. wide. The roof surface shall first be mopped with a heavy coat of asphalt, into which, while hot, shall be applied three sheets of felt mopped solid between the sheets so that at no point shall felt touch felt, each sheet to overlap the previous sheet 25 in., leaving 11 in. exposed. To the top surface of this construction a flood coat of asphalt shall be poured from a dipper and not less than 50 lb. shall be used to cover 100 sq. ft. of roof surface. Into this top flood coat of asphalt, while hot, slag or gravel shall be embedded. Asphalt used in the construction of the roof shall not be heated over 450° F. See note at bottom page 3.

APPLICATION OF SPECIFICATION No. 4-A, INCLINES 1½ IN. TO 3 IN. PER FT. (ASPHALT ONLY)

In applying this specification on a deck having a slope greater than 1½ in. per ft. and not exceeding 3 in. per ft., wooden nailing strips shall be provided spaced not greater than 3 ft. on centers, if deck will not allow for nailing. Wooden nailing strips, when provided, shall be laid parallel to slope of deck.

All sheets of felt shall be laid at right angles to the slope of deck and each sheet nailed 9 in. from the back edge with 1-in. roofing nails driven through flat tin caps or 1-in. "Simplex" Nails, all nails to be spaced on 1-ft. centers.

If wooden nailing strips are provided two nails are to be used at each nailing point, one nail to be 9 in. from back edge of sheet and one to be 7 in. from back edge of sheet.

Use soft-nosed nails when applied over insulation.

Carey Steep Manco Asphalt shall be used throughout.

SPECIFICATION No. 4-B—COAL TAR PITCH AND TARRED RAG FELT

INCLINE: Level to 2 in. per ft.

Underwriters' Laboratories Class "A" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

Felt: 3 Plies—No. 15 Careyseal Tar Rag Felt

Pitch: 175 lb. (approved type)

Surface: Slag—300 lb.
Gravel—400 lb.

DECK SURFACES

(Same as Specification No. 4-A, above.)

APPLICATION

Felts used to be 36 in. wide. Application same as Specification 4-A above. (Except tarred felt and tar pitch used.)

Primer not required with tar pitch construction.

For application of Insulation, see page 27

SPECIFICATIONS FOR Carey 10-YEAR and 15-YEAR ROOFS

OVER WOOD OR PRECAST GYPSUM DECKS

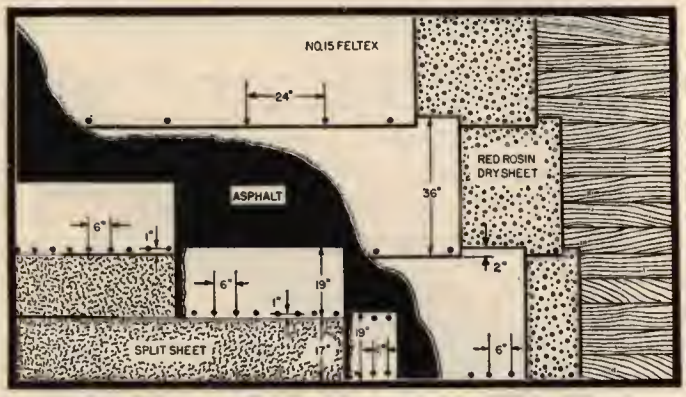
Mineral (Slate Granules) Surface

SPECIFICATION No. 5-AB (10-Year Roof)

CONSTRUCTION: Asphalt and Asphalt Rag Felt
INCLINE: 2 in. to 12 in. per ft.*
SURFACE: Mineral (Slate Granules)
Underwriters' Laboratories Class "C" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

Paper: 1 Ply—Red Rosin Dry Sheet
Felt: 1 Ply—No. 15 Feltex (Perforated)
Asphalt: 50 lb. Carey Manco Asphalt
Surface: 2 Plies Lastile Split Sheet



DECK SURFACES

(Same as shown under Specification 2-A.)

APPLICATION

The Feltex used in the construction of this roof shall be 36 in. wide. The first sheet shall be laid dry, lapped 2 in.; and be secured to the deck by occasional nailing. To the surface thus provided, a solid mopping of asphalt should be applied, into which while hot, should be embedded a starter sheet consisting of the 19-in. portion which has been cut from the Lastile Split Sheet. This is then solid mopped and the first full 36-in. width of Lastile Split Sheet embedded. After the first sheet of Split Sheet Roofing has been installed, secure same in place by means of one row of nails (1-in. roofing nails driven through tin caps or 1-in. "Simplex" nails) 1 in. above top edge of mineral surface, spacing nails 6 in. on center.

Over the 19-in. selvage lap and to a point 17 in. beyond the back edge of this sheet, apply a mopping of asphalt into which while hot shall be embedded the second sheet of Lastile Split Sheet Roofing, keeping the lower edge of same lined up with back edge of mineral surfacing. Nail the selvage portion of sheet as detailed above.

Carey Steep Manco Asphalt shall be used throughout. Carey Asphalt should not be heated over 450° F. See note at bottom page 3.

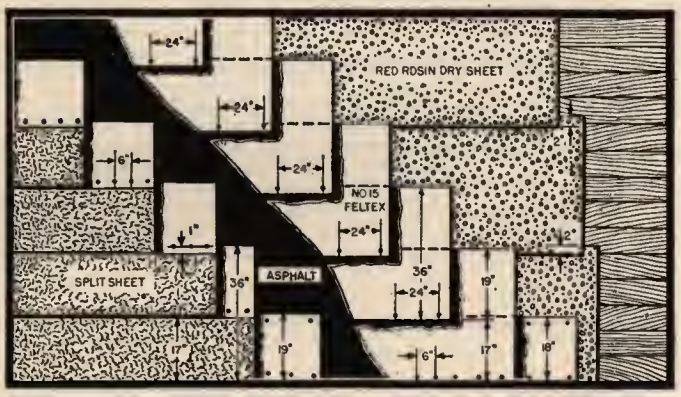
*For pitches over 6 in. per ft. use Carey Special Steep (215°-225° F. Asphalt).

SPECIFICATION No. 6-AC (15-Year Roof)

CONSTRUCTION: Asphalt and Asphalt Rag Felt
INCLINE: 2 in. to 12 in. per ft.*
SURFACE: Mineral (Slate Granules)
Underwriters' Laboratories Class "C" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

Paper: 1 Ply—Red Rosin Dry Sheet
Felt: 2 Plies—No. 15 Feltex (Perforated)
Asphalt: 75 lb. Carey Manco Asphalt
Surface: 2 Plies Lastile Split Sheet



DECK SURFACES

(Same as shown under Specification 2-A.)

APPLICATION

The Feltex used in the construction of this roof shall be 36 in. wide. The first two sheets shall be solid mopped, lapped 19 in., leaving 17 in. exposed, and he secured to the deck by occasional nailing along back edge of each sheet. To the surface thus provided, a solid mopping of asphalt should be applied, into which while hot, should be embedded a starter sheet consisting of the 19-in. portion which has been cut from the Lastile Split Sheet. This is then solid mopped and the first full 36-in. width of Lastile Split Sheet embedded. After the first sheet of Split Sheet Roofing has been installed, secure same in place by means of one row of nails (1-in. roofing nails driven through tin caps or 1-in. "Simplex" nails) 1 in. ahove top edge of mineral surface, spacing nails 6 in. on center.

Over the 19-in. selvage lap and to a point 17 in. heyond the back edge of this sheet, apply a mopping of asphalt into which while hot shall be embedded the second sheet of Lastile Split Sheet Roofing, keeping the lower edge of same lined up with back edge of mineral surfacing. Nail the selvage portion of sheet as detailed above. Carey Steep Manco Asphalt shall be used throughout. Asphalt should not he heated over 450° F. See note at bottom page 3.

*For pitches over 6 in. per ft. use Carey Special Steep (215°-225° F.) Asphalt.

SPECIFICATIONS FOR Carey 20-YEAR ROOFS

OVER WOOD OR PRECAST GYPSUM DECKS

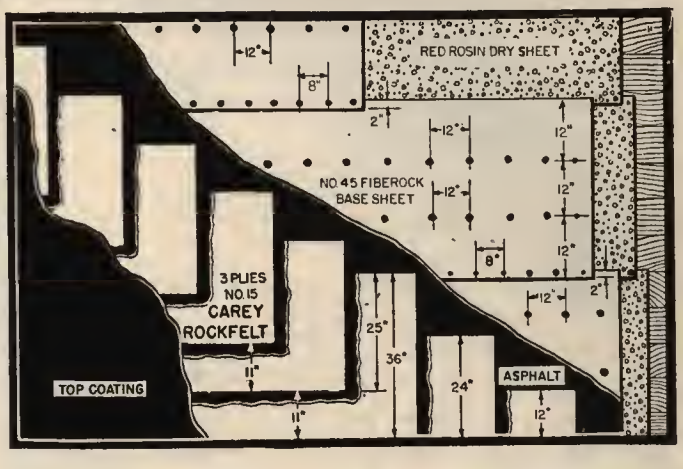
(Smooth Surface)

SPECIFICATION No. 9-A

CONSTRUCTION: Asphalt and Asphalt Asbestos Felt
INCLINE: ½ in. to 6 in. per ft.
SURFACE: Smooth
Underwriters' Laboratories Class "C" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

Paper: 1 Ply—Red Rosin Dry Sheet
Felt: 1 Ply—No. 45 Carey Fiberock
3 Plies—No. 15 Carey Rockfelt (Perforated)
Asphalt: 75 lb. Carey Manco Asphalt (between plies)
Surface: Smooth Asphalt 25 lb. Carey Manco
or Careyclad 1½ gal.
or Flextop 2 gal. (preferred surface coating)



DECK SURFACES

Wood Deck—Before these Built-up Roofing Specifications are applied the decks shall be covered with Red Rosin Dry Sheet or Sub Grade Felt, Polar Brand Sheathing or a substitute of similar nature, same to be lapped approximately 2 in. and secured to the deck by occasional nailing.

Nails to be used in securing the Built-up Roofing Specifications in the manner described under "Application" shall be either 1 in. roofing nails driven through flat tin caps or 1 in. "Simplex" nails.

Gypsum Decks—Gypsum decks must be thoroughly dry prior to application of roofing. The Red Rosin Dry Sheet or a substitute of a similar nature is required on pre-cast gypsum decks. Base sheets should be secured to gypsum decks by use of "Viking" or approved staples through tin caps instead of nails.

APPLICATION

All felts used in the construction of this roof shall be 36 in. wide. The roof surface shall first be covered with the No. 45 Fiberock Base Sheet, lapping all sheets not less than 2 in. and secured to the deck with 1-in. nails driven through flat tin caps or 1-in. "Simplex" nails, spacing nails along the laps approximately every 8 in. In addition two rows of nails shall be run parallel to the laps through the center of the sheets, nailing approximately 12 in. apart and 12 in. from either edge. To the surface thus provided a solid mopping of Carey Manco Asphalt shall be applied into which, while hot, shall be embedded three sheets of No. 15 Perforated Carey Rockfelt, each sheet to overlap previous sheet 25 in., leaving 11 in. exposed. Solid moppings of asphalt shall be applied between the sheets so that at no point shall felt touch felt. The roof surface shall be finished with a uniform coating of hot Carey Manco Asphalt or a uniform coating of Careyclad or Flextop Coating. Asphalt used in the construction of this roof shall not be heated over 450° F. See note at bottom page 3.

SPECIFICATION No. 9-C—COMBINATION ASPHALT, ASPHALT RAG FELT AND ASBESTOS FELTS

INCLINE: ½ in. to 6 in. per ft.
Underwriters' Laboratories Class "C" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

Paper: 1 Ply—Red Rosin Dry Sheet
Felt: 1 Ply—No. 43 Carey Colcap Roofing
3 Plies—No. 15 Carey Rockfelt (Perforated)
Asphalt: 75 lb. Carey Manco Asphalt (between plies)
Surface: Smooth Asphalt 25 lb. Carey Manco
or Careyclad 1½ gal.
or Flextop 2 gal. (preferred surface coating)

DECK SURFACES

(Same as Specification No. 9-A, above.)

APPLICATION

Felts used to be 36 in. wide. Application same as Specification No. 9-A, except that No. 43 Carey Colcap Roofing shall be used in place of No. 45 asbestos base sheet.

STEEP DECK APPLICATION WHEN INCLINE EXCEEDS 1½ IN. PER FT.

In applying the above specifications on decks having slope exceeding 1½ in. per ft., all sheets shall be run at right angles to slope of deck and nailed at a point 2 in. from the back edge of each sheet, spacing nails on 8-in. centers.

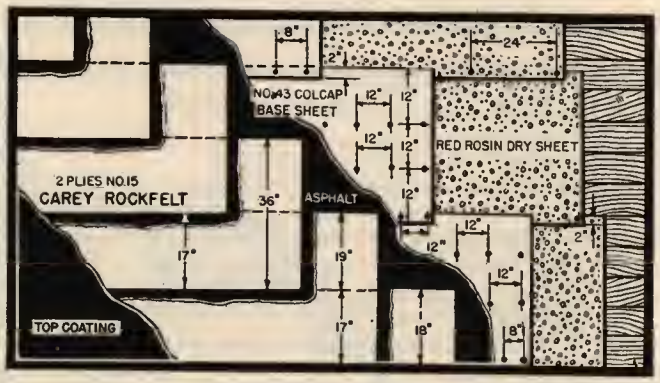
Carey Steep Manco Asphalt shall be used throughout.

SPECIFICATIONS FOR Carey 10- and 15-YEAR ROOFS

OVER WOOD OR PRECAST GYPSUM DECKS (Smooth Surface)

SPECIFICATION No. 10-A (15-Year Roof)

CONSTRUCTION: Combination Asphalt, Asphalt Rag Felt and Asbestos Felts
INCLINE: ½ in. to 6 in. per ft.
SURFACE: Smooth
Underwriters' Laboratories Class "C" Rating
MATERIALS REQUIRED PER 100 SQ. FT.
Paper: 1 Ply—Red Rosin Dry Sheet
Felt: 1 Ply—No. 43 Carey Colcap Roofing
2 Plies—No. 15 Carey Rockfelt (Perforated)
Asphalt: 50 lb. Carey Manco Asphalt (between plies)
Surface: Smooth Asphalt 25 lb. Carey Manco
or Careyclad 1½ gal.
or Flextop 2 gal. (preferred surface coating)



DECK SURFACES

Wood Deck—Before these Built-up Roofing Specifications are applied the decks shall be covered with Red Rosin Dry Sheet or Sub Grade Felt, Polar Brand Sheathing or a substitute of similar nature, same to be lapped approximately 2 in. and secured to the deck by occasional nailing.

Nails to be used in securing the Built-up Roofing Specifications in the manner described under "Application" shall be either 1 in. roofing nails driven through flat tin caps or 1 in. "Simplex" nails.

Gypsum Decks—Gypsum decks must be thoroughly dry prior to application of roofing. The Red Rosin Dry Sheet or a substitute of a similar nature is required on pre-cast gypsum decks. Base sheets should be secured to gypsum decks by use of "Viking" or approved staples through tin caps instead of nails.

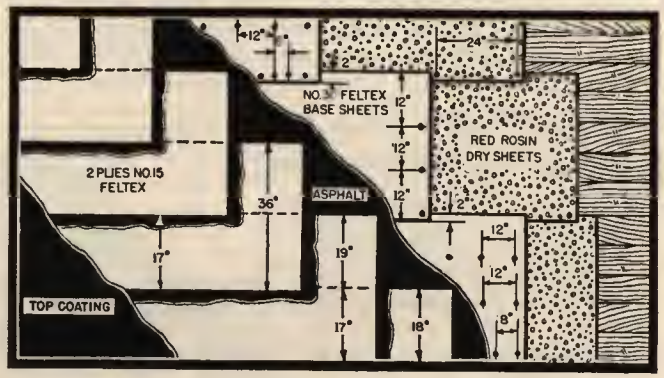
APPLICATION

All felts used in the construction of this roof shall be 36 in. wide. The roof surface shall first be covered with the No. 43 Carey Colcap Roofing lapping all sheets not less than 2 in. and secured to the deck with 1-in. nails driven through flat tin caps or 1-in. "Simplex" nails, spacing nails along the laps approximately every 8 in. In addition two rows of nails shall be run parallel to the laps through the center of the sheets, nailing approximately 12 in. apart and 12 in. from either edge. To the surface thus provided a solid mopping of Carey Asphalt shall be applied, into which, while hot, shall be embedded two sheets of Carey No. 15 Perforated Carey Rockfelt, each sheet to overlap the previous sheet 19 in., leaving 17 in. exposed. Solid moppings of asphalt shall be applied between the sheets so that at no point shall felt touch felt. The roof surface shall be finished with a uniform coating of hot Carey Manco Asphalt, Careyclad or Flextop Coating. Asphalt used in the construction of this roof shall not be heated over 450° F. See note at bottom page 3.

SPECIFICATION No. 10-B (10-Year Roof)

CONSTRUCTION: Asphalt and Asphalt Rag Felt
INCLINE: ½ in. to 6 in. per ft.
SURFACE: Smooth
Underwriters' Laboratories Class "C" Rating
MATERIALS REQUIRED PER 100 SQ. FT.
Paper: 1 Ply—Red Rosin Dry Sheet
Felt: 1 Ply—No. 30 Feltex, 2 Plies—No. 15 Feltex (Perforated)
Asphalt: 50 lb. Carey Manco Asphalt (between plies)
Surface: Smooth Asphalt 25 lb. Carey Manco
or †Careyclad 1½ gal.
or †Flextop 2 gal. (preferred surface coating)

† When a cold coating is used on this specification, bond will only be issued with the understanding that the roof must be recoated with the same material at owner's expense every three years during the bond term.



DECK SURFACES

(Same as Specification 10-A, above.)

APPLICATION

All felts used in the construction of this roof shall be 36 in. wide. The roof surface shall first be covered with the No. 30 Feltex, lapping all sheets not less than 2 in. and secured to the deck with 1-in. nails driven through flat tin caps or 1-in. "Simplex" nails, spacing nails along the laps approximately every 8 in. In addition two rows of nails shall he run parallel to the laps through the center of the sheets, nailing approximately 12 in. apart and 12 in. from either edge. To the surface thus provided a solid mopping of Carey Asphalt shall be applied, into which, while hot, shall be embedded two sheets of Carey No. 15 Feltex, each sheet to overlap the previous sheet 19 in., leaving 17 in. exposed. Solid moppings of asphalt shall be applied between the sheets so that at no point shall felt touch felt. The roof surface shall be finished with a uniform coating of hot Carey Manco Asphalt, Careyclad or Flextop coating. Asphalt used shall not be heated over 450° F. See note at bottom page 3.

SPECIFICATION No. 10-C—COMBINATION ASPHALT, ASPHALT RAG FELT AND ASBESTOS FELTS (10-Year Roof)

INCLINE: ½ in. to 6 in. per ft.
Underwriters' Laboratories Class "C" Rating

MATERIALS REQUIRED PER 100 SQ. FT.
Paper: 1 Ply—Red Rosin Dry Sheet
Felt: 1 Ply—No. 30 Feltex
2 Plies—No. 15 Carey Rockfelt (Perforated)
Asphalt: 50 lb. Carey Manco Asphalt (between plies)
Surface: Smooth Asphalt 25 lb. Carey Manco
or Careyclad 1½ gal.
or Flextop 2 gal. (preferred surface coating)

DECK SURFACES

(Same as Specification No. 10-A, above)

APPLICATION

All felts to be 36 in. wide. Application same as Specification No. 10-A.

STEEP DECK APPLICATION WHEN INCLINE EXCEEDS 1½ IN. PER FT. (See note on page 9)

SPECIFICATIONS FOR Carey 15- and 20-YEAR ROOFS

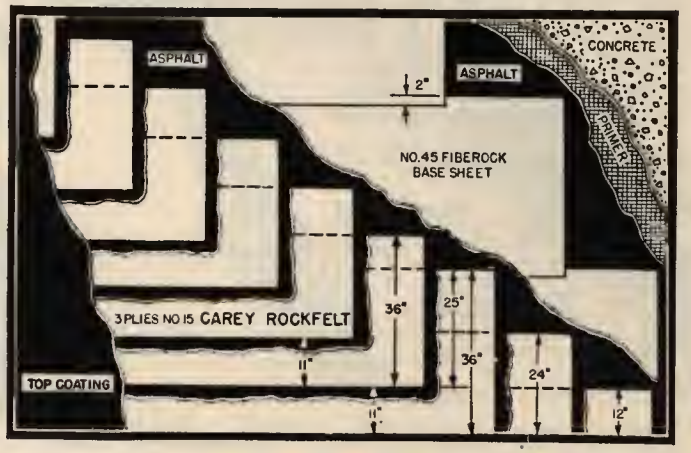
OVER CAREY THERMO-BORD DECK, CONCRETE, STEEL, POURED GYPSUM OR INSULATED DECKS (Smooth Surface)

SPECIFICATION No. 11-A (20-Year Roof)

CONSTRUCTION: Asphalt and Asphalt Asbestos Felt
INCLINE: ½ in. to 6 in. per ft.
SURFACE: Smooth
Underwriters' Laboratories Class "C" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

Primer: 1 gal.
Felt: 1 Ply—No. 45 Carey Fiberock
3 Plies—No. 15 Carey Rockfelt (Perforated)
Asphalt: 115 lb. Carey Manco Asphalt (between plies)
Surface: Smooth Asphalt 25 lb. Carey Manco
or Careyclad 1½ gal.
or Flextop 2 gal. (preferred surface coating)



DECK SURFACES

Before roofing is applied deck must be thoroughly dry and free from frost, loose sand or debris. All low spots or depressions removed to provide satisfactory drainage.

Carey Insulated Deck, concrete and all **cement** surfaced decks must be primed with asphalt primer before applying hot asphalt.

Gypsum—Gypsum decks must be thoroughly dry prior to application of roofing. Primer not required but to assure proper adhesion of the roofing to gypsum, even though spot or strip mopped, the first ply should be back-nailed with "Viking" or approved staples through tin caps.

Steel—Before roofing is applied all steel decks must first be covered with two plies of No. 15 Feltex applying same in shingle construction lapping each sheet 19 in. and mopping between felts so that at no place shall felt touch felt. Over this vapor barrier a layer of approved roof insulation at least ½ in. thick must be applied with hot asphalt.

APPLICATION

All felts used in the construction of this roof shall be 36 in. wide. The roof surface shall first be mopped with a heavy coat of asphalt into which, while hot, shall be laid the Carey No. 45 Fiberock Base Sheet, lapping all sheets not less than 2 in. To the surface thus provided a solid mopping of Carey Asphalt shall be applied into which, while hot, shall be embedded three sheets of No. 15 Perforated Carey Rockfelt, each sheet to overlap the previous sheet 25 in., leaving 11 in. exposed. Solid moppings of asphalt shall be applied between the sheets so that at no point shall felt touch felt. The roof surface shall be finished with a uniform coating of Carey Manco Asphalt or Careyclad or Flextop Coating. Asphalt used in the construction of this roof shall not be heated over 450° F. See note at bottom page 3.

SPECIFICATION No. 11-C (15-Year Roof)

CONSTRUCTION: Asphalt and Asphalt Asbestos Felt
INCLINE: ½ in. to 6 in. per ft.
SURFACE: Smooth
Underwriters' Laboratories Class "C" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

Primer: 1 gal.
Felt: 4 Plies—No. 15 Carey Rockfelt (Perforated)
Asphalt: 115 lb. Carey Manco Asphalt (between plies)
Surface: Smooth Asphalt 25 lb. Carey Manco
or Careyclad 1½ gal.
or Flextop 2 gal. (preferred surface coating)

DECK SURFACES

(Same as Specification No. 11-A, above.)

APPLICATION

All felts used in the construction of this roof shall be 36 in. wide. The roof surface shall first be mopped with a heavy coat of asphalt into which, while hot, shall be embedded four sheets of felt, each sheet to overlap the previous sheet 27½ in., leaving 8½ in. exposed. Solid moppings of asphalt shall be applied between the sheets so that at no point shall felt touch felt. The roof surface shall be finished with a uniform coating of Carey Manco Asphalt or Careyclad or Flextop Coating. Asphalt used in constructing the roof shall not be heated over 450° F. See note bottom page 3.

Note: STEEP DECK APPLICATION

When incline exceeds 1½ in. per ft. and not exceeding 6 in. per ft. if deck will not allow for nailing, wooden nailing strips laid parallel to slope shall be provided spaced not greater than 3 ft. on centers.

If deck permits nailing all felts shall be laid at right angles to pitch of roof and base felt nailed at laps on 6-in. center and stagger nailed through middle of sheet. Cap sheets shall be nailed on 12-in. centers along back edge of each sheet as applied.

When applied over insulation, nails of sufficient length shall be used to properly anchor sheets. Use "Simplex" nails or roofing nails driven through tin caps. Use soft nosed nails when decks will not allow for nailing so that points of nails will turn and clinch on under side of insulation.

Carey Steep Manco Asphalt shall he used throughout.

For application of Insulation, see page 27

SPECIFICATIONS FOR Carey 10- and 15-YEAR ROOFS

OVER CAREY THERMO-BORD DECK, CONCRETE, STEEL, POURED GYPSUM OR INSULATED DECKS (Smooth Surface)

SPECIFICATION No. 12-A (15-Year Roof)

CONSTRUCTION: Asphalt and Asphalt Asbestos Felt
INCLINE: ½ in. to 6 in. per ft.
SURFACE: Smooth
Underwriters' Laboratories Class "C" Rating

MATERIALS REQUIRED PER 100 SQ. FT.
Primer: 1 gal.
Felt: 1 Ply—No. 45 Carey Fiberock
2 Plies—No. 15 Carey Rockfelt (Perforated)
Asphalt: 90 lb. Carey Manco Asphalt (between plies)
Surface: Smooth Asphalt 25 lb. Carey Manco.
or Careyclad 1½ gal.
or Flextop 2 gal. (preferred surface coating)

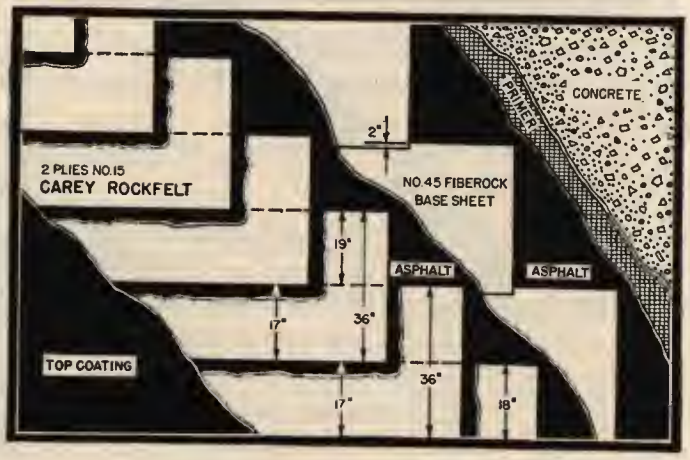
DECK SURFACES

Before roofing is applied deck must be thoroughly dry and free from frost, loose sand or debris. All low spots or depressions removed to provide satisfactory drainage.

Carey Insulated Deck, concrete and all cement surfaced decks must be primed with asphalt primer before applying hot asphalt.

Gypsum—Gypsum decks must be thoroughly dry prior to application of roofing. Primer not required but to assure proper adhesion of the roofing to gypsum, even though spot or strip mopped, the first ply should be back-nailed with "Viking" or approved staples through tin caps.

Steel—Before roofing is applied all steel decks must first be covered with two plies of No. 15 Feltex applying same in shingle construction lapping each sheet 19 in. and mopping between felts so that at no place shall felt touch felt. Over this vapor barrier a layer of approved roof insulation at least ½ in. thick must be applied with hot asphalt.



APPLICATION

All felts used in the construction of this roof shall be 36 in. wide. The roof surface shall first be mopped with a heavy coat of asphalt into which, while hot, shall be laid the Carey No. 45 Fiberock Base Sheet, lapping all sheets not less than 2 in. To the surface thus provided a solid mopping of Carey Manco Asphalt shall be applied into which, while hot, shall be embedded two sheets of No. 15 Perforated Carey Rockfelt, each sheet to overlap the previous sheet 19 in., leaving 17 in. exposed. Solid moppings of asphalt shall be applied between the sheets so that at no point shall felt touch felt. The roof surface shall be finished with a uniform coating of Carey Manco Asphalt, Careyclad or Flextop Coating. Asphalt used in the construction of this roof shall not be heated over 450° F. See note at bottom page 3.

SPECIFICATION No. 12-B—ASPHALT AND ASPHALT RAG FELT (10-Year Roof)

INCLINE: ½ in. to 6 in. per ft.
Underwriters' Laboratories Class "C" Rating

MATERIALS REQUIRED PER 100 SQ. FT.
Primer: 1 gal.
Felt: 1 Ply—No. 30 Feltex
2 Plies—No. 15 Feltex (Perforated)
Asphalt: 90 lb. Carey Manco Asphalt (between plies)
Surface: Smooth Asphalt 25 lb. Carey Manco
or †Careyclad 1½ gal.
or †Flextop 2 gal. (preferred surface coating)

† When a cold coating is used on this specification, bond will only be issued with the understanding that the roof must be recoated with the same material at owner's expense every three years during the bond term.

DECK SURFACES

(Same as Specification No. 12-A, above)

APPLICATION

All felts to be 36 in. wide. Application same as Specification No. 12-A, except No. 30 Feltex Base used in place of No. 45 Asbestos and No. 15 Feltex used in place of No. 15 Perforated Carey Rockfelt.

SPECIFICATION No. 12-C—COMBINATION ASPHALT, ASPHALT RAG AND ASBESTOS FELTS (10-Year Roof)

INCLINE: ½ in. to 6 in. per ft.
Underwriters' Laboratories Class "C" Rating

MATERIALS REQUIRED PER 100 SQ. FT.
Primer: 1 gal.
Felt: 1 Ply—No. 30 Feltex
2 Plies—No. 15 Carey Rockfelt (Perforated)
Asphalt: 90 lb. Carey Manco Asphalt (between plies)
Surface: Smooth Asphalt 25 lb. Carey Manco
or Careyclad 1½ gal.
or Flextop 2 gal. (preferred surface coating)

DECK SURFACES

(Same as Specification No. 12-A, above)

APPLICATION

All felts to be 36 in. wide. Application same as for Specification No. 12-A, except No. 30 Feltex base used in place of No. 45 Asbestos.

STEEP DECK APPLICATION WHEN INCLINE EXCEEDS 1½ IN. PER FT. (See note on page 11)

For application of Insulation, see page 27

SPECIFICATIONS FOR Carey 10-YEAR PROMENADE TILE DECK

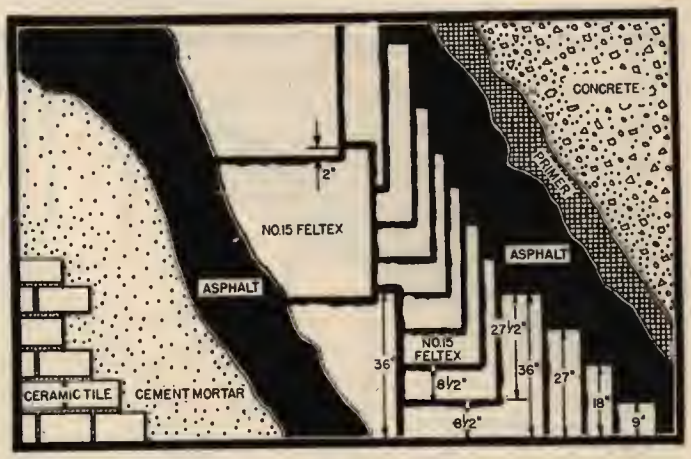
OVER POURED CONCRETE

SPECIFICATION No. PR-1A (10-Year Bond*)

CONSTRUCTION: Asphalt and Asphalt Rag Felt
INCLINE: Level to 1 in. per ft.
SURFACE: Ceramic Promenade Tile
Underwriters' Laboratories Class "A" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

Primer: 1 gal.
Felt: 5 Plies—No. 15 Feltex (Perforated)
Asphalt: 175 lb. Carey Manco Asphalt



DECK SURFACE

Concrete—Before roofing is applied concrete deck must be thoroughly dry and free from frost, loose sand or debris. All low spots or depressions removed to provide satisfactory drainage.

Deck must be primed with asphalt primer before applying hot asphalt.

APPLICATION

The felt used in the construction of this roof shall be 36 in. wide. The roof surface shall be mopped with a heavy coating of Carey Manco asphalt into which, while hot, shall be applied four layers of No. 15 Feltex mopped solid between the sheets so that at no point shall felt touch felt; each sheet to overlap the previous sheet 27½ in., leaving 8½ in. exposed. Mop the surface of this construction with Carey Manco asphalt into which embed one layer of No. 15 Feltex, lapping each sheet 2 in. over the preceding sheet. Over this surface before laying the cement mortar in which the tile is to be set, mop a heavy coat of asphalt of not less than 35 lb. per 100 sq. ft. Asphalt should not be heated over 450° F. See note at bottom page 3.

The clay tile shall be set in Portland Cement Mortar and joints grouted with Portland Cement Grout. The mortar bed shall be not less than ¾ in. thick.

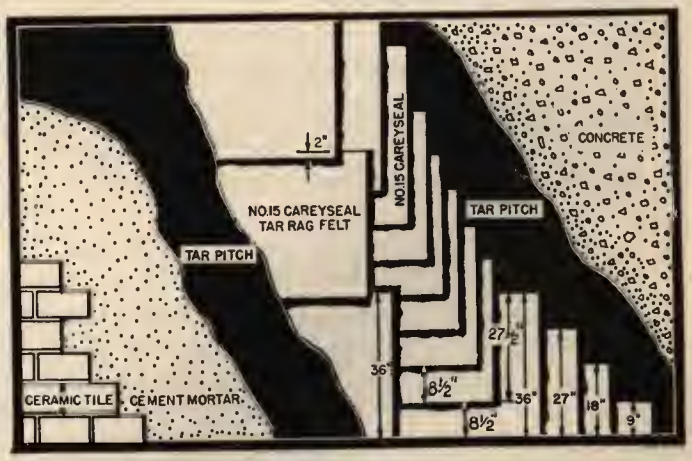
Expansion Joints through Ceramic Tile and mortar to be filled with Careylastic.

SPECIFICATION No. PR-1B (10-Year Bond*)

CONSTRUCTION: Coal Tar Pitch and Tarred Rag Felt
INCLINE: Level to 1 in. per ft.
SURFACE: Ceramic Promenade Tile
Underwriters' Laboratories Class "A" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

Felt: 5 Plies—No. 15 Careyseal Tar Rag Felt
Roofing Tar: 125 lb. (approved type)
Steep Tar: 75 lb. (approved type)



DECK SURFACES

(Same as Specification No. PR-1A above except primer not required)

APPLICATION

Felt to be 36 in. wide. Application same as Specification PR-1A above (except tarred felt and tar pitch used).

Steep tar to be used between the 4th and the 5th ply, using 25 lb. per 100 sq. ft. Over 5th ply before laying the cement mortar in which the Ceramic Tile is set, apply a heavy coat of steep tar of about 50 lb. per 100 sq. ft.

Expansion Joints through Ceramic Tile and mortar to be filled with Careylastic.

*The Bond only applies to the Roofing Materials used and if leaks occur the tile must be removed and reset at owner's expense for any inspections or repairs.

SPECIFICATIONS FOR Carey COLD PROCESS BUILT-UP 15-YEAR ROOF

OVER WOOD AND PRECAST DECKS

(Slag or Gravel Surfaced)

SPECIFICATION No. AC-1

CONSTRUCTION: 3 Plies—Carey No. 43 Colcap Felt

INCLINE: Level to 3 in. per ft.

Underwriters' Laboratories Class "A" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

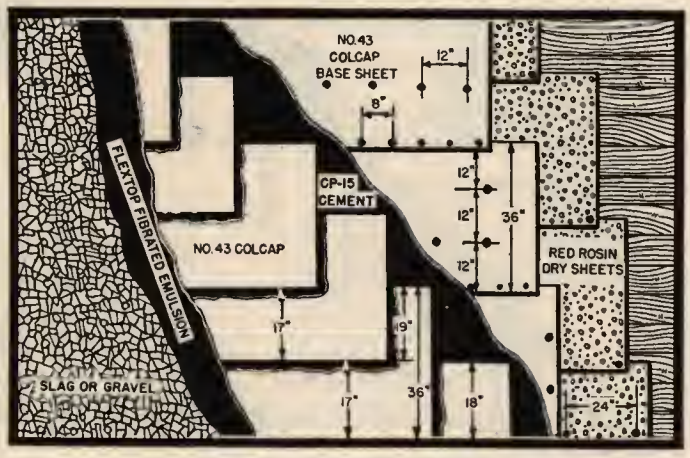
Paper: 1 Ply—Red Rosin Dry Sheet

Felt: 3 Plies—No. 43 Colcap Felt

CP-15 Cement: 4 gal.

Flextop (Fibrated) Emulsion: 10 gal.

Surface: Slag—300 lb.
Gravel—400 lb.



DECK SURFACES

Wood Deck—Before this Built-Up Roofing Specification is applied, the deck shall be covered with Red Rosin Dry Sheet or Snb Grade Felt, Polar Brand Sheathing or a substitnte of similar nature, same to be lapped approximately 2 in. and secured to the deck by occasional nailing.

Gypsum Decks—Gypsum decks must be thoroughly dry prior to application of roofing. The Red Rosin Dry Sheet or a substitnte of a similar nature is required on pre-cast gypsum decks. Base sheets should be secured to gypsum decks by use of "Viking" or approved staples through tin caps instead of nails.

FELT PREPARATION

The No. 43 Colcap Felt Roofing is to be cut in strips not over 18 ft. long and to be stacked flat for a period of at least four hours before being used.

CANT BLOCKS

A cant block shall be installed in all angles formed by the intersection of the roof deck and vertical surfaces. This cant block is to be either a Carey Elastite Cant Block or wood cant cut out of 4 x 4-in. lumber ripped diagonally.

APPLICATION

Over the deck apply a layer of Carey Colcap Felt, lapping the sheets 2 in. and nailing 8 in. on centers on laps and staggering 2 rows of nails through the center of the sheet, the first row 12 in. from the lower edge of the sheet, and the second row 12 in. from the upper edge of the sheet spacing the nails on 12-in. centers. On wood decks use "Simplex" nails or roofing nails driven through tin caps and on gypsum decks use "Viking" or approved staples through tin caps. Over the surface of the Carey Colcap Felt and starting at the lower point of the roof apply Carey CP-15 Cement to a strip 18 in. in width from the lower point of the roof. Into same when tacky embed an 18-in. width of Carey Colcap Felt. Next coat the 18-in. width of Carey Colcap Felt with CP-15 Cement and carry same to a point 18 in. above the upper edge of the 18-in. width sheet and when this cement becomes tacky, embed in same a sheet of 36-in. wide Carey Colcap Felt. To the surface of the 36-in. wide sheet, apply cement from a point 19 in. below the upper edge of the sheet to a point 17 in. above the upper edge of the sheet and when this cement becomes tacky embed in same the next full width sheet of Carey Colcap Felt. Continue this method of application until the roof has been completed.

Over the surface of this construction apply Carey Flextop Fibrated Emulsion at the rate of 80 lb. per 100 sq. ft. or approximately 10 gal. per 100 sq. ft. This material should be spotted to the required amount over the area and smoothed out with a brush or squeegee. Immediately after application of the emulsion, slag shall be embedded at the rate of 300 lb. per 100 sq. ft. or gravel at the rate of 400 lb. per 100 sq. ft.

STEEP DECK APPLICATION WHEN INCLINE EXCEEDS 1½ IN. PER FT.

In applying the above specification on decks having a slope exceeding 1½ in. per ft., but not in excess of 3 in. per ft., all sheets must be run at right angles to slope of deck and nailed 2 in. from back edge of each sheet, spacing nails on 8-in. centers.

For flashing and edging specifications, see page 24

SPECIFICATIONS FOR Carey COLD PROCESS BUILT-UP 15-YEAR ROOF

OVER CONCRETE, INSULATED STEEL AND CAREY THERMO-BORD DECKS

(Slag or Gravel Surfaced)

SPECIFICATION No. AC-2

CONSTRUCTION: 3 Plies—Carey No. 43 Colcap Felt

INCLINE: Level to 3 in. per ft.

Underwriters' Laboratories Class "A" Rating

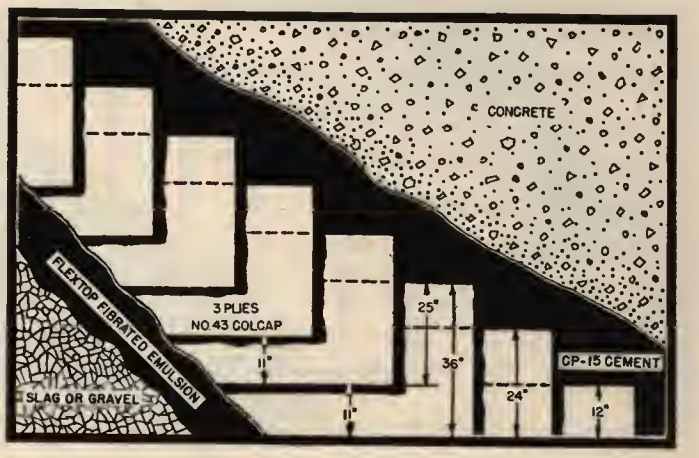
MATERIALS REQUIRED PER 100 SQ. FT.

Felt: 3 Plies—Carey No. 43 Colcap Felt

CP-15 Cement: 6 gal.

Flextop (Fibrated) Emulsion: 10 gal.

Surface: Slag—300 lb.
Gravel—400 lb.



DECK SURFACES

Before coating is applied to the deck, same must be dry, smooth, clean and free from debris of all sorts. Roof must be applied during dry, favorable weather.

Metal decks must be covered with 2 plies of No. 15 Feltex and at least ½ in. of approved insulation.

FELT PREPARATION

The No. 43 Colcap Felt Roofing is to be cut in strips not over 18 ft. long and to be stacked flat for a period of at least four hours before being used.

CANT BLOCKS

A cant block shall be installed in all angles formed by the intersection of the roof deck and vertical surfaces. This cant block to be either a Carey Elastite Cant Block or a wood cant cut out of 4 x 4-in. lumber ripped diagonally.

APPLICATION

Over the surface of the roof, and starting at the low point, apply a coating of CP-15 Cement at the rate of approximately 2 gal. per 100 sq. ft. for a width of 12 in. and, when cement becomes tacky, embed in same a 12-in. width of Colcap Felt. Over the surface of the 12-in. strip of felt, and to a point 12 in. above the upper edge, coat with CP-15 Cement and, when same becomes tacky, embed a 24-in. wide sheet of Colcap Felt being sure that the lower edge of the 24-in. wide sheet is kept even with the lower edge of the 12-in. wide sheet. Over the surface of the 24-in. strip of felt, and to a point 12 in. above the upper edge, coat with CP-15 Cement and, when same becomes tacky, embed a 36-in. wide sheet of Colcap Felt being sure that the lower edge of a 36-in. wide sheet is kept even with the lower edge of the 24-in. and 12-in. wide sheets.

To the surface of the 36-in. wide sheet apply CP-15 Cement from a point 25 in. below the upper edge of the sheet to a point 11 in. above the upper edge of the sheet and when this cement becomes tacky, embed in same the next 36-in. wide sheet of Colcap Felt, lapping same over previous sheet 25 in. leaving 11 in. exposed. Continue this application until roof has been completed. Over the surface of this construction apply Flextop Fibrated Emulsion at the rate of 80 lb. per 100 sq. ft. or approximately 10 gal. per 100 sq. ft. This material should be spotted to the required amount over the area and smoothed out with a brush or squeegee. Immediately after application of the emulsion, slag shall be embedded at the rate of 300 lb. per 100 sq. ft. or gravel at the rate of 400 lb. per 100 sq. ft.

All roofing sheets shall be carried to the top of cant block.

All sheets shall be broomed carefully in order to assure complete adhesion of felts.

When open eaves or gables occur, carry roofing felt down over edge and nail securely into vertical face with 1-in. roofing nails driven through tin caps spaced 4 in. on center.

STEEP DECK APPLICATION WHEN INCLINE EXCEEDS 1½ IN. PER FT.

In applying the above specification on decks, having a slope exceeding 1½ in. per ft., but not in excess of 3 in. per ft., all sheets shall be run at right angles to slope of deck and nailed 2 in. from back edge of each sheet, spacing nails on 8-in. centers.

If roof does not permit nailing, nailing strips shall be provided spaced not greater than 3 ft. on centers. Wooden nailing strips, when provided, shall be laid parallel to slope of deck.

For flashing and edging specifications, see page 24

SPECIFICATIONS FOR Carey COLD PROCESS BUILT-UP 15-YEAR ROOF

OVER WOOD AND PRECAST GYPSUM DECKS

(Smooth Surface)

SPECIFICATION No. AS-1

CONSTRUCTION: 4 Plies—No. 20 Fiberock over
1 Ply—No. 45 Fiberock Base Sheet

INCLINE: ¾ in. to 5 in. per ft.

Underwriters' Laboratories Class "A" Rating

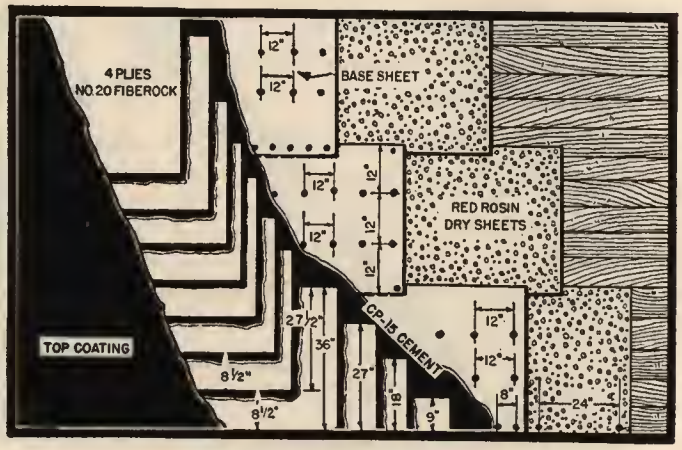
MATERIALS REQUIRED PER 100 SQ. FT.

Paper: 1 Ply—Red Rosin Dry Sheet

Felt: 1 Ply—No. 45 Carey Fiberock
4 Plies—No. 20 Fiberock

Ply Cement: CP-15 Cement 8 gal.

Top Coating: CP-15 Coating 2 gal.
or CP-10 Coating 1½ gal.



DECK SURFACES

Wood Deck—Before this Built-Up Roofing Specification is applied, the deck shall be covered with Red Rosin Dry Sheet or Sub Grade Felt, Polar Brand Sheathing or a substitute of similar nature, same to be lapped approximately 2 in. and secured to the deck by occasional nailing.

Gypsum Decks—Gypsum decks must be thoroughly dry prior to application of roofing. The Red Rosin Dry Sheet or a substitute of a similar nature is required on pre-cast gypsum decks. Base sheets should be secured to gypsum decks by use of "Viking" or approved staples through tin caps instead of nails.

FELT PREPARATION

The No. 45 Fiberock Base Sheet is to be cut in strips not over 18 ft. long and to be stacked flat for a period of at least four hours before being used.

CANT BLOCKS

A cant block shall be installed in all angles formed by the intersection of the roof deck and vertical surfaces; this cant block to be either a Carey Elastite Cant Block or a wood cant cut out of 4 x 4-in. lumber ripped diagonally.

APPLICATION

Over the deck apply a layer of No. 45 Fiberock Base Sheet lapping same 2 in. and nailing 8 in. on centers on laps and staggering 2 rows of nails through the center of the sheet, the first row 12 in. from the lower edge of the sheet spacing nails 12 in. on centers. On wood decks use 1-in. "Simplex" nails or 1-in. roofing nails driven through tin caps and on precast gypsum decks use the "Viking" or approved staple through tin caps. Over the surface of the No. 45 Fiberock Base Sheet and starting at the eave or low point of the roof, apply Carey CP-15 Cement and into same embed, when tacky, a 9-in. width of No. 20 Fiberock. Coat the surface of the No. 20 Fiberock with Carey CP-15 Cement and carry same to a point about 9 in. above the upper edge of the 9-in. sheet and when this cement becomes tacky, embed in same an 18-in. wide sheet of No. 20 Fiberock. Coat the surface of the 18-in. wide sheet of No. 20 Fiberock with CP-15 Cement and carry same to a point 9 in. beyond upper edge of the 18-in. sheet and when the cement becomes tacky, embed in same a 27-in. wide sheet of No. 20 Fiberock. Coat the surface of the 27-in. wide sheet of No. 20 Fiberock with CP-15 Cement and carry same to a point 9 in. beyond the upper edge of the 27-in. wide sheet of No. 20 Fiberock and when the cement becomes tacky, embed in same a 36-in. wide sheet of No. 20 Fiberock. To the surface of the 36-in. wide sheet apply CP-15 Cement from a point 8½ in. above the lower edge of the sheet and to a point 8½ in. above the upper edge of the sheet and when this cement becomes tacky, embed in same the next full width sheet of No. 20 Fiberock lapping same over previous sheet 27½ in. leaving 8½ in. exposed. Continue this application until the roof has been completed. Over the surface of this construction apply CP-15 Roof Coating at the rate of 2 gal. per 100 sq. ft. or CP-10 Coating at the rate of 1½ gal. per 100 sq. ft.

All sheets shall be broomed carefully in order to assure complete adhesion of felts.

When open eaves or gables occur, carry roofing felt down over edge and nail securely into vertical face with 1-in. roofing nails driven through tin caps spaced 4 in. on center.

Each application of CP-15 Cement between plies shall be at the rate of 2 gal. per 100 sq. ft.

STEEP DECK APPLICATION WHEN INCLINE EXCEEDS 1½ IN. PER FT.

In applying the above specification on deck having slope exceeding 1½ in. per ft., and not exceeding 5 in. per ft., all sheets shall be run at right angles to slope of deck and nailed 2 in. from back edge of each sheet, spacing nails on 8-in. centers.

For flashing and edging specifications, see page 24

SPECIFICATIONS FOR Carey COLD PROCESS BUILT-UP 15-YEAR ROOF

OVER CONCRETE, INSULATED STEEL AND CAREY THERMO-BORD DECKS

(Smooth Surface)

SPECIFICATION No. AS-2

CONSTRUCTION: 3 Plies—No. 20 Fiberock over
1 Ply—No. 45 Fiberock Base Sheet

INCLINE: ¾ in. to 5 in. per ft.

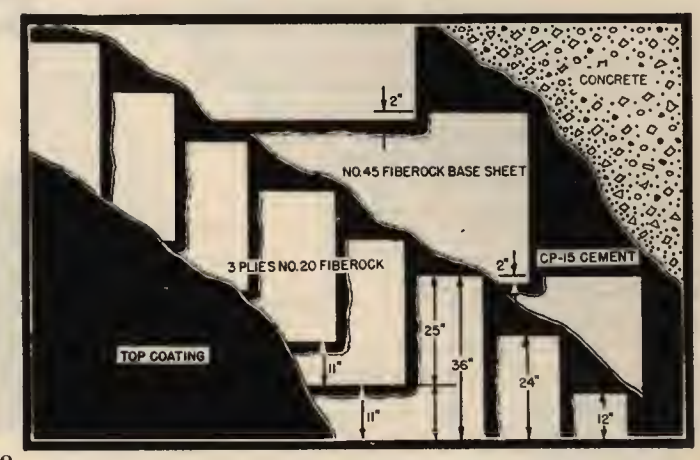
Underwriters' Laboratories Class "A" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

Felt: 1 Ply—No. 45 Carey Fiberock
3 Plies—No. 20 Fiberock

Ply Cement: CP-15 Cement 8 gal.

Top Coating: CP-15 Coating 2 gal.
or CP-10 Coating 1½ gal.



DECK SURFACES

The roof deck over which this specification is to be applied shall be dry, smooth, free from rubbish and debris and free from objectionable low spots and depressions. Roof must be applied during dry, favorable weather. Metal decks must be covered with 2 plies of No. 15 Feltex and at least ½ in. of approved insulation.

FELT PREPARATION

The No. 45 Fiberock Base Sheet is to be cut in strips not over 18 ft. long and to be stacked flat for a period of at least four hours before being used.

CANT BLOCKS

A cant block shall be installed in all angles formed by the intersection of the roof deck and vertical surfaces; this cant block to be either a Carey Elastite Cant Block or a wood cant cut out of 4 x 4-in. lumber ripped diagonally.

APPLICATION

Over the roof deck apply CP-15 Cement at the rate of 2 gal. per 100 sq. ft. and embed in same, when it becomes tacky, a layer of No. 45 Fiberock Base Sheet lapping same 2 in. Cement between laps with CP-15 Cement. Over the surface of the No. 45 Fiberock Base Sheet and starting at the eave or low point of the roof, apply Carey CP-15 Cement and into same embed, when tacky, a 12-in. width of Carey No. 20 Fiberock. Coat the surface of the No. 20 Fiberock with Carey CP-15 Cement and carry same to a point 12 in. above the upper edge of the 12-in. wide sheet and, when this cement becomes tacky, embed in same a 24-in. wide sheet of No. 20 Fiberock. Coat the surface of the 24-in. width of No. 20 Fiberock with CP-15 Cement and carry same to a point 12 in. beyond the upper edge of the 24-in. sheet, and when the cement becomes tacky embed in same a 36-in. wide sheet. Apply CP-15 Cement from a point 11 in. above the lower edge of the sheet to a point 11 in. above the upper edge of the sheet and when this cement becomes tacky embed in same the next full width sheet of No. 20 Fiberock, lapping same over previous sheet 25 in. leaving 11 in. exposed. Continue this application until roof has been completed. Over the surface of this construction apply CP-15 Roof Coating at the rate of 2 gal. per 100 sq. ft. or CP-10 Coating at the rate of 1½ gal. per 100 sq. ft.

All roofing sheets shall be carried to top of cant block.

All sheets shall be broomed carefully in order to assure complete adhesion of felts.

When open eaves or gables occur, carry roofing felt down over edge and nail securely into vertical face with 1-in. roofing nails driven through tin caps spaced 4 in. on center.

Each application of CP-15 Cement between plies shall be at the rate of 2 gal. per 100 sq. ft.

STEEP DECK APPLICATION WHEN INCLINE EXCEEDS 1½ IN. PER FT.

In applying the above specification on deck having slope exceeding 1½ in. per ft., and not exceeding 5 in. per ft., all sheets shall be run at right angles to slope of deck and nailed at point 2 in. from back edge of each sheet, spacing nails on 8-in. centers. If deck does not permit nailing, nailing strips spaced 3 ft. on centers shall be provided by others.

For flashing and edging specifications, see page 24

SPECIFICATIONS FOR Carey COLD PROCESS BUILT-UP 10-YEAR ROOF

OVER WOOD AND PRECAST GYPSUM DECKS

(Smooth Surface)

SPECIFICATION No. BS-1

CONSTRUCTION: 3 Plies—No. 20 Fiberock over
1 Ply—No. 45 Fiberock Base Sheet

INCLINE: ¾ in. to 5 in. per ft.

Underwriters' Laboratories Class "B" Rating

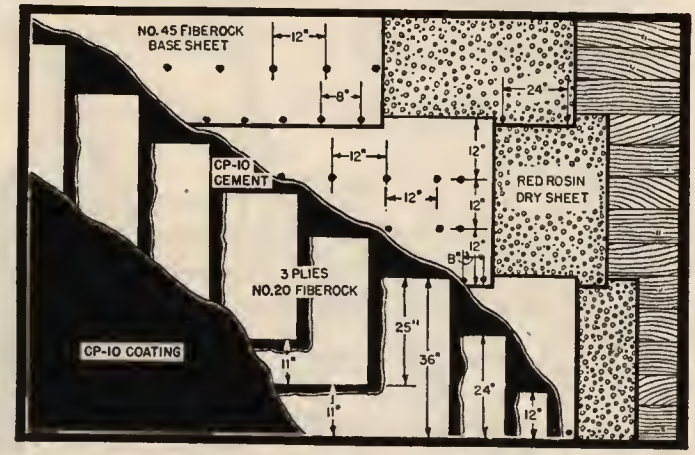
MATERIALS REQUIRED PER 100 SQ. FT.

Paper: 1 Ply—Red Rosin Dry Sheet

Felt: 1 Ply—No. 45 Carey Fiberock
3 Plies—No. 20 Fiberock

CP-15 Cement: 6 gal.

CP-10 Coating: 1½ gal.



DECK SURFACES

Wood Deck—Before this Built-Up Roofing Specification is applied, the deck shall be covered with Red Rosin Dry Sheet or Sub Grade Felt, Polar Brand Sheathing or a substitute of similar nature, same to be lapped approximately 2 in. and secured to the deck by occasional nailing.

Gypsum Decks—Gypsum decks must be thoroughly dry prior to application of roofing. The Red Rosin Dry Sheet or a substitute of a similar nature is required on pre-cast gypsum decks. Base sheets should be secured to gypsum decks by use of "Viking" or approved staples through tin caps instead of nails.

FELT PREPARATION

The No. 45 Fiberock Base Sheet is to be cut in strips not over 18 ft. long and to be stacked flat for a period of at least four hours before being used.

CANT BLOCKS

A cant block shall be installed in all angles formed by the intersection of the roof deck and vertical surfaces; this cant block to be either a Carey Elastite Cant Block or a wood cant cut out of 4 x 4-in. lumber ripped diagonally.

APPLICATION

Over the deck apply a layer of No. 45 Fiberock Base Sheet lapping same 2 in. and nailing 8 in. on centers on laps and staggering 2 rows of nails through center of sheet, the first row 12 in. from the lower edge of sheet, and second row 12 in. from upper edge of sheet, spacing nails 12 in. on center. Use 1-in. "Simplex" nails or 1-in. roofing nails driven through tin caps on wood decks, and "Viking" staples through tin caps on precast gypsum decks.

Over the surface of the No. 45 Fiberock Base Sheet and starting at the eave or low point of the roof, apply Carey CP-15 Cement and into same embed when tacky a 12-in. width of Carey No. 20 Fiberock. Coat the surface of the No. 20 Fiberock with Carey CP-15 Cement and carry same to a point 12 in. above the upper edge of the 12-in. wide sheet and when this cement becomes tacky embed in same a 24-in. wide sheet of No. 20 Fiberock. Coat the surface of the 24-in. width of No. 20 Fiberock with CP-15 Cement and carry same to a point 12 in. beyond the upper edge of the 24-in. sheet, and when the cement becomes tacky embed in same a 36-in. wide sheet of No. 20 Fiberock. To the surface of the 36-in. wide sheet, apply CP-15 Cement from a point 11 in. above the lower edge of the sheet to a point 11 in. above the upper edge of the sheet and when this cement becomes tacky, embed in same the next full width sheet of No. 20 Fiberock, lapping same over previous sheet 25 in. leaving 11 in. exposed. Continue this application until roof has been completed. Over the surface of this construction apply CP-15 Roof Coating at the rate of 1½ gals. per 100 sq. ft.

All roofing sheets shall be carried to top of cant block.

All sheets shall be broomed carefully in order to assure complete adhesion of felts.

When open eaves or gables occur, carry roofing felt down over edge and nail securely into vertical face with 1-in. roofing nails driven through tin caps spaced 4 in. on center.

Each application of CP-15 Cement between plies shall be at the rate of 2 gal. per 100 sq. ft.

STEEP DECK APPLICATION WHEN INCLINE EXCEEDS 1½ IN. PER FT.

In applying the above specifications on deck having slope exceeding 1½ in. per ft., and not exceeding 5 in. per ft., all sheets shall be run at right angles to slope of deck and nailed 2 in. from back edge of each sheet, spacing nails on 8-in. centers.

For flashing and edging specifications, see page 24

SPECIFICATIONS FOR Carey COLD PROCESS BUILT-UP 10-YEAR ROOF

OVER CONCRETE, INSULATED STEEL AND CAREY THERMO-BORD DECKS

(Smooth Surface)

SPECIFICATION No. BS-2

CONSTRUCTION: 2 Plies—No. 20 Fiberock over
1 Ply—No. 45 Fiberock Base Sheet

INCLINE: ¾ in. to 5 in. per ft.

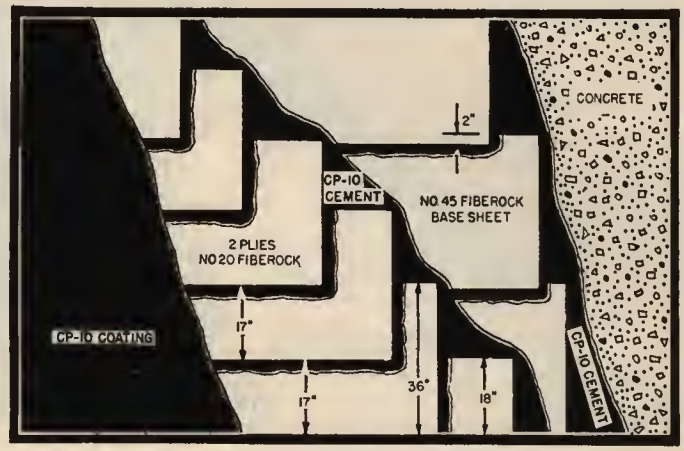
Underwriters' Laboratories Class "B" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

Felt: 1 Ply—No. 45 Carey Fiberock
2 Plies—No. 20 Fiberock

CP-15 Cement: 6 gal.

CP-10 Coating: 1½ gal.



DECK SURFACES

The roof deck over which this specification is to be applied shall be dry, smooth, free from rubbish and debris and free from objectionable low spots and depressions. Roof must be applied during dry, favorable weather. Metal decks must be covered with 2 plies of No. 15 Feltex and at least ½ in. of approved insulation.

FELT PREPARATION

The No. 45 Fiberock Base Sheet is to be cut in strips not over 18 ft. long and to be stacked flat for a period of at least four hours before being used.

CANT BLOCKS

A cant block shall be installed in all angles formed by the intersection of the roof deck and vertical surfaces; this cant block to be either a Carey Elastite Cant Block or a wood cant cut out of 4 x 4-in. lumber ripped diagonally.

APPLICATION

Over the roof deck, apply CP-15 Cement at the rate of 2 gal. per 100 sq. ft., and embed in same, when it becomes tacky, a layer of No. 45 Fiberock Base Sheet lapping same 2 in. Cement between laps with CP-15 Cement. Over the surface of the No. 45 Fiberock Base Sheet, and starting at the eave or low point of the roof, apply Carey CP-15 Cement, and into same embed, when tacky, a 18-in. width of Carey No. 20 Fiberock. Coat the surface of the No. 20 Fiberock with Carey CP-15 Cement and carry same to a point 17 in. above the upper edge of the 19-in. wide sheet and when this cement becomes tacky, embed in same a 36-in. wide sheet of No. 20 Fiberock. To the surface of the 36-in. wide sheet, apply CP-15 Cement from a point 17 in. above the lower edge of the sheet to a point 19 in. above the upper edge of the sheet and, when this cement becomes tacky, embed in same the next full width sheet of No. 20 Fiberock, lapping same over previous sheet 19 in. leaving 17 in. exposed. Continue this application until roof has been completed. Over the surface of this construction apply CP-10 Roof Coating at the rate of 1½ gal. per 100 sq. ft.

All roofing sheets shall be carried to top of cant block.

All sheets shall be broomed carefully in order to assure complete adhesion of felts.

When open eaves or gables occur, carry roofing felt down over edge and nail securely into vertical face with 1-in. roofing nails driven through tin caps spaced 4 in. on center.

Each application of CP-15 Cement between plies shall be at the rate of 2 gal. per 100 sq. ft.

STEEP DECK APPLICATION WHEN INCLINE EXCEEDS 1½ IN. PER FT.

In applying the above specification on deck having slope exceeding 1½ in. per ft. and not exceeding 5 in. per ft., all sheets shall be run at right angles to slope of deck and nailed at point 2 in. from back edge of each sheet, spacing nails on 8-in. centers. If deck does not permit nailing, nailing strips spaced 3 ft. on centers shall be provided by others.

For flashing and edging specifications, see page 24

SPECIFICATIONS FOR Carey COLD PROCESS BUILT-UP 5-YEAR ROOF

OVER WOOD AND PRECAST GYPSUM DECKS

(Smooth Surface)

SPECIFICATION No. CS-1

CONSTRUCTION: 2 Plies—Carey No. 43 Colcap Felt
INCLINE: ¾ in. to 5 in. per ft.
Underwriters' Laboratories Class "C" Rating

MATERIALS REQUIRED PER 100 SQ. FT
Paper: 1 Ply—Red Rosin Dry Sheet
Felt: 2 Plies—Carey Colcap Felt
Fly Cement: CP-5 Cement 2 gal.
Top Coating: Flextop (Fibrated) Coating 2 gal.
or Careyclad Coating 1½ gal.

DECK SURFACES

Wood Deck—Before this Built-Up Roofing Specification is applied, the deck shall be covered with Red Rosin Dry Sheet or Sub Grade Felt, Polar Brand Sheathing or a substitute of similar nature, same to be lapped approximately 2 in. and secured to the deck by occasional nailing.

Gypsum Decks—Gypsum decks must be thoroughly dry prior to application of roofing. The Red Rosin Dry Sheet or a substitute of a similar nature is required on pre-cast gypsum decks. All sheets should be secured to gypsum decks by use of "Viking" or approved staples through tin caps instead of nails.

FELT PREPARATION

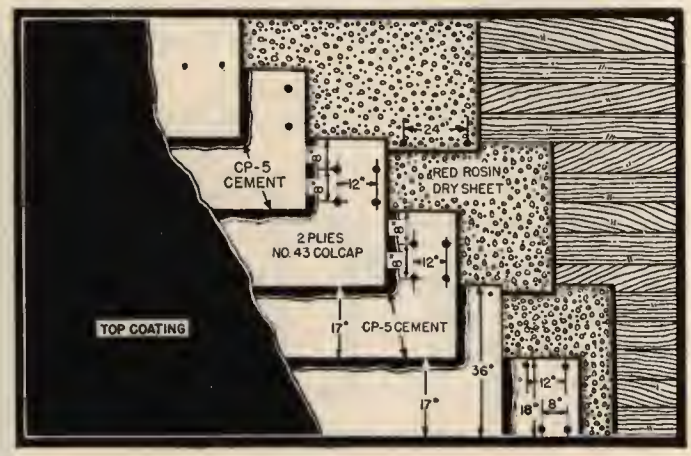
The No. 43 Colcap Felt Roofing is to be cut in strips not over 18 ft. long and to be stacked flat for a period of at least four hours before being used.

CANT BLOCKS

A cant block shall be installed in all angles formed by the intersection of the roof deck and vertical surfaces; this cant block to be either a Carey Elastite Cant Block, or a wood cant cut out of 4 x 4-in. lumber ripped diagonally.

APPLICATION

Over the deck starting at the eaves, or at the low point of the roof, apply an 18-in. width of Carey Colcap Felt nailing same along the lower edge, using 1-in. "Simplex" nails or roofing nails driven through tin caps, spacing same on 8-in. centers. Nail the upper edge enough to hold same in place. Use "Viking" staples through tin caps on precast gypsum decks.



Over the 18-in. strip, apply a coating of Carey CP-5 Cement at the rate of 2 gal. per 100 sq. ft. When this cement becomes tacky embed in it a 36-in. wide sheet of Carey Colcap Felt keeping lower edge of 36-in. wide sheet even with lower edge of 18-in. wide sheet. Nail the 36-in. wide sheet at points 8 in. and 16 in. from the upper edge of sheet, using 1-in. "Simplex" nails or roofing nails driven through tin caps, spacing same 12 in. on centers.

Next coat the surface of the Carey Colcap Felt with Carey CP-5 Cement to a point 19 in. from the upper edge of this sheet and, when the cement becomes tacky, embed in it a sheet of Carey Colcap Felt lapping the previous sheet 19 in., leaving 17 in. exposed. Nail as indicated above and continue until roof area is completed.

Coat the complete surface with Flextop Emulsion at the rate of 2 gal. per 100 sq. ft. or Careyclad Coating at the rate of 1½ gal. per 100 sq. ft.

All roofing sheets shall be carried to top of cant block.

All sheets shall be broomed carefully in order to assure complete adhesion of felts.

When open eaves or gables occur, carry roofing felt down over edge and nail securely into vertical face with 1-in. roofing nails driven through tin caps spaced 4 in. on center.

STEEP DECK APPLICATION WHEN INCLINE EXCEEDS 1½ IN. PER FT.

In applying the above specification on deck having slope exceeding 1½ in. per ft. and not exceeding 5 in. per ft., all sheets shall be run at right angles to slope of deck and nailed 2 in. from back edge of each sheet, spacing nails on 8-in. centers.

For flashing and edging specifications, see page 24

SPECIFICATIONS FOR Carey COLD PROCESS BUILT-UP 5-YEAR ROOF

OVER CONCRETE, INSULATED STEEL AND CAREY THERMO-BORD DECKS

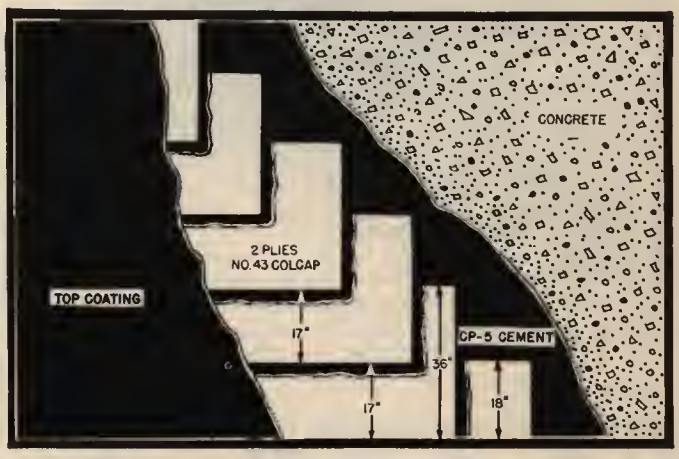
(Smooth Surface)

SPECIFICATION No. CS-2

CONSTRUCTION: 2 Plies—Carey No. 43 Colcap Felt
INCLINE: ¾ in. to 5 in. per ft.
Underwriters' Laboratories Class "C" Rating

MATERIALS REQUIRED PER 100 SQ. FT.

Felt: 2 Plies—Carey Colcap Felt
Ply Cement: CP-5 Cement 4 gal.
Top Coating: Flextop (Fibrated) Coating 2 gal.
or Careyclad Coating 1½ gal.



DECK SURFACES

Before coating is applied to the deck, same must be dry, smooth, clean and free from debris of all sorts. Roof must be applied during dry, favorable weather. Metal decks must be covered with 2 plies of No. 15 Feltex and at least ½ in. of approved insulation.

FELT PREPARATION

The No. 43 Colcap Felt Roofing is to be cut in strips not over 18 ft. long and to be stacked flat for a period of at least four hours before being used.

CANT BLOCKS

A cant block shall be installed in all angles formed by the intersection of the roof deck and vertical surfaces; this cant block to be either a Carey Elastite Cant Block or a wood cant cut out of 4 x 4-in. lumber ripped diagonally.

APPLICATION

Over the surface of the roof, and starting at the low point, apply a coating of Carey CP-5 Cement at the rate of approximately 2 gal. per 100 sq. ft. for a width of 18 in. and, when cement becomes tacky, embed in same an 18-in. width of Carey Colcap Felt. Over the surface of the 18-in. strip of felt, and to a point 18 in. above the upper edge, coat with CP-5 Cement at the rate of approximately 2 gal. per 100 sq. ft. and, when same becomes tacky, embed a 36-in. wide sheet of Carey Colcap Felt being sure that lower edge of the 36-in. wide sheet is kept even with the lower edge of the 18-in. wide sheet.

To this surface apply a coating of CP-5 Cement from a point 19 in. below the upper edge of the 36-in. wide sheet to a point 17 in. beyond the back edge on the roof, and embed in this cement, when it becomes tacky, a 36-in. wide sheet of Carey Colcap Felt. Continue this operation until entire roof is covered.

To the surface of this felt, apply a coating of Flextop Roof Coating at the rate of 2 gal. per 100 sq. ft. or Carey-clad Coating at the rate of 1½ gal. per 100 sq. ft.

All roofing sheets shall be carried to top of cant block.

All sheets shall be broomed carefully in order to assure complete adhesion of felts.

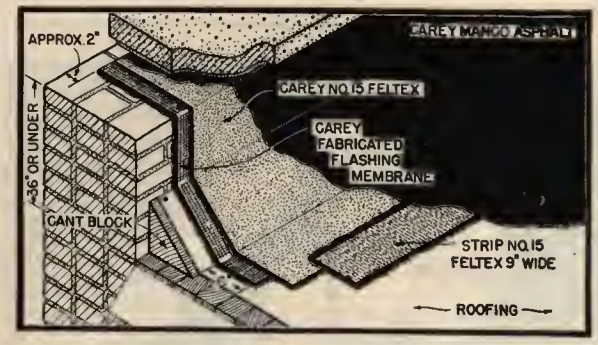
When open eaves or gables occur, carry roofing felt down over edge and nail securely into vertical face with 1-in. roofing nails driven through tin caps spaced 4 in. on center.

STEEP DECK APPLICATION WHEN INCLINE EXCEEDS 1½ IN. PER FT.

In applying the above specification on deck having slope exceeding 1½ in. per ft. and not exceeding 5 in. per ft., all sheets shall be run at right angles to slope of deck and nailed at a point 2 in. from back edge of each sheet, spacing nails on 8-in. centers. If roof does not permit nailing, nailing strips spaced on 3-ft. centers shall be provided by others.

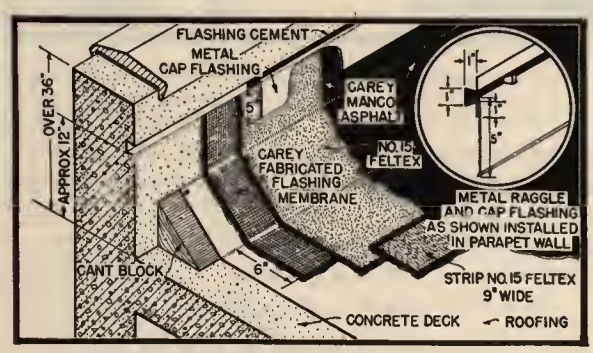
For flashing and edging specifications, see page 24

SPECIFICATIONS FOR Carey FLASHING DETAILS



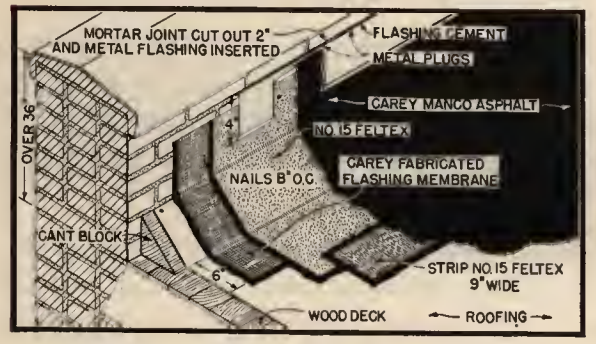
Carey Approved Flashing Detail No. 1—10-Year

Recommended for use on brick or concrete parapet walls not exceeding 36 in. in height, on which coping is to be applied.



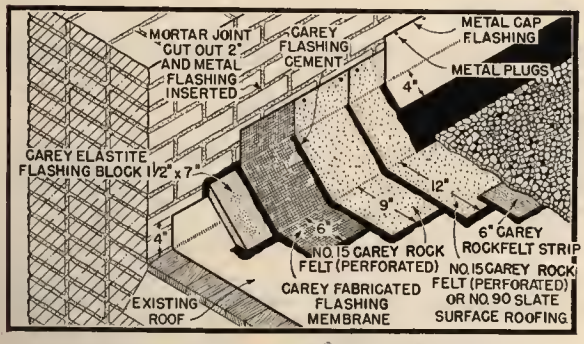
Carey Approved Flashing Detail No. 2—10-Year

Recommended for use on concrete parapet walls exceeding 36 in. in height.



Carey Approved Flashing Detail No. 3—10-Year

Recommended for use on brick parapet walls exceeding 36 in. in height.



Carey Approved Flashing Detail No. 4—20-Year

The flashing details 1, 2, 3, 4, 5 and 6 are adaptable to new or replacement work and may be modified to meet almost any unusual condition. The methods of installation are clearly indicated. The text below describes the material used in the flashing and the laying of the sheets over the wood cant strip.

CAREY FABRICATED FLASHING MEMBRANE

A two-ply preformed Fabricated Flashing Membrane consisting of laminations of Waterproofed Cotton Fabric and Feltex, bonded together at the factory with an especially blended and refined asphalt.

Weight of sheet per 100 sq. ft.....Approx. 32 lb.
Stretch before fracture.....Approx. 10%
Mullen test for tensile strength against felt side of Membrane .....Approx. 190 lb.

On account of the elasticity, stretch, strength and extreme flexibility of this material it will conform readily and bond securely with hot asphalt to parapet walls, angles and corners, thus tending to eliminate danger of cracks and breaks found in ordinary flashing material as the result of misuse, movement in the roof deck or settling of the building.

WOOD CANT BLOCK

Wood cant block shall be constructed out of a diagonal half of a 4 x 4 which shall be placed securely in the angle of the wall and cemented in place with a mopping of hot asphalt on hard surfaced decks or toe nailed at the lower edge of the cant block on wood decks.

The heavy base sheet and all top sheets of the built-up roof shall extend to the top edge of the wood cant block and be secured in place with nails driven through flat tin caps, after which a strip of Carey Fabricated Flashing Membrane shall be laid parallel with the cant block extending at least 8 in. up on the vertical side of the parapet wall and approximately 6 in. out on the roof and secured in place with a mopping of hot asphalt, and nailed into mortar joint along top edge on 8-in. centers.

The rest of the flashing construction shall be installed in accordance with Carey Approved Flashing Details Nos. 1, 2 and 3.

Carey Steep Asphalt shall be used throughout.

ALTERNATE—PLASTIC FLASHINGS

As an alternate construction it will be satisfactory to substitute Carey Flashing Cement in place of hot asphalt as the bonding material on details 1, 2 and 3 flashing constructions.

On details 2 or 3, where metal Counter Flashings are not desired, if Carey Flashing Cement is used as the bonding material, it will be satisfactory to use as a Counter Flashing over the top edge of the base flashing, a 4-in. wide strip of saturated cotton fabric laid in Carey Flashing Cement and trowel coated with same material.

TYPE 4

One—Install roofing felts in usual manner, carry all plies of roofing up parapet wall not less than 4 in.

Two—Install cant block, both edges to be set in plastic cement, nail through lower edge to secure in place.

Three—Apply layer of Fabricated Flashing Membrane set in plastic cement as shown in detail.

Four—Over Fabricated Flashing Membrane apply a layer of No. 15 Perforated Carey Rockfelt set in plastic.

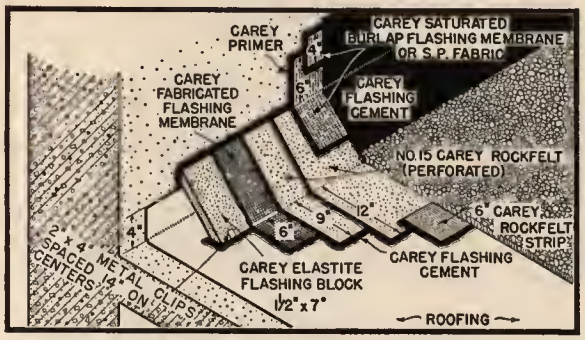
Five—A second ply of No. 15 Perforated Carey Rockfelt is then applied, set in plastic, or as an alternate to the second ply employ 90-lb. Slate Surface Roofing.

Six—Secure top edge of base flashing by means of galvanized nails driven through tin caps into first joint below the raglet, or if through the wall flashing is used, the first joint below the point at which through the wall flashing is installed.

Seven—Apply ⅛-in. layer Plastic Cement to surface of No. 15 Perforated Carey Rockfelt from top to bottom of cant. (Not required if 90-lb. slate surface used.)

Eight—Apply 6-in. strip of No. 15 Carey Rockfelt laid in plastic to seal edge of No. 15 Perforated Carey Rockfelt or 90-lb. slate surface.

Nine—Install copper counter flashing.



Carey Approved Flashing Detail No. 5—15-Year

TYPE 5

One—Install roofing felts in usual manner, carry all plies of roofing up parapet wall not less than 4 in.

Two—Install cant block, both edges to be set in plastic cement. Secure in place by metal clips as shown in detail.

Three—Apply layer of Fabricated Flashing Membrane set in plastic cement as shown in detail.

Four—Over Fabricated Flashing Membrane, set in plastic cement a layer of 15-lb. Perforated Carey Rockfelt.

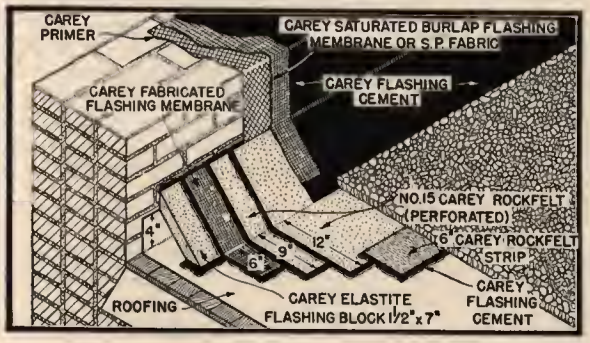
Five—Over the first layer of No. 15 Perforated Carey Rockfelt apply a second layer setting same in plastic cement.

Six—Prime parapet to height of 10 in. above top edge of base flashing. Set a 9-in. wide strip of saturated burlap, flashing membrane or S. P. Fabric in plastic, the upper edge of burlap to extend to a point 6 in. above top edge of cant.

Seven—Over the upper edge of saturated burlap, flashing membrane or S. P. Fabric counterflashing apply a 4-in. wide strip of saturated burlap, flashing membrane or S. P. Fabric set in plastic cement as a sealing strip (see detail).

Eight—Apply 6-in. strip of No. 15 Carey Rockfelt laid in plastic to seal edge of No. 15 Perforated Carey Rockfelt.

Nine—Apply ⅛-in. layer of plastic cement over entire construction carrying same to toe of cant block.



Carey Approved Flashing Detail No. 6—15-Year

TYPE 6

One—Install roofing felts in usual manner, carry all plies of roofing up parapet wall not less than 4 in.

Two—Install cant block, both edges to be set in plastic cement, nail through lower edge to secure in place.

Three—Apply layer of Fabricated Flashing Membrane set in plastic cement as shown in detail.

Four—Over Fabricated Flashing Membrane apply a layer of No. 15 Perforated Carey Rockfelt set in plastic.

Five—Over the first layer of No. 15 Perforated Carey Rockfelt apply a second layer setting same in plastic cement.

Six—Prime face and top of parapet wall.

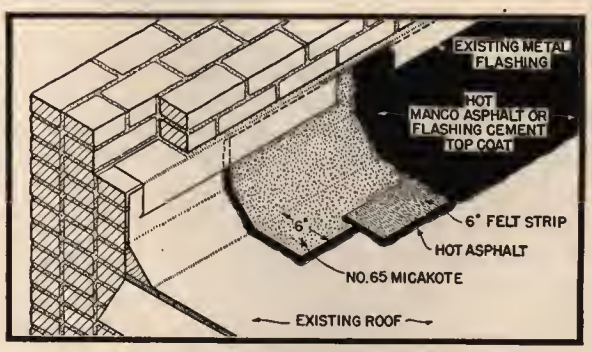
Seven—Apply layer of saturated burlap, flashing membrane or S. P. Fabric set in plastic cement, starting from a point 1 in. from exterior face of parapet wall and carrying saturated burlap, flashing membrane or S. P. Fabric down face of parapet to a point half way down face of cant block.

Eight—Apply 6-in. strip of No. 15 Carey Rockfelt laid in plastic to seal edge of No. 15 Perforated Carey Rockfelt.

Nine—Coat entire surface of saturated burlap, flashing membrane or S. P. Fabric with finish coat of plastic cement carrying same down to toe of cant block.

ALTERNATE FLASHING DETAILS

For Use on Reroofing Work Only



Carey Approved Flashing Detail No. 3A—10-Year
(For reroofing work only)

Flashing Detail 3A—10-Year—Existing metal flashing to be raised as high as possible without danger of fracturing same. The 65-lb. Mica Kote sheet should be applied in lengths not exceeding 8 ft. These 8-ft. lengths should be applied with hot asphalt, coating both the surface to which the materials are to be applied and the surface of the Mica Kote sheet and then immediately put in place.

These maximum 8-ft. sections should have 6-in. end laps and these end laps stripped with fabric.

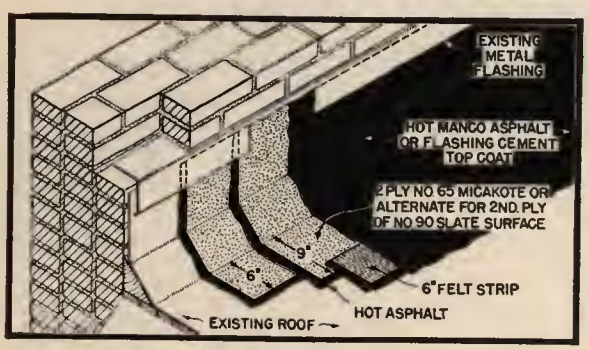
A 6-in. strip of No. 15 Carey Rockfelt or Feltex is then applied, overlapping the bottom edge of the 65-lb. Mica Kote and secured with hot asphalt.

Exposed surface of Mica Kote should be solid mopped with hot asphalt or coated with Flashing Cement.

Metal Counter Flashing to be carefully bent down capping this construction.

SPECIFICATIONS FOR Carey ALTERNATE FLASHING DETAILS

For Use on Reroofing Work Only (Cont'd)



Carey Approved Flashing Detail No. 4A—20-Year
(For reroofing work only)

Flashing Detail 4A—20-Year—Existing metal flashing to be raised as high as possible without danger of fracturing same. A 65-lb. Mica Kote sheet is applied in lengths not exceeding 8 ft. These 8-ft. lengths are applied in hot asphalt, coating both the surface to which the material is to be applied and the surface of the Mica Kote sheet and then immediately put in place.

These maximum 8-ft. lengths should have 6-in. end laps.

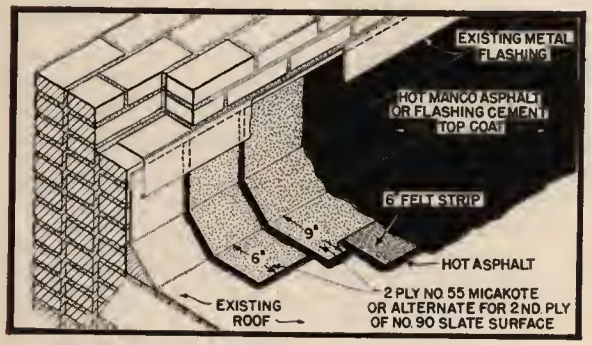
A second ply of 65-lb. Mica Kote is installed in the same manner by coating both the Mica Kote that is in place and the back surface of the second ply. These are to be applied in maximum 8-ft. lengths with the laps staggered from the first ply. These end laps should be 6 in. and stripped with fabric.

As an alternate to the second ply of 65-lh. Mica Kote, we would approve the use of 90-lb. Slate Surface Roofing.

A 6-in. strip of No. 15 Carey Rockfelt or Feltex is then applied overlapping the bottom edge of the 65-lb. Mica Kote (or 90-lb. Slate Surface Roofing) and secured with hot asphalt.

Exposed surface of Mica Kote should then be solid mopped with hot asphalt or coated with Flashing Cement. Hot asphalt or coating not required with use of 90-lb. Slate Surface sheet.

Metal Counter Flashing to be carefully bent down capping this construction.



Carey Approved Flashing Detail No. 5A—15-Year
(For reroofing work only)

Flashing Detail 5A—15-Year—Existing metal flashing to be raised as high as possible without danger of fracturing same. A 55-lb. Mica Kote sheet is applied in lengths not exceeding 8 ft. These 8-ft. lengths are applied in hot asphalt, coating both the surface to which the material is to be applied and the surface of the Mica Kote sheet and then immediately put in place.

These maximum 8-ft. lengths should have 6-in. end laps.

A second ply of 55-lb. Mica Kote is installed in the same manner by coating both the Mica Kote that is in place and the back surface of the second ply. These are to be applied in maximum 8-ft. lengths with the laps staggered from the first ply. These end laps should be 6 in. and stripped with fabric.

As an alternate to the second ply of 55-lb. Mica Kote, we would approve the use of 90-lb. Slate Surface Roofing.

A 6-in. strip of No. 15 Carey Rockfelt or Feltex is then applied overlapping the bottom edge of the 55-lh. Mica Kote (or 90-lb. Slate Surface Roofing) and secured with hot asphalt.

Exposed surface of Mica Kote should then be solid mopped with hot asphalt or coated with Flashing Cement. Hot asphalt or coating not required with use of 90-lb. Slate Surface sheet.

Metal Counter Flashing to be carefully bent down capping this construction.

FLASHINGS FOR COLD PROCESS SPECIFICATIONS

Base Flashings

Base flashings used in connection with Cold Process Built-Up Roofing shall be constructed as follows:

1. Carry all plies of roofing felts to the top of cant block.

2. Apply to parapet wall to a height of at least 6 in. above top of cant block, CP-5, or CP-15 Cement and carry same down over cant block to a point at least 6 in. beyond the toe of the cant block.

3. When the cement used becomes tacky, embed in same a layer of Fabricated Flashing Membrane, fabric side in, pressing same firmly into the cement. Coat the surface of the Fabricated Flashing Membrane with the cement used and, when it becomes tacky, embed in same a layer of No. 20 Fiberock. Secure top edge of base flashing by means of nails driven through tin caps into first brick joint below top of flashing felt.

4. Strip edge of base flashing on roof with 4-in. wide strip of S. P. Fabric set in CP-5, or CP-15 Cement.

5. Counter flash with metal cap flashing on brick walls; on concrete walls with 4-in. strip of S. P. Fabric, set in flashing cement along top edge of flashing.

6. Coat flashing with Flextop, CP-10, or CP-15 Coatings.

Flashing-Skylight, Vent Stack and Scuttle Curb Flashings

Cant blocks shall be installed in the angle formed by the intersection of the roof deck and skylight, vent stack and scuttle curb.

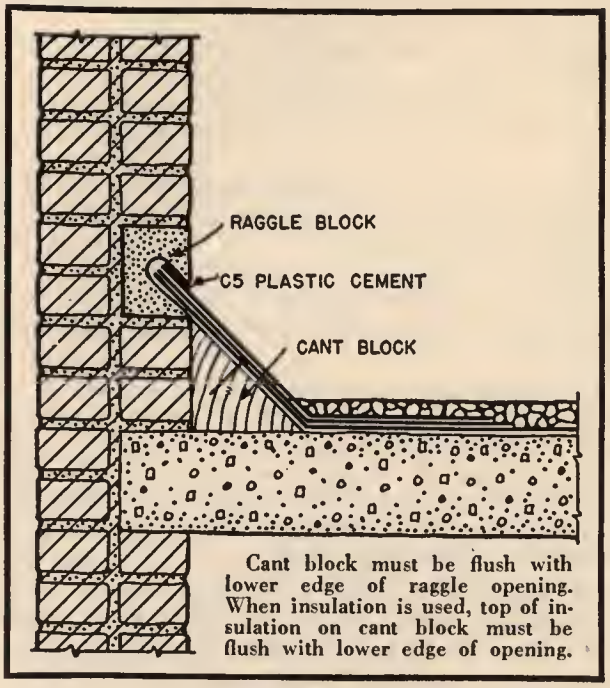
These curbs shall be flashed as described above except that flashing shall be carried up and on top of skylight, vent stack or scuttle curb and nailed on top edge with large head roofing nails on 4-in. centers. These nails to be protected with a strip of S. P. Fabric, set in and coated with CP-5, or CP-15 Cement, and brought down over the edge at least 2 in.

Edging

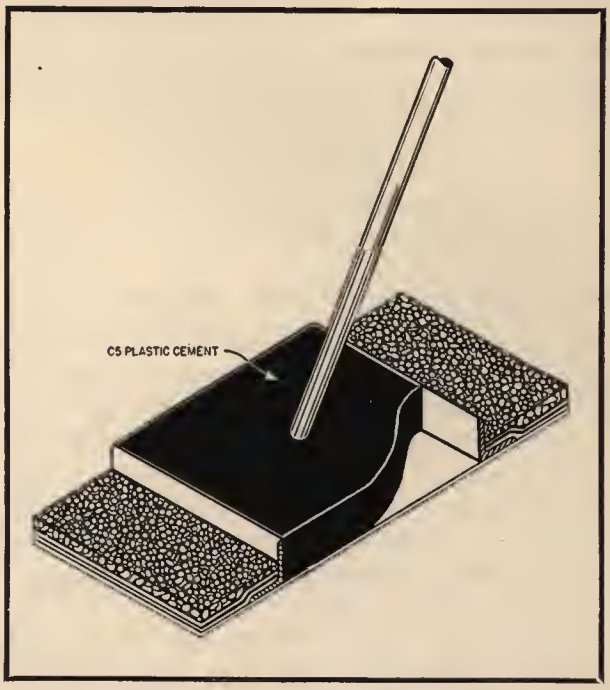
At all open eaves or gables, the roofing that has been turned down over the edges shall be protected by applying a reinforcing strip of S. P. Fabric set in and coated with Flextop, CP-10, or CP-15 Coatings. This fabric shall cover nails on vertical face and be carried to a point 6 in. from edge on the roof surface.

Alternate Edging

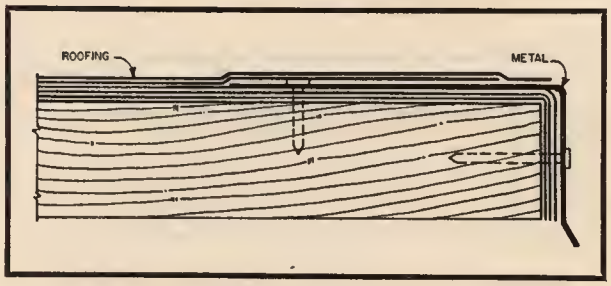
As an alternate edging, a metal edge strip can be installed. This edge strip shall be of sufficient depth to cover vertical edge completely and extend on roof 4 in. It shall be secured in place by 1-in. nails spaced on 4-in. centers driven through flange of edging strip into roof deck. The roof flange of the metal edging shall be stripped with two strips of S. P. Fabric. The first strip shall be 6 in. wide and the second 8 in. wide. Both strips shall be set in and coated with Flextop, CP-10, or CP-15 Coatings.



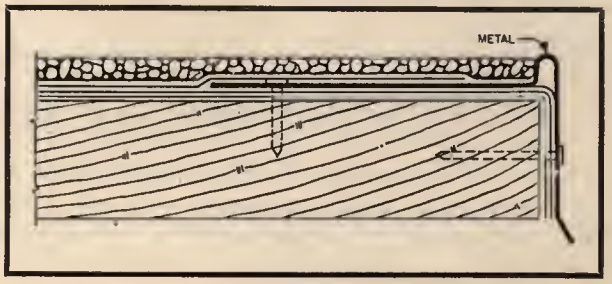
Raggle Construction



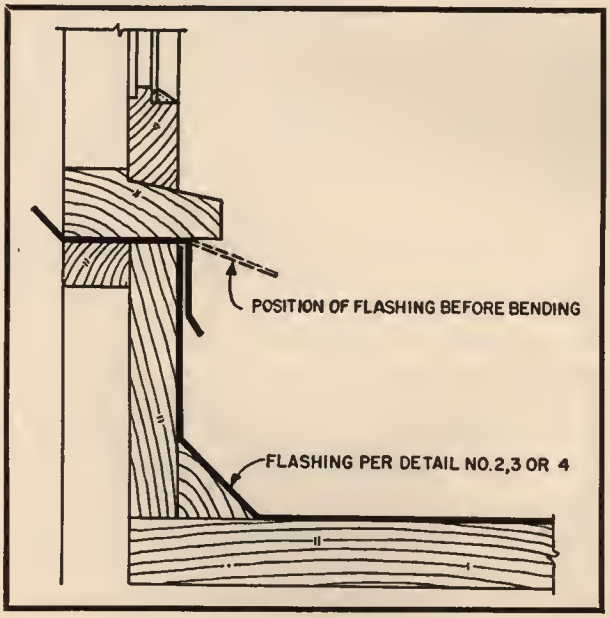
Plastic Pocket for Guy Rods, Posts, etc.



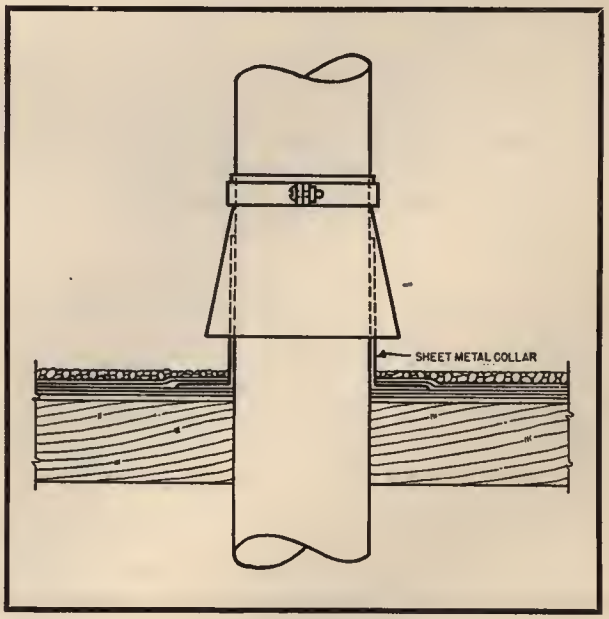
Metal Edge Trim



Metal Gravel Stop



Monitor Sash or Skylight Flashing



Vent or Duct Flashing

BOND REQUIREMENT

In order to have a bond issued, specifications must be followed exactly as indicated in this catalog.

On asphalt constructions, all asphalt must be Carey Manco Asphalt and on coal tar pitch constructions, coal tar pitch must be of an approved Carey type.

APPLYING ROOFING OVER AN EXISTING ROOF

We do not approve mopping a new roof over an old roof as this invariably traps moisture and causes trouble. We recommend nailing the base sheet to the old roof or if nailing not permitted, strip mop to the center of the sheet with the roll so that movement will be permitted at both edges of the sheet. In order to obtain a bond on a reroofing job, inspection must be made by a Carey representative of the surface of the present roof to which the new roof is going to be applied.

Carey will not bond a roof on a building on which 2 or 3 previous roofs are in place. In order to obtain bond, previous roofs will have to be removed in their entirety to the deck.

QUANTITIES OF ASPHALT ON A CONCRETE OR GYPSUM DECK

We recommend the base sheet to be mopped to the deck using approximately 40 lb. of asphalt per 100 sq. ft.

The amount of asphalt used between plies should be about 25 lb. per 100 sq. ft. On a top surface smooth asphalt roof, we recommend 25 lb. of asphalt per 100 sq. ft.

With slag or gravel surface we recommend 50 lb. of asphalt to be used in the flood coat per 100 sq. ft.

TAR PITCH

We recommend the base sheet to be mopped to the deck with approximately 50 lb. of tar pitch per 100 sq. ft.

The amount of tar pitch between plies should be about 25 lb. per 100 sq. ft. With slag or gravel surface, we recommend 75 lb. of tar pitch to be used in the flood coat per 100 sq. ft.

RECOMMENDED SIZE OF SLAG AND GRAVEL

The recommended size for both slag and gravel is known as minus ¾ plus ¼. This requires no gravel or slag to be larger than will pass through a ¾-in. screen mesh and none smaller than would pass through a ¼-in. mesh to be used.

GENERAL REQUIREMENTS AND SPECIAL CONSTRUCTION RECOMMENDATIONS

Flashing Requirement—Bonds will not be issued on roofs unless the flashing complies with the details shown on pages 22, 23 or 24, or is of a type approved by Carey.

Storage of Roofing Materials—All roofing materials shall be properly stored on the job and roofing felts particularly should be stored under shelter wherever possible. Where no shelter is available, rolls of roofing felt should be stood on end on a base of old boards and covered with a tarpaulin or felt to prevent exposure to the elements. Roofing felts that are allowed to stand out in the weather unprotected do not make good roofs.

Preparation of Decks—All roof decks should be examined carefully to be sure that they are hard surfaced, thoroughly dry, clean, and of the proper smoothness to receive the Built-Up Roofing. Any defects on any type of roof deck should be immediately reported to the general contractor and a request made that the defects be corrected before the roofing is applied.

Laying of Felts—All felts that are to be embedded in asphalt or tar should be set to a line and rolled into the asphalt or tar. The mopping of the asphalt should not be made too far ahead of the roll but a full bead of asphalt or tar should be kept built up immediately in front of the roll so that a full coating of asphalt or tar is assured over the entire roof between all plies.

In rolling the felt, the felts should be kept lined up, and in case of any deviation from the lines indicating the proper plies of felt to be applied, the rolls should be cut off and reset. Under no condition should the asphalt in which the felt is to be rolled be mopped out 10 or 15 ft. ahead of the roll. To do so, permits the asphalt or tar to chill and proper bond is not secured between the plies of felt.

Precaution to Take When Using Tar Pitch—When a tar and gravel roof is being applied to a roof having open eaves, the first two plies of felt along all edges should be allowed to extend 3 to 4 in. beyond the edge of the roof and to remain dry. After the next two or three plies of Tarred Felt are laid in even with the edge of the eave, the bottom two plies of dry felt are to be turned back on top of the other plies and mopped to same. This method of procedure eliminates the possibility of tar escaping from between the plies of felt and running down the side of the building. With tar and gravel roofs, it is absolutely essential that gravel stops be used at all points where indicated particularly along edge of roofs and around roof drains.

Carey ROOF INSULATION

FOR APPLICATION OVER WOOD, CONCRETE AND STEEL DECKS

GENERAL

THE PHILIP CAREY MANUFACTURING COMPANY makes the following recommendations for the installation of roof insulation.

THE PHILIP CAREY MANUFACTURING COMPANY roofing guarantee or guarantee bond covering Built-Up Roofing and flashing does not cover roof insulation nor will THE PHILIP CAREY MANUFACTURING COMPANY be responsible for any damage caused by or the result of the use of insulation.

CANT STRIPS

The cant strips shall be set on top of the insulation and be secured by nailing through the insulation to the deck. On noncombustible decks when the cant is formed with concrete or poured gypsum, a square shoulder, the full thickness of the insulation at the toe of the cant shall be formed.

NAILS

Galvanized roofing nails driven through flat tin disks, or "Simplex" nails, shall be used.

For use with insulation, nails shall be of sufficient length to pass through the insulation board and penetrate into but not through the roof deck. On steel deck construction, where nailing is necessary, the nails shall be soft nose roofing nails which shall not penetrate the steel deck.

CUT OFFS

At the end of each day's work, cut offs consisting of one ply of No. 15 Feltex shall be applied over exposed edges of insulation. This felt shall extend onto the deck at least 6 in. and 4 in. on top of the insulation. When cork insulation is used, cut offs should be removed when work is resumed; or, if cut offs are not removed, they should all run in one direction.

GENERAL APPLICATION OF INSULATION

Insulation used must be of the approved types listed below, and be thoroughly dry.

For all types of roofs

Cork
Foam glass
Fibre Board—2 ft. x 4 ft. max. size pieces
Poured Vermiculite with Portland Cement (Hard consistency)

For asphalt roofs

Fibre Glass—Owens-Corning type C69K only

No more insulation shall be laid out on the roof than can be protected by asphalt and felt in case of sudden weather change. Where more than one layer of insulation is used, joints shall be broken.

OVER WOOD AND PRECAST GYPSUM DECKS

Application of vapor stop below insulation—The wood roof deck shall be covered with one layer of red rosin sheathing paper, or a suitable substitute weighing not less than 5 lb. per 100 sq. ft. The sheathing paper shall be lapped 2 in. and secured to the deck by occasional nailing. Where precast gypsum decks are used, sheathing may be omitted.

Two plies of No. 15 Feltex shall be laid over the entire surface, lapping each sheet 19 in., and mopping between plies. Back nail all felts on 12-in. centers.

Application of insulation—Mop the surface of the No. 15 Feltex with Carey Asphalt, having a melting point of not less than 190° F., and embed in same the roof insulation.

When the incline of deck exceeds 2 in. per ft., each sheet of insulation shall be anchored to the deck at each of the four corners. All nails shall be long enough to penetrate the deck at least ¾ in.

Roofs for application over insulation—Specifications No. 3-A, 3-B, 4-A, 4-B, 11-A, 11-C, 12-A, 12-B, 12-C, AC-2, AS-2, BS-2, and CS-2.

OVER POURED CONCRETE OR PRECAST CONCRETE, STEEL, OR POURED GYPSUM DECKS

Application of vapor stop below insulation—Over the deck apply a uniform coating of asphalt. (Primer first used on concrete.)

Into this mopping of asphalt, embed two plies of No. 15 Feltex applying same in shingle construction lapping each sheet 19 in. and mopping between felts so that at no place shall felt touch felt.

If precast concrete slab is used, strip or spot mop with Carey Asphalt to a point 4 in. from the edge of each joint.

Application of insulation—Over the surface of the No. 15 Feltex, apply a coating of Carey Asphalt having a melting point of not less than 190° F., and embed in same while hot, the roof insulation.

When incline of deck is over 2 in. per ft. and deck will not permit nailing, nailing strips must be provided and insulation anchored to each nailing strip with nails spaced approximately 8 in. apart.

Roofs for application over insulation—Specifications No. 3-A, 3-B, 4-A, 4-B, 11-A, 11-C, 12-A, 12-B, 12-C, AC-2, AS-2, BS-2, and CS-2.

Carey

ESTABLISHED 1873

Architects may specify with confidence the type of Carey Roofs described in this catalog for use on all standard types of deck construction. More than half a century of manufacturing and installation experience and the high standards and prestige of The Philip Carey Manufacturing Company stand behind each job.

ENGINEERING SERVICE

Architects are invited to write the Built-Up Roofing Department for recommendations as to the roofing or waterproofing construction especially adapted to specific types of deck construction or for special specifications to meet unusual service conditions.

DISTRICT OFFICES

Atlanta 3, Ga.	The Philip Carey Mfg. Company	427-29 Candler Building
Boston 29, Mass.	The Philip Carey Mfg. Company	267 Medford Street, Charlestown Dist.
Chicago 6, Ill.	The Philip Carey Mfg. Company	205 Wacker Drive
Cincinnati 2, Ohio	The Philip Carey Mfg. Company	217-219 E. Eighth Street
Cleveland 3, Ohio	The Philip Carey Mfg. Company	5906-5916 Euclid Avenue
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THE PHILIP CAREY MFG. COMPANY

General Offices: CINCINNATI 15, OHIO

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Anaconda SHEET COPPER FOR BUILDING CONSTRUCTION

ANACONDA
from mine to consumer
REG. U.S. PAT. OFF.

THE AMERICAN BRASS COMPANY

General Offices, Waterbury 88, Connecticut

Subsidiary of Anaconda Copper Mining Company • District Offices in Principal Cities

Anaconda

SHEET COPPER FOR BUILDING CONSTRUCTION

FOR centuries copper has been the roofing material of ultimate quality, has adorned monumental buildings and endured functionally for hundreds of years. Because of the attractive green patina which forms on copper in most locations, no other material will so enhance in beauty with age. Copper combines the qualities of stateliness and charm, warmth and dignity, with unparalleled service life.

The American Brass Company produces sheet copper in all standard sizes, weights and tempers for roofing, flashing, valleys, hanging and built-in gutters, leaderheads and leaders, etc., as well as specially developed products such as Economy Copper Roofing, "Electro-Sheet" Copper and Anaconda Through-Wall Flashing.

DIMENSIONS AND WEIGHTS OF ANACONDA SHEET COPPER

Soft or Cold Rolled Standard Roofing Sheets

Weight Ounces Per Sq. Ft.	Width Inches	Length Inches	Estimated Pounds Per Sheet
14	24, 30 & 36	96	14, 17½ & 21
16	24, 30 & 36	96	16, 20 & 24
16	24, 30 & 36	120	20, 25 & 30
18	24, 30 & 36	96	18, 22½ & 27
20	24, 30 & 36	96	20, 25 & 30
24	24, 30 & 36	96	24, 30 & 36
32	24, 30 & 36	96	32, 40 & 48

Soft or Cold Rolled Strip Copper

14	20	96	11⅔
16	*10	96	6⅔
16	*12	96	8
16	*14 & *15	96	9⅓ & 10
16	20	96	13⅓
16	20	120	16⅔
18	20	96	15
20	20	96	16⅔
24	20	96	20
32	20	96	26⅔

*Cold Rolled only.

Soft Copper in Rolls

16	6, 7 & 8 10 & 12 14 & 16 18 & 20	Varying Lengths	80, 90, 100 lb. approx. per roll.

Anaconda Economy Copper Roofing

Weight Ounces Per Sq. Ft.	Width Inches	Length Inches	Estimated Pounds Per Square
10	16	72	80

Anaconda Through-Wall Flashing and Through-Wall Corner Flashing

See Pages 6 and 7 for dimensions.

Anaconda Stamped Spandrel Beam Flashing

Weight Ounces Per Sq. Ft.	Width Inches	Length Feet
10	8¼" x 24¼"	5 or 8

Anaconda Flashing Reglets

Weight Ounces Per Sq. Ft.	Size When Formed	Random Lengths
24	¾" x 1¾"	4 to 12 ft.

Anaconda "Electro-Sheet" Copper

Weight Ounces Per Sq. Ft.	Width Inches	Length
1, 2 & 3	30, 60, 61, 62 & 64†	Unlimited

†Untrimmed.

CORNICE TEMPER SHEET COPPER

Recommended as Most Satisfactory Roofing Sheet

LABORATORY tests and studies in the construction field have developed the conclusion that cold rolled, light tempered sheet copper, commonly known as cornice temper copper, is the highest quality, most satisfactory material for copper roofing of all types.

Cornice temper copper, with greater stiffness and higher yield strength, is better able to distribute stresses induced by contraction and expansion caused by temperature changes, and to eliminate sharp local buckling which frequently results in fatigue failure. The stiffer sheets also slide more readily in expansion joints and other mechanical devices used to absorb contraction and expansion.

Selection of Weights

Studies of copper roofing sheets developed another important element in obtaining the most satisfactory installation, and that is proper selection of weight or thickness for design and area of installation. The following tables suggest suitable weights of copper for various types of roofing. On page 4 is a chart showing relation of weights of copper to dimensions of box or built-in gutters.

ROOF PANS FOR STANDING SEAM COPPER ROOFS		
Stock Size	Gage Weight	Max. Flat Width Between Standing Seams
16″ x 72″	10 Oz.	13¾″
20″ x 96″	14 Oz.	17¾″
24″ x 96″	16 Oz.	21¼″
28″ x 96″	20 Oz.	25¼″
32″ x 96″	24 Oz.	29¼″

ROOFING SQUARES FOR FLAT LOCK SEAM COPPER ROOFING		
Stock Size	Gage Weight	Size of Squares
30″ x 96″	16 Oz.	12″ x 15″
28″ x 96″	18 Oz.	14″ x 16″
36″ x 96″	20 Oz.	16″ x 18″
36″ x 96″	24 Oz.	18″ x 24″
36″ x 96″	32 Oz.	24″ x 36″
30″ x 96″	40 Oz.	30″ x 60″
36″ x 96″	48 Oz.	36″ x 96″

SHEET COPPER FOR BUILT-IN GUTTERS

It has been demonstrated by tests and by practice that built-in or box gutters made from cold rolled, cornice temper sheet copper, if properly installed, will serve for many years without maintenance expense.

The gage of the metal should be proportional to the scale of the work beginning with a minimum of 16 ounces to the square foot. The chart on page 4 suggests a relationship between the width of the gutter, the length of the gutter between downspouts, and the gage of the copper. In wide gutters the heavier gages increase stiffness and thus reduce local buckling tendencies.

EXPANSION JOINTS

The expansion joint is one of the most important elements in the life of the gutter and special care should be exercised in its construction. The joints should be built in the gutter midway between all downspouts, and solder should be carefully applied so that it will not interfere in any way with a joint's ability to compensate for contraction and expansion.

In effect this joint is made by cutting the gutter in two and building a header into the end of each half, allowing a suitable clearance between headers for expansion and making the joint weather-tight with a sleeve type joint cover.

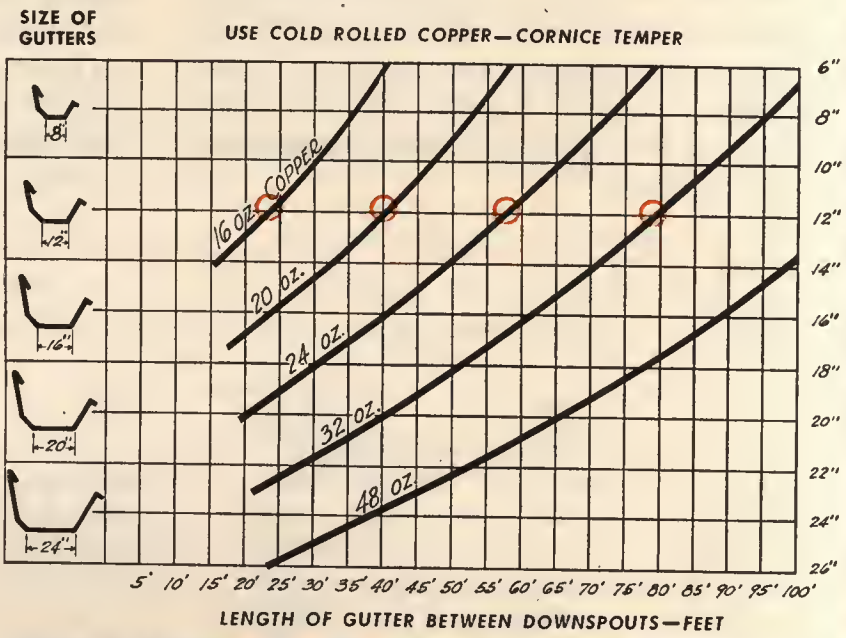
The headers are channel-shaped pieces of copper fastened to the gutter at its outline by means of simple soldered lap seam joints. The outstanding flanges at the tops of the headers must be wide enough to keep the joint cover engaged through extremes in temperature. At least a one inch space should be left between the headers for expansion, and increased at a rate of two inches per hundred feet distance between downspouts.

The function of the joint cover is to keep the space between the gutter ends dry under all weather conditions. This requires a loose lock of generous size to allow the necessary movement of the gutter but still so proportioned as to keep the flanges engaged and unaffected by the force of the wind.

Many otherwise perfect expansion joints are spoiled by soldering either the gutter-end flanges or the joint cover to the gutters, thereby nullifying the expansion joint.

SUGGESTED RELATIONSHIP

size and weight of Built-In Copper Gutters



Example of 12" gutter showing permissible increase in distance between downspouts in relation to the increase in thickness of copper.

Locate an Expansion Joint Midway Between all Downspouts

10-OUNCE ECONOMY* COPPER ROOFING

FOR SMALL AND MEDIUM-SIZED HOUSES AND INDUSTRIAL SAW-TOOTH ROOFS

The American Brass Company developed Anaconda 10-Ounce Economy Copper Roofing to provide a copper roof within design and cost limitations for small and medium-sized houses. Supplied in sheets weighing 10 ounces to the square foot and 16 inches wide, this material is applied by the standing seam method in panels approximately 13¾ inches wide. These narrow panels provide the same strength, rigidity and wind resistance obtained with thicker sheets and wider seam spacing, with equal advantages of extreme durability, water-tightness and protection from fire.

These narrow, 10-ounce sheets have also been

* Reg. U.S. Pat. Off.

economically and satisfactorily applied to industrial roofs of saw-tooth construction. The use of the lighter metal, which is more easy to form and apply than the customary 16-ounce or heavier sheets, brought installation costs much lower than those of heavier copper roofs. The same mechanical principles which made this roof so satisfactory for home roofing apply to the factory roof.

Anaconda "ELECTRO-SHEET" COPPER

Anaconda "Electro-Sheet" Copper, made in wide, thin sheets of unlimited length by electrolytic deposition, provides the positive and durable protection of copper at low cost. It is rust-proof, vermin-proof, non-porous, non-inflammable and impervious to penetration by water, air or moisture.

For most building purposes Anaconda "Electro-Sheet" Copper is supplied laminated with high grade building papers, fabrics or asphaltic compounds. When so laminated, it is extremely flexible and easy to install. This special copper sheet is made in thicknesses of .0013", .0027" and .004" (1 oz., 2 oz. and 3 oz. in weight per square foot), in standard widths of 30", 60", 62" trimmed, and 64" untrimmed. One side has a commercially bright finish.

APPLICATIONS

Laminated "Electro-Sheet" has provided economical solution to many varied problems of water, moisture, vapor and wind proofing. It is also used for shielding in buildings housing sensitive electrical equipment. Following are a number of the more common of its many applications:

Door and Window Flashing—A positive and lasting seal around door and window casings.

Spandrel Beam Flashing—Is used for this purpose in all types of building construction.

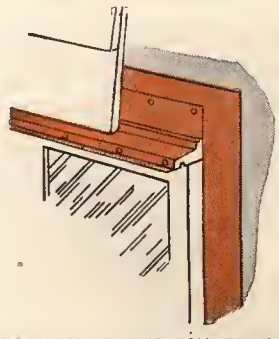
Damp-Proofing—Layers of "Electro-Sheet" applied with pitch, asphalt or other mastic over footings, the outside of foundations and between sub and finished floors in basements are effective protection against water or moisture entering the cellar. "Electro-Sheet" is also laid under cellarless houses, mopped down with roofing pitch, and as a foundation damp course to protect wood sills and framing.

Weatherproofing—Laminated "Electro-Sheet" applied to the sheathing of masonry veneered houses in place of building paper forms an impenetrable barrier to the weather.

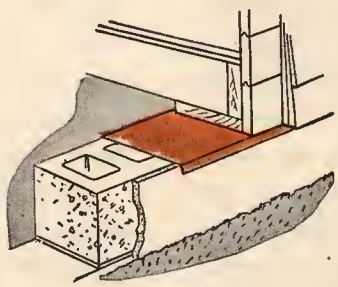
Heat Sealing—Laid with furring strips under attic floor joists to prevent escape of heat, or tacked to floor joists in the case of unfinished attics.

Vapor Seal—Applied over studs and joists after insulating material is in place to protect insulation from condensation of water vapor within the walls of the house.

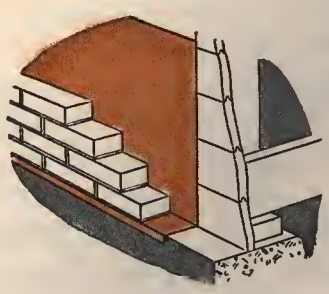
Ridge Flashing—Used to flash ridge poles on all types of shingled roofs.



DOOR AND WINDOW FLASHING



DAMP-PROOFING



WEATHERPROOFING

Anaconda THROUGH-WALL FLASHING

Anaconda Through-Wall Flashing is efficient, positive and durable, yet relatively inexpensive. It is readily adaptable to practically every masonry condition. The principal feature of its design consists of a series of zig-zag ridges 7/32″ high intersected at one end by a 7/32″ longitudinal ridge which acts as a dam, causing any accumulation of water to flow to the opposite face of the wall.

The zig-zag ridges prevent lateral movement in any direction. *The possibility of vertical movement may be disregarded* as a properly designed masonry wall has its mass and weight so proportioned in relation to wind and other forces that uplift does not occur under any normal condition except as a result of heaving by frost which, if of sufficient force to cause vertical movement of the wall or coping, would be sufficient to break the bond between masonry, mortar and flashing of any design. Actually, Anaconda Through-Wall Flashing assures minimum risk of heaving by frost as it is so designed that it will drain itself dry on a level bed.

This flashing, available in a variety of types and sizes as shown in the sketches on page 7, is made of 16-ounce Anaconda Copper.

All standard types of Through-Wall Flashing for 8″ and 12″ walls are carried in stock in eight-foot lengths. Special Anaconda Through-Wall Flashing is available on order in over-all widths up to and including 47″, with the corrugated area any width in multiples of 2″, from 8¼″ up to and including 36¼″, and the flat selvage on the dam side any width up to 4″. If open end corrugations without drain selvage are acceptable, the corrugated area of these special flashings may be obtained in any width up to 36¼″ without the restriction of being in 2″ multiples. These special flashings are also furnished in eight-foot lengths.

Because it can be bent and cut to fit on the job, Anaconda Through-Wall Flashing can be installed easily and quickly, with a minimum of delay to bricklayers and masons. Tight end joints can be made by overlapping one or two corrugations. When specified, solder is easily applied to the flat ends of the strips.

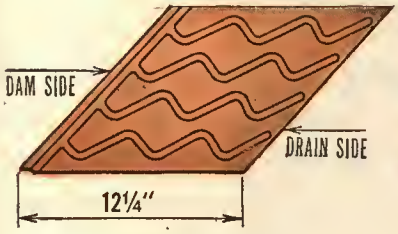
WHERE THROUGH-WALL FLASHING IS USED

Through-wall flashing should be installed under copings and at the base of parapet walls. It is important also that it be installed in the side walls at frequent vertical intervals—preferably at every floor, and at all openings such as door and window-heads and sills.

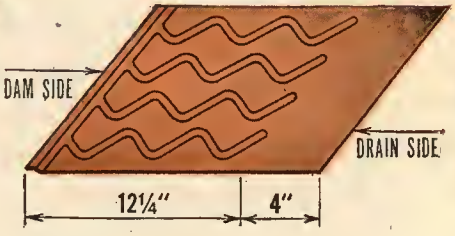
It is above the roof line that the greatest danger is incurred. There, with both faces exposed to the weather, either side of the wall is subjected to driving rain while, on the other side, the partial vacuum which is always present in the lee of a wind-break, exerts a powerful suction which aids the natural capillarity of the masonry in absorbing water. Meanwhile, water flowing through the joints of the coping is drawn into the masonry by gravity. The water thus accumulated gradually seeps downward and inward until the saturation point of the masonry is reached; then it flows off both faces of the wall, to the detriment of the supporting structure, plaster and decorations on the inside and disfiguring the appearance of the outside by precipitating a deposit of mineral salts on the masonry.

Through-wall flashing installed under the coping and at the base of the parapet intercepts this accumulation and diverts it to the roof or outside face of the wall as desired.

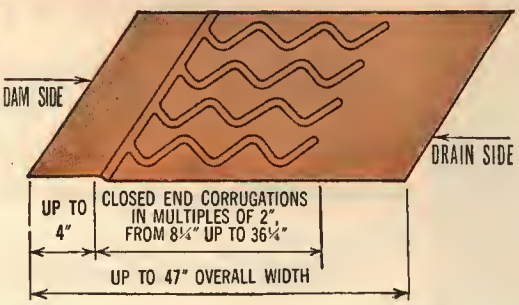
SPECIMENS OF STANDARD AND SPECIAL FLASHINGS



TYPE A-12 STANDARD
FLASHING FOR 12" WALL

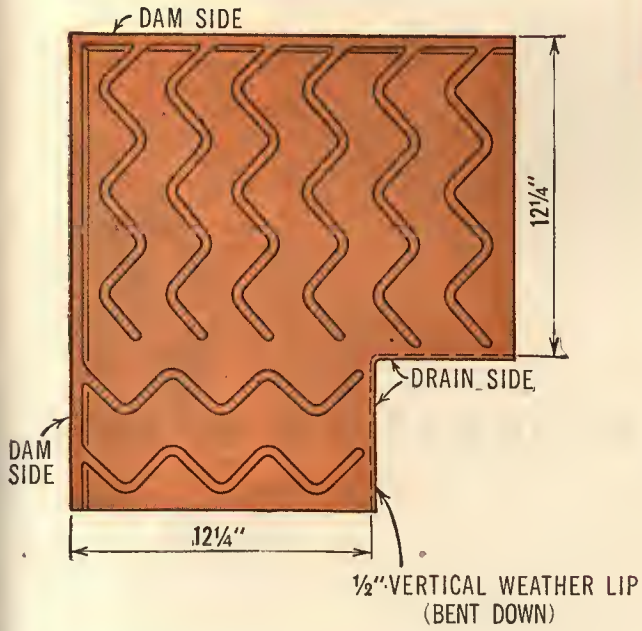


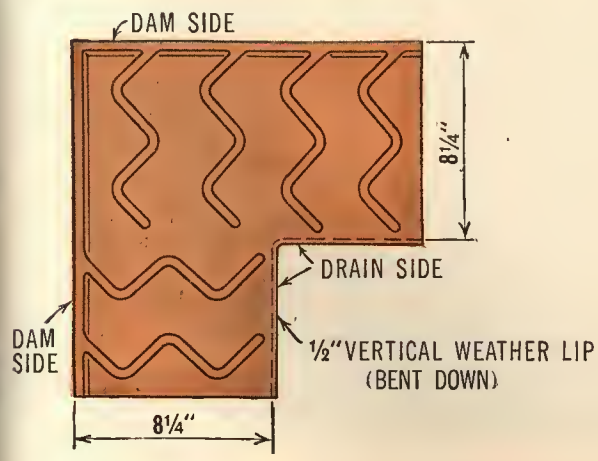
TYPE B-12 STANDARD
FLASHING FOR 12" WALL



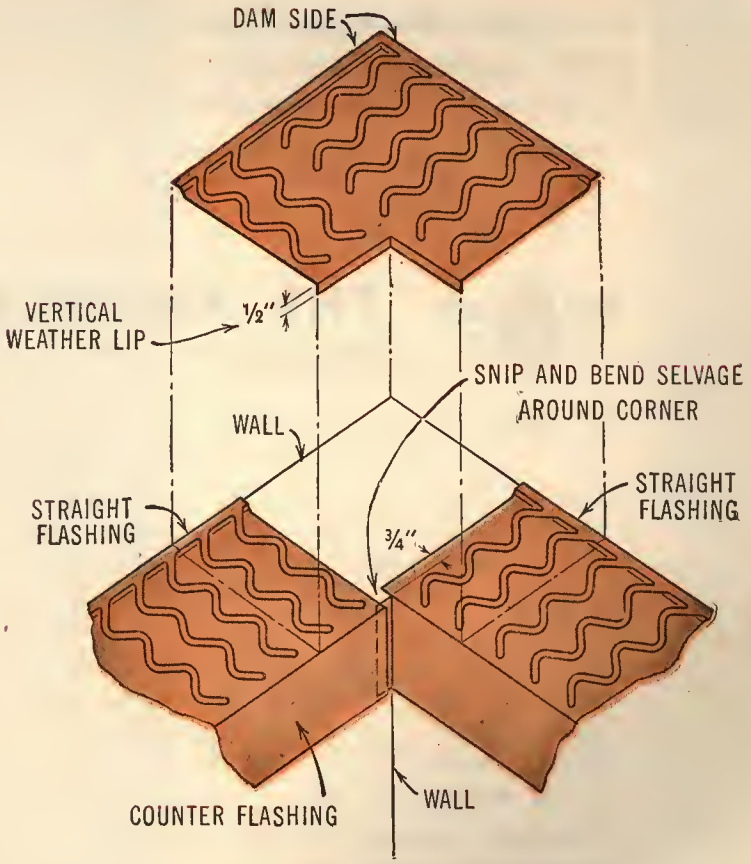
OUTSIDE CORNER FLASHING

DAM ON OUTSIDE, DRAINS IN





STANDARD ONE-PIECE CORNER FLASHING



ASSEMBLY OF OUTSIDE CORNER FLASHING

SUGGESTED SPECIFICATIONS FOR ANACONDA THROUGH-WALL FLASHING

Provide and install Through-Wall Flashing under all parapet copings and for through flashing and counter flashing at roof and elsewhere as shown on the drawings.

All flashing shall be of 16-ounce copper and shall be Anaconda Through-Wall Flashing as manufactured by The American Brass Company, specially formed to mechanically bond in the mortar bed in order to prevent lateral movement in all directions. The mechanical bonding features shall occur at intervals of not more than 3 inches and shall be a series of ribs extending irregularly and transversely of the sheet, one end of which shall join an integral dam at its full height. The metal shall be so formed as not to cause any accumulation of water on the surface and shall not be broken or perforated in any manner. The end joints shall be so lapped and locked that water will not leak through. The flashing at the corners shall consist of one-piece units of the same design.

HOW TO ORDER

When ordering Standard Flashings, specify the Type and width of flashing by number, i.e., A-8, B-12, etc. When ordering Special Flashings specify the width of corrugation and the width of selvage on both the dam side and the drain side.

Anaconda Flashings are made of 16-ounce copper weighing approximately one pound per square foot, and are furnished in eight-foot lengths. The overage factor for overlap and waste is usually taken at approximately five percent.

NOTICE

The statements and data contained in this publication are based on extensive investigation and practical experience and represent the best information available at time of printing, June, 1948. This information is subject to change at any time principally because of new developments and changes in practice. Since the company does not control or supervise subsequent installation of its products, it cannot assume responsibility for performance in service.

Our Engineering Department will gladly cooperate in the solution of individual problems involving the use of Anaconda Building Products.

ANACONDA
from mine to consumer
REG. U.S. PAT. OFF.

THE AMERICAN BRASS COMPANY

General Offices: Waterbury 88, Connecticut • Subsidiary of Anaconda Copper Mining Company

DISTRICT OFFICES

Atlanta 3, Ga.	66 Luckie Street
Boston 10, Mass.	140 Federal Street
Buffalo 5, New York	70 Sayre Street
Chicago 7, Ill.	1326 West Washington Blvd.
Cincinnati 2, Ohio	101 West Fourth Street
Cleveland 14, Ohio	2906 Chester Avenue
Denver 2, Colo.	818 Seventeenth Street
Detroit 31, Mich.	174 South Clark Avenue
Houston 2, Texas	1605 Commerce Building
Kenosha, Wis.	1420 Sixty-Third Street
Los Angeles 13, Calif.	601 West Fifth Street
Miami 32, Fla.	139 N.E. First Street
Milwaukee 4, Wis.	1033 West Bruce Street
Minneapolis 2, Minn.	527 Marquette Avenue
Newark 2, N. J.	744 Broad Street
New York 4, N. Y.	25 Broadway
Philadelphia 22, Pa.	111 West Norris Street
Pittsburgh 12, Pa.	1228 Brighton Road
Providence 3, R. I.	200 Chestnut Street
Rochester 4, N. Y.	183 Main Street, East
St. Louis 2, Mo.	408 Pine Street
San Francisco 4, Calif.	235 Montgomery Street
Seattle 1, Wash.	1338 Fourth Avenue
Syracuse 2, N. Y.	507 State Tower Building
Washington 5, D. C.	1511 K Street, N. W.
Waterbury 88, Conn.	414 Meadow Street

ASBESTONE

ASBESTOS CEMENT PRODUCTS

Asbestone
Corrugated Roofing and Siding · Pages 2-3

Asbestone
Wallboard · Page 4

ASBESTONE CORPORATION
Manufacturers of
Asbestos-Cement Products
Formerly Manufactured by
R. J. DORN COMPANY
New Orleans 15, La., U.S.A.

ASBESTONE CORPORATION

formerly
R. J. DORN COMPANY

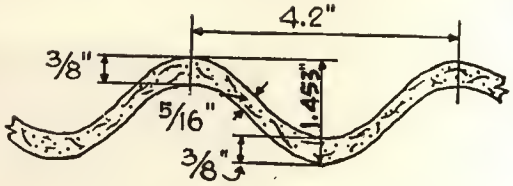
ASBESTONE CORRUGATED ROOFING & SIDING

"Asbestone" Corrugated Asbestos-cement Roofing and Siding is composed of 85% Portland Cement and 15% Asbestos Fibre, proportioned by weight. The sheets are relatively smooth on the outer surface and are light cement gray in color. They are supplied in 42" widths with 10 corrugations, 4.2" c to c.

The 3.75 pounds per square foot grade is stocked in lengths from 0 to 12' in multiples of 6" and with the corrugations measuring approximately ⅜" thick at the crest and vales and $\frac{5}{16}$" at the slopes.

"Asbestone" Corrugated Asbestos Roofing and Siding also manufactured for light weight building construction—called "Asbestone Jr.," weighing 2.25 pounds per square foot. Maximum length 10 feet. Write for catalog.

"Asbestone" erection diagrams will be made up at no extra cost on receipt of purchase order with detailed shop and field steel drawings attached.



STRUCTURAL STEEL DESIGN FOR CORRUGATED "ASBESTONE" ROOFING AND SIDING

Double Section Ridge Roll

NOTE: "Asbestone" is laid directly across purlins and girts.

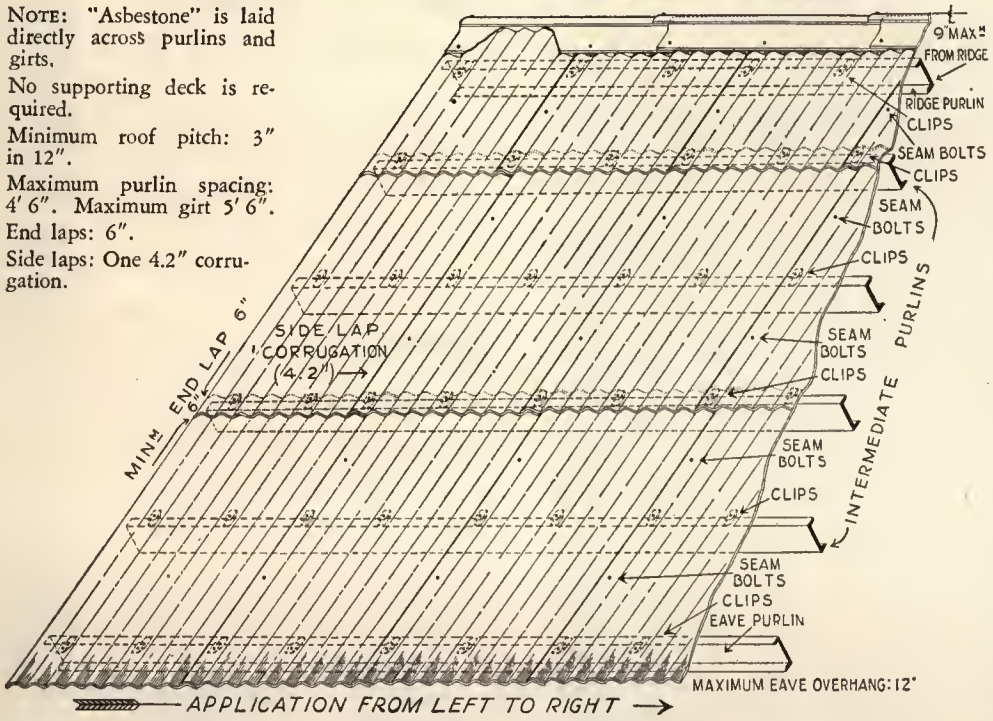
No supporting deck is required.

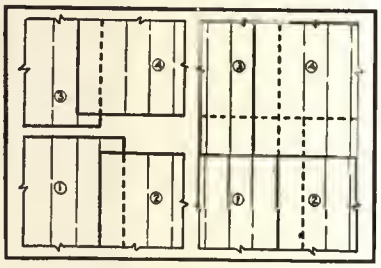
Minimum roof pitch: 3" in 12".

Maximum purlin spacing: 4' 6". Maximum girt 5' 6".

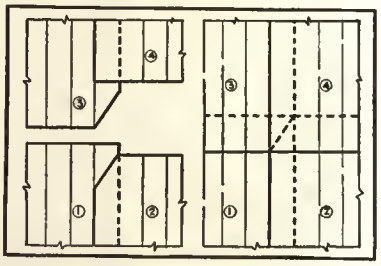
End laps: 6".

Side laps: One 4.2" corrugation.





Staggered Joint Application



Straight Line Application

FASTENERS

The fasteners illustrated at the right will meet the conditions existing for most standard structural framing.

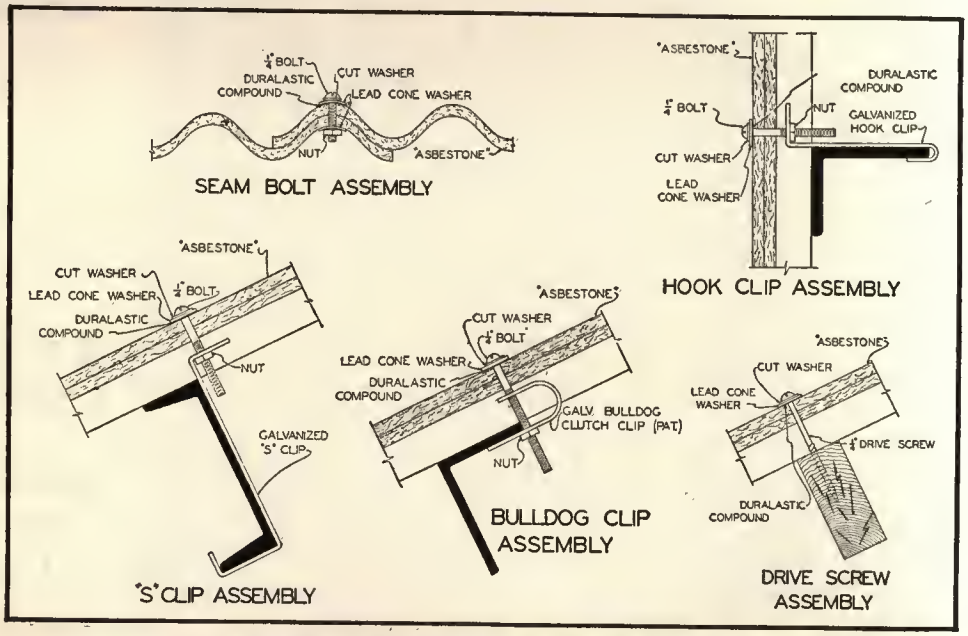
Bulldog Clip Assembly for use where channel purlin flanges point toward ridge and girt flanges point toward eaves. Bulldogs in reverse position can be used on intermediate purlins and girts whose flanges are opposite to positions mentioned above.

"S" Clip Assembly for end laps where purlins or girts are turned down. When ordering give size and weight of channel.

Hook Clip Assembly for end laps where angle flanges are turned down. When ordering give thickness and depth of horizontal leg.

Drive Screw Assembly for use on wood roof structures.

Seam Bolt Assembly for use in center of spans at side laps.



TRIM, FLASHINGS AND ACCESSORIES

Ridge Roll, "Asbestone" Asbestos Cement Type "A" furnished in 4' 0" sections complete with battens and special asphalt filler strips and fasteners. Applied and fastened as indicated below.

Corner Roll, "Asbestone" Asbestos Cement, furnished in 4' 0" lengths with bell type corner roll, which provides for a 4" lap. No battens or flashing required. These corner rolls have 5½" wings measured from the tangents of the 2" radius 90° curve—7½" over-all.

Eave and gable trim, "Asbestone" asbestos-cement. Furnished in 4' 0" lengths, butted end on end—no battens required. Trim made with smooth side inside or outside.

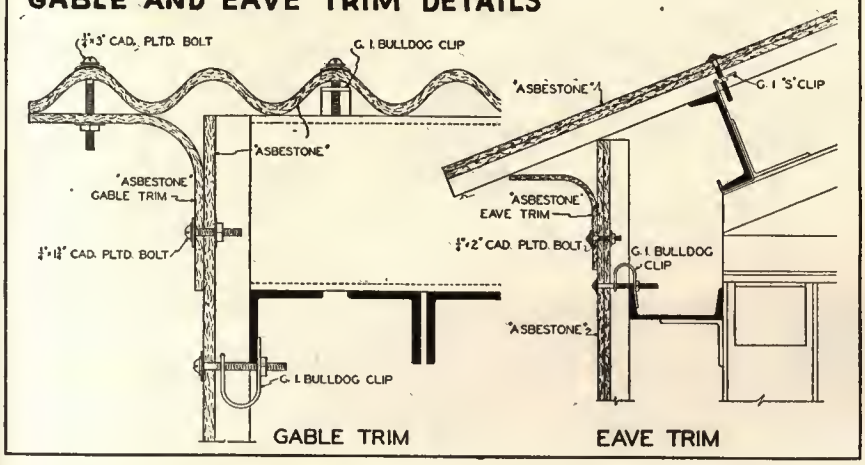
Inside asphaltum closures can be used to seal corrugations at sash and door heads, sash sills, concrete curbs, flashings, and at the eaves of the building.

"Asbestone" "S" shape or corrugated louvre blades are made of the same materials as "Asbestone" corrugated sheets. Manufactured in lengths from 4' 0" to 8' 0" in 6" increments.

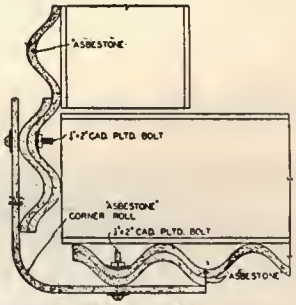
Use Gray Duralastic Compound for sealing bolt heads and caulking at sash and door jambs.

Use Black Plastic Compound for side and end laps of all roofing sheets.

GABLE AND EAVE TRIM DETAILS



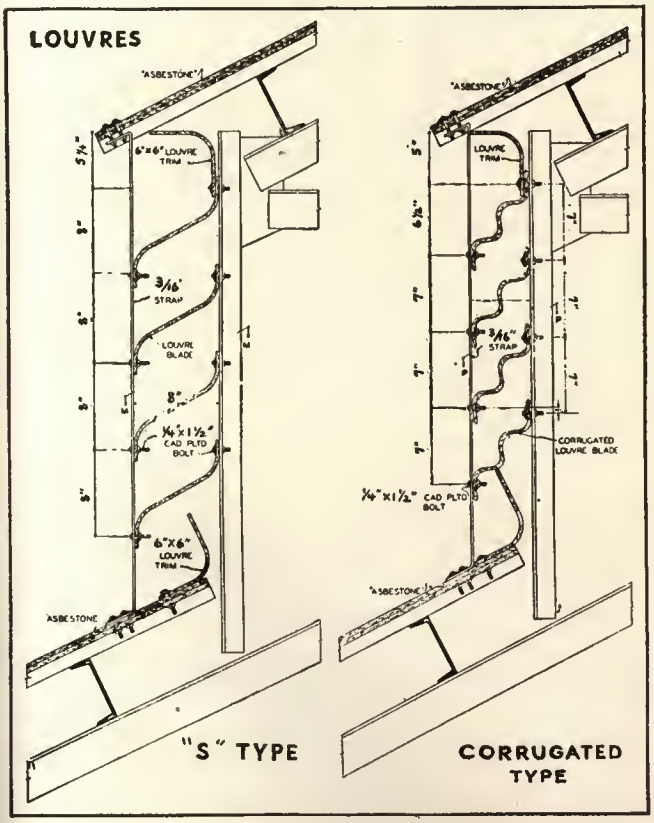
CORNER ROLL



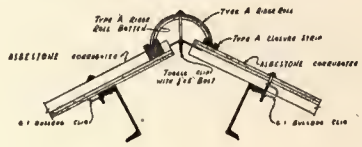
SECTION THROUGH CORNER ROLL AT A-A

ELEVATION
4'0" lengths

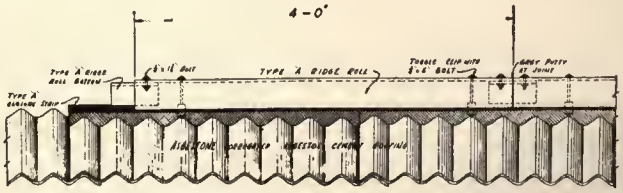
LOUVRES



TYPE "A" RIDGE ROLL



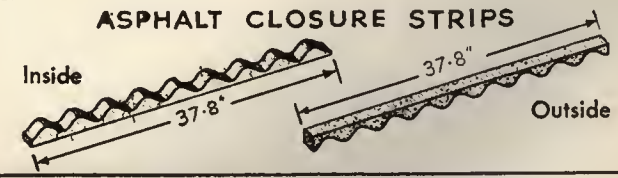
SECTION



ELEVATION

Double Section Ridge Roll shown on opposite page.

ASPHALT CLOSURE STRIPS



FLAT ASBESTONE WALLBOARD

With the present scarcity of lumber and other critical materials, Asbestos-cement flat sheets become increasingly important as a building material.

"Asbestone" Asbestos-cement sheets are inorganic, fire-resisting, and vermin-proof. They can be used for interior or exterior finish, for walls, partitions, ceilings, etc., and for temporary or permanent construction.

DESCRIPTION

Color—light gray.

Texture—smooth one side.

Stock size—4′ x 8′.

Lengths—4′, 5′, 6′, 7′, can be furnished on special order.

Thickness and approximate weight.
$\frac{3}{16}$″—1.8 lbs. per sq. ft.
¼″—2.4 lbs. per sq. ft.

Sheets are normally uncrated and unpunched. Add 10% to above weights for crating.

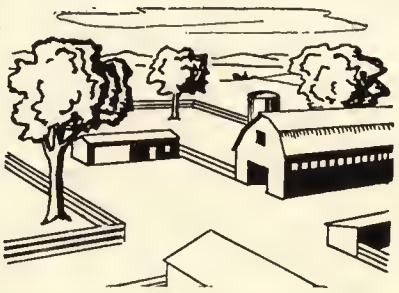
"Asbestone" Asbestos-cement wallboard is composed entirely of Portland Cement and Asbestos Fibre in the ratio of 85% and 15% by weight. The sheets are relatively smooth on the outer surface. No maintenance required.

RESIDENCES

Partitions—Shower Baths—Skirting—Ceilings—Interior and Exterior Walls—Garages

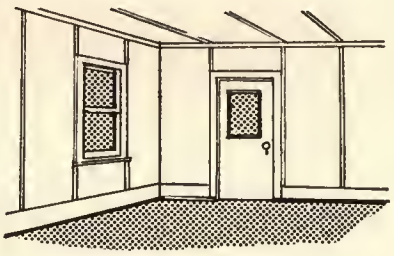
INDUSTRIAL AND GOVERNMENT PLANTS

Air Distribution Systems—Blackout Panels—Table Tops—Laboratories — Duct Work — Walls and Ceilings — Cantonments — Barracks



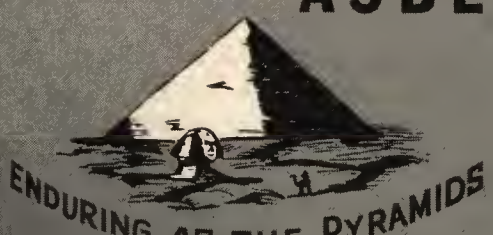
FARMS

Barns—Chicken Houses — Hog Houses — Equipment Sheds — Dairies—Partitions—Table Tops, Etc.



INTERIORS

for almost every use



ASBESTONE CORPORATION

formerly

R. J. DORN COMPANY

New Orleans 15, La., U. S. A.

corrugated asbestos-cement

roofing and siding

4.2" corrugations

also flat asbestos-cement products

general information

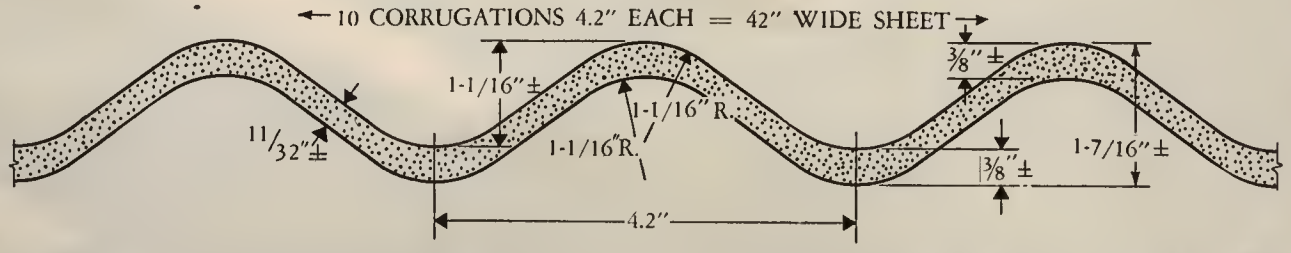
Careystone Corrugated Asbestos-Cement Roofing and Siding is manufactured by a scientific process combining two of the most durable products known to mankind—asbestos and portland cement.

In the special Carey manufacturing process, tough fibers of asbestos are crisscrossed, interwoven, merged together and embedded in a carefully selected grade of portland cement. This rugged mixture is placed on carrier trays, sent through a huge press and permanently combined under enormous pressure. Made solely from these two durable and fireproof minerals, Careystone Corrugated Asbestos-Cement Roofing and Siding is a permanent material, possessing natural properties that enable it to resist the action of the elements and the many and varied destructive influences existing in most industrial plants.

Careystone Corrugated Asbestos-Cement Roofing and Siding is non-combustible and offers a resistance to fire which is unsurpassed in other roofing or siding materials. Containing nothing that can rust, rot or corrode, Careystone has been used extensively for roofing and siding in chemical plants, where acid and alkali fumes are always prevalent. The railroads are large users of this modern building product, as they have found that its use reduces overhead and maintenance to a minimum. Unlike most metals it is unaffected by salt air and its use is thus becoming more popular with industries located on the seaboard. Careystone gives permanent service without maintenance, for it requires no paint or protective coating of any kind. The first cost is the last cost—maintenance costs are eliminated.

The color of Careystone Corrugated Asbestos-Cement Roofing and Siding is a pleasing natural cement gray. Other colors, such as red, green, brown and burnt orange may be manufactured if desired.

Careystone Corrugated Asbestos Roofing and Siding carries the Underwriters' Laboratories, Inc. Label.



MAXIMUM PURLIN SPACINGS (ROOF) 4'-6"
MAXIMUM GIRT SPACINGS (SIDING) 5'-6"

WEIGHT 3 75 LBS. PER SQ. FT. (UNCRATED)
MAXIMUM SHEET LENGTH 12' LONG

CONTOUR OF 4.2" CORRUGATED SHEETS

services

estimating service

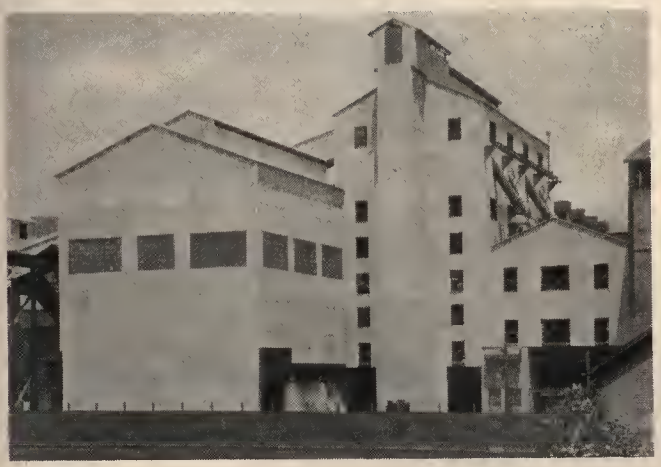
This company will gladly figure the approximate complete cost of the required corrugated asbestos and accessories for any building. We will estimate the required approximate quantities and quote a lump sum on our estimated area take-off. We request that you furnish us with the architectural and steel plans of the proposed building. We will quote a price on the corrugated asbestos and accessories estimated as required for a complete job. The plans should be sent to the nearest District Office of The Philip Carey Mfg. Company. See list on back cover page.

engineering service

An efficient staff of engineers is maintained and their services are at all times at the disposal of our customers. Their wide experience covers the recommendation and application of Careystone Corrugated Asbestos Roofing and Siding on thousands of factories, railroad buildings, airplane hangars, warehouses, power plants, foundries, chemical plants—in fact, every conceivable type of industrial building. This service includes the preparation of detailed estimates, sheet lay-outs, and many helpful suggestions for the use and application of Careystone Corrugated Asbestos-Cement Roofing and Siding.

Address any of the District Offices listed on the back cover or the General Office.

typical applications



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technical data

Careystone Corrugated Asbestos-Cement Roofing and Siding is now available in the 4.2-in. corrugation. The 4.2-in. sheet has 10 corrugations and is 42 in. wide. Approximate thickness is 3/8 in. Standard lengths are 6-in. multiples starting from 2 ft., and up to and including 12 ft.

weights per square foot

Careystone Corrugated Asbestos-Cement sheets weigh approximately 3¾ lbs. per sq. ft. in bulk, and 4½ lbs. per sq. ft. crated. Carload lots are always shipped in bulk. Shipments of 10,000 lbs. or more may be made in bulk. When the freight and crating charge on a shipment weighing less than 10,000 lbs. exceeds the l.c.l. minimum for 10,000 lbs. uncrated, shipment will be made uncrated, at the l.c.l. cost for 10,000 lbs., unless instructed otherwise. All shipments weighing less than 10,000 lbs., which are not covered by the above sentence, are shipped crated.

net sq. wgt. of materials in place

Approximate weight of Corrugated Asbestos Roofing or Siding in place on the building, including accessories is about 485 to 500 lbs. per square.

maximum purlin and girt spans

Careystone Corrugated Asbestos Roofing and Siding sheets are recommended for roofing spans up to 4 ft. 6 in.; siding spans up to 5 ft. 6 in. If roofing or siding spans exceed these figures, we suggest that you communicate with our Engineering Department.

sheets

For roofing or siding, sheets must be figured to have a one corrugation side lap, and an end lap of not less than 6 in.

To figure the number of sheets required, using 4.2-in. materials with a one corrugation side lap, multiply lengths in feet by the unit .3174, rounding out to the next full sheet. If the staggered joint method of application is used, allow one additional sheet per course for cutting. The actual width of coverage of the 4.2-in. sheet after the deduction of the one corrugation side lap is 37.8 in.

Between doors and windows on siding, and between skylights on roofing, figure the spaces from door to door, from window to window, and from skylight to skylight as individual courses. It is not necessary to add the additional sheet if the staggered joint of application is to be used.

roof pitch

Careystone Corrugated Asbestos is recommended for use on roofs having pitches of 3 inches or more per foot. Black putty should be used in all side and end laps of roofing sheets.

curved sheets

Curved Corrugated Asbestos sheets can be made on special orders, either along the length or across the sheets as required. As there are limitations to the manufacturer of curved sheets we suggest you consult our Engineering Department prior to specifying or designing a building using curved corrugated asbestos sheets.

expansion joints

Expansion Joints must be used with Corrugated Asbestos Roofing and Siding directly over the Expansion Joints in the supporting structure. In no case should there be unbroken areas of Corrugated Asbestos longer than 200 feet. Buildings subjected to high interior temperatures, variable moisture and humidity conditions, etc., should have Expansion Joints placed on approximately 150-ft. centers, but in all cases Expansion Joints must also be used over the Expansion Joint in the structure if structural Expansion Joints are present. See Expansion Joint Detail on page 5.

ridge roll, corner rolls and louvres

Carey furnishes the ½ round type Ridge Roll for use with 4.2 Corrugated Asbestos Cement Roofing.

The ½ round Ridge Roll is available in 8-ft. lengths and has a 4-in. radius. Ridge Roll battens 6 in. long nesting securely on the inside of the ridge, are used at the joints. Battens are held in place to the Ridge Roll by two 1½-in. bolts per batten.

Type F3 strips, together with ridge toggles and 6-in. bolts (located on approximate 24-in. centers) form the complete ridge assembly. For application see Detail M on page 5.

Ridge Rolls, Corner Rolls (both inside and outside) and Louvres match the color of Careystone Corrugated Asbestos-Cement as they are made of the same material.

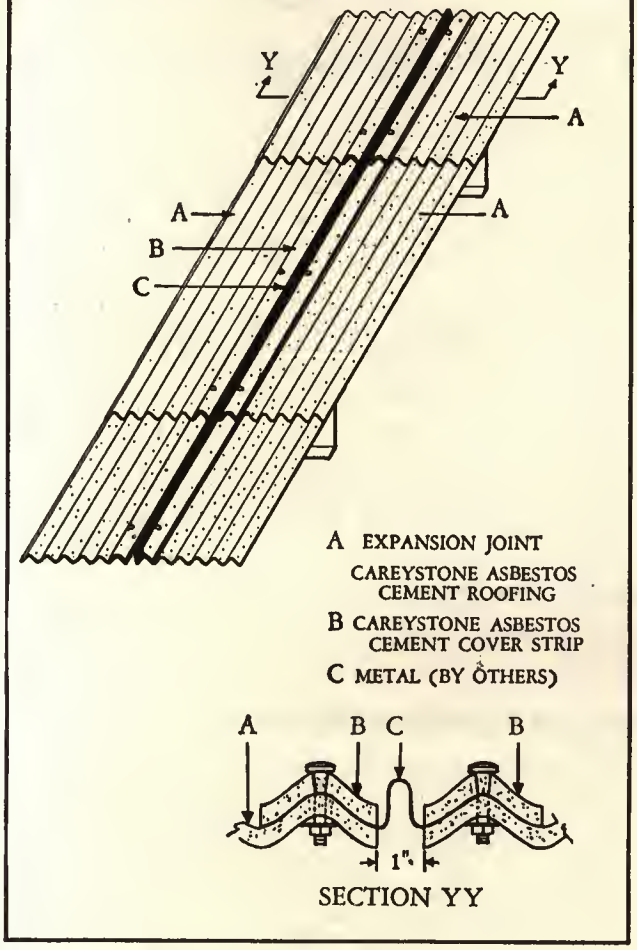
Inside and outside corner roll is furnished in a 90° angle designed with wings about 6¾ in. wide in standard lengths of 8 ft. Both inside and outside corner roll are made with an offset at one end. This offset is equal to the thickness of the corner roll itself and is 4 in. long, so that the corner roll very neatly laps the preceding section of corner rolls. For corner roll dimensions, see Detail O and P on page 5.

Asbestos-Cement Louvre Blades are furnished in any required length up to and including 8 ft. Louvre Blade Battens are furnished 4 in. in width, having same contour as the Louvre Blades, assuring a perfect fit. See details on page 5.

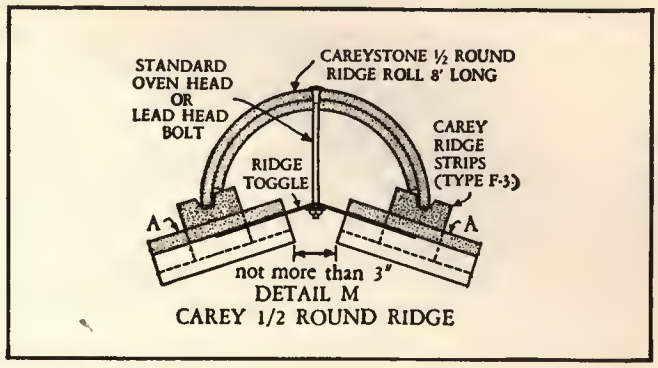
Louvre blades can also be made by cutting 4.2-in. sheets into pieces 2½ corrugations wide as required on the job. In this case bolt locations to be on 7-in. centers in supporting members.

Metal straps (furnished by others) for supporting outside of Louvre Blades are to be located 8 in. from the structural steel for the standard Louvre Blades, and 5 in. from the structural steel for 2½ corrugation Blades cut from 4.2 sheets.

technical data—details

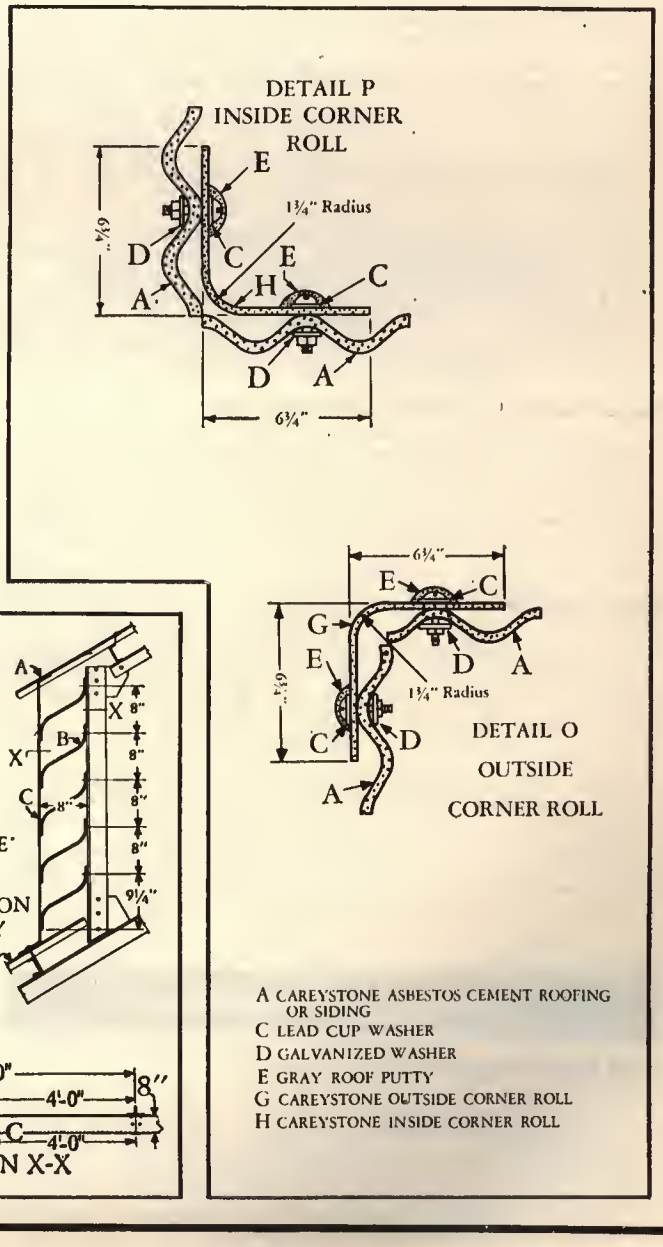


EXPANSION JOINT DETAILS

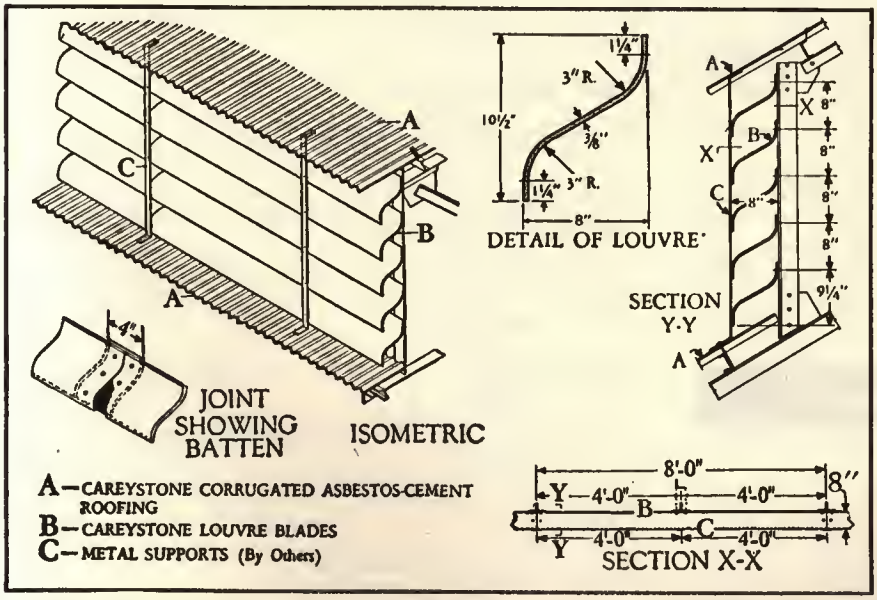


RIDGE ROLL

CORNER ROLL



LOUVRE DETAILS



enclosure strips, fasteners & accessories

enclosure strips

Carey Sealing Strips are manufactured of an asphalt compound.

Type F-1 Strips are 2-in. wide tapering strips for 4.2-in. Corrugated Asbestos for use on top of the corrugated sheet under flashing, etc. These strips are for use with one corrugation sheet side lap application and are furnished 37.8 in. long.

Type F-2 Strips are furnished 2 in. wide and are known as Eave Strips for use with the 4.2-in. corrugated sheet. These strips are for use under 4.2-in. sheets applied with one corrugation side laps. These strips are tapered to equal the thickness resulting in the laps of the sheets and the strips are furnished 37.8 in. long.

Type F-3 Strips are used with 4.2-in. sheets having one corrugation side laps. These are grooved strips for use in conjunction with half round Ridge Roll. These strips are furnished 2-in. in width and are furnished 37.8 in. long.

Type F-4 Strips are used under 4.2 sheets applied by butt joint method (no sidelaps). Strips are not tapered. Furnished 42 in. long and 2 in. wide.

See details on page 7 of all strips described above.

fasteners

Carey can furnish either standard ¼-in. oven-head or lead-head bolts to be used with clips for supporting Corrugated sheets and Asbestos-Cement Accessories. All bolts are electro-galvanized. Clips and steel washers are furnished galvanized. When using oven-head bolts, use special lead concave washers under bolt heads next to corrugated sheet. These washers, designed by Carey, have one concave surface to fit corrugation contour perfectly, assuring waterproofness even without putty. The washers have a cut back on 2 edges to enable the gray putty to obtain a good hold.

Lead head bolts require no lead washers or putty.

Galvanized washers are used between the clip and the nut.

Lead cup washers to be used under bolt heads next to Corner Roll, Ridge Roll, Louvres, or Flat Asbestos-Cement Sheathing Trims.

Details of clips and data as to the use of clips are shown on page 7.

When excessive corrosive action may be expected from acids or alkalies, we suggest that you confer with our Engineering Department so that proper type accessories can be recommended.

bolts for Ridge Roll and Corner Roll

With ½ round Ridge Roll use 6-in. bolts and ridge toggles using 5 assemblies per 8'-0" length.

At battens, use 1½-in. bolts using 2 bolt assemblies per batten.

Corner Roll of either outside or inside type is held to the adjoining corrugated sheets by 3" bolts—using 10 bolt assemblies per 8'-0" length.

gray and black putty

When oven head bolts with lead washers are used to secure roofing, these should be covered with Carey Special Corrugated Asbestos Gray Putty. Use 10 lbs. of putty to each 300 bolts, rounding out to the next unit of ten pounds.

Gray putty used between sash and door jambs, etc. if metal flashing not used.

Black Putty to be used in all side and end laps of Roofing Sheets. Use 10 lbs. of roof putty per 150 lineal feet, rounding out to next unit of ten pounds. To figure per net square of roofing area we estimate that 5 lbs. of black putty per net square are required.

Black Putty for side and end laps of roofing sheets should be applied with a caulking gun, using ⅜-in. nozzle. Putty should be placed on the crest of the corrugation and across the sheet about three inches below the top of the underlying sheet.

methods of fastening

bolt and clip method for roofing

When the flanges of the roof purlins are turned "down", use two "J" clips, two galvanized bolts of the proper length with nuts, two lead concave washers, and two galvanized washers per sheet per purlin—except at the eave and ridge purlin. At the eave and ridge purlin three complete fastener assemblies must be used.

With 4.2-in. Corrugated, the first fastener is located through the crest of the first corrugation at the eave and ridge purlins and the second fastener is placed through the crest of the fourth corrugation and the third fastener through the crest of the seventh corrugation. At all other purlins the first bolt assembly is placed through the crest of the first corrugation and the second through the crest of the fifth corrugation of each sheet.

This method is known as the single "J" clip method and is shown in detail A on page 7.

All bolts are ¼ in. in diameter and are furnished at least 3 in. longer than the depth of the purlin on which they are to be used. When the flanges of the roof purlins are turned up, either the "Z" clip method or the double "J" clip method of fastening can be used. The double "J" clip method is shown in detail B, and the "Z" clip method in detail J on page 7.

If the double "J" clip method is used, use the same number of bolt assemblies as described in the single "J" clip method, but double the number of "J" clips. All assemblies are to be placed as described for the single "J" clip method. For the "Z" clip method of application, it is necessary to use one 2-in. and one 3-in. bolt per "Z" clip. See detail J on page 7.

When the purlins are angles with one leg "down" and one leg pointing "in" the "hook clip" method of fastening should be used. (Shown on Detail D, page 7) Figure the quantity of complete bolt assemblies required as described above for the "J" clip method for roofing. All bolts must be 3 in. longer than the leg of the angle that is pointing "in."

seam or lap bolts

Seam or side lap bolts must be used with all roofing sheets. 1½-in. bolts are used—one seam bolt to be used in the lap between each purlin.

bolt and clip method for siding

When girts are channels with flanges "up," or angles with one leg outside and up, and the other leg pointing "in," use the "Z" clip fastening method as described for roofing. Quantities required are estimated in a like manner. Placing of the bolt assemblies is to be identical. (Detail F and K.) When the girts are channels with flanges pointing "down," use "J" clip method, as described for roofing. Quantities required are estimated in a like manner. (Detail G.) The placing of the bolt assemblies is identical.

When girts are angles with one leg "down" and one leg pointing "in," use the "hook clip" fastening method. (Detail H.) Figure quantity of complete bolt, assemblies required as described for "J" clip method for roofing. All bolts used with hook clips must be 3 in. longer than leg of the angle that is pointing "in." All bolts used with "J" clips must be 3 in. longer than channel depth. The placing of angle girts with one leg facing out, and the other leg facing down or up should be avoided, as special methods of fastening the siding must, in that event, be devised.

wood purlins or girts

When the building to be roofed or sided has wood purlins and girts we recommend that Careystone Corrugated Asbestos Cement Roofing and Siding be applied with 4-in. No. 14 round head galvanized wood screws or cadium drive screws. Use lead concave washers under heads. Utmost care must be taken that drive screws are not driven so tight that fastening is too rigid.

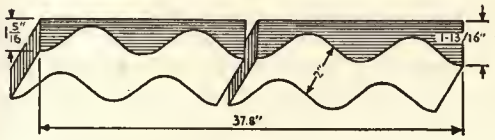
The number of screws can be determined by figuring three per purlin per sheet for eave and ridge members and two per purlin per sheet for intermediate members. Fastening for siding should be figured in same manner.

storing sheets

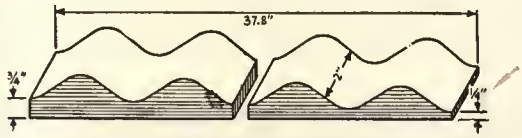
When materials are received on the job, sheets should be stacked on a level place using 2-in. x 4-in. lumber on approximate 18-in. centers at right angles to the corrugations. The stacks should not be more than 4 ft. high. For more economical application each stack should only contain one length of sheet. If that is not practical, always place longest sheets at bottom of the stack. The materials may be stored outdoors, although indoor storing or covering of stacks stored outdoors would keep materials cleaner and prevent materials from freezing together in wet and extreme cold weather.

enclosure strips, fasteners & accessories —details

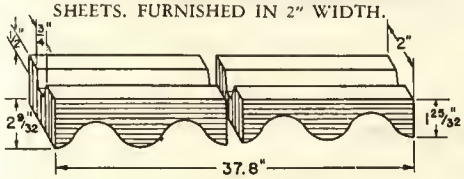
enclosure strip details



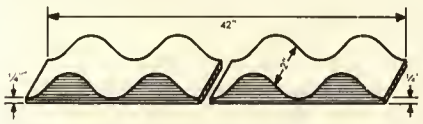
TYPE F-1 STRIP—USED ON TOP OF 4.2 SHEETS. FURNISHED IN 2" WIDTH.



TYPE F-2 STRIP—USED UNDER 4.2 SHEETS. FURNISHED IN 2" WIDTH.

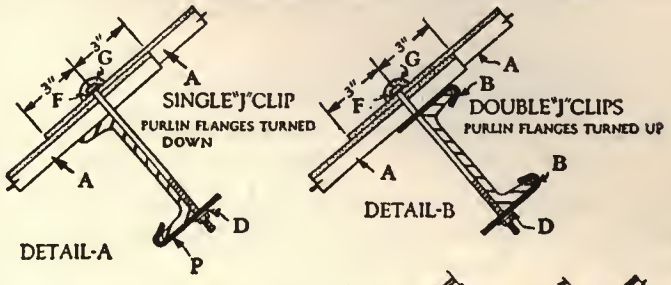


TYPE F-3 STRIP, FOR USE WITH ½ ROUND RIDGE. FURNISHED IN 2" WIDTH.

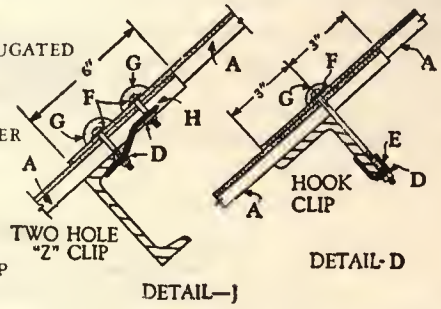


TYPE F-4 STRIP—FOR USE UNDER 4.2 SHEETS, APPLIED WITH BUTT JOINTS. FURNISHED IN 2" WIDTH.

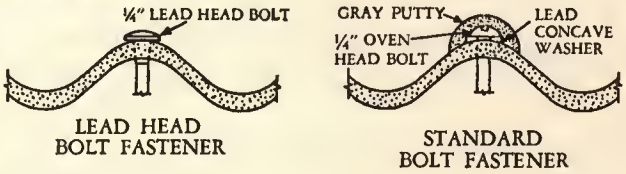
detail of bolt and clip fastening method for roofing



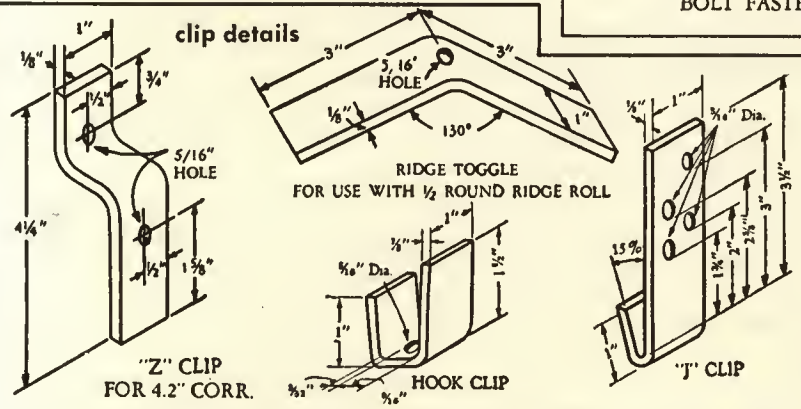
A—CAREYSTONE CORRUGATED ASBESTOS ROOFING
B—"J" CLIP
D—GALVANIZED WASHER
E—HOOK CLIP
F—LEAD CONCAVE WASHER
G—GRAY ROOF PUTTY
H—TWO HOLE "Z" CLIP



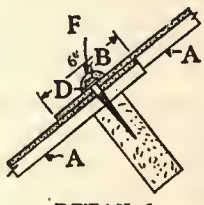
fastener details



clip details

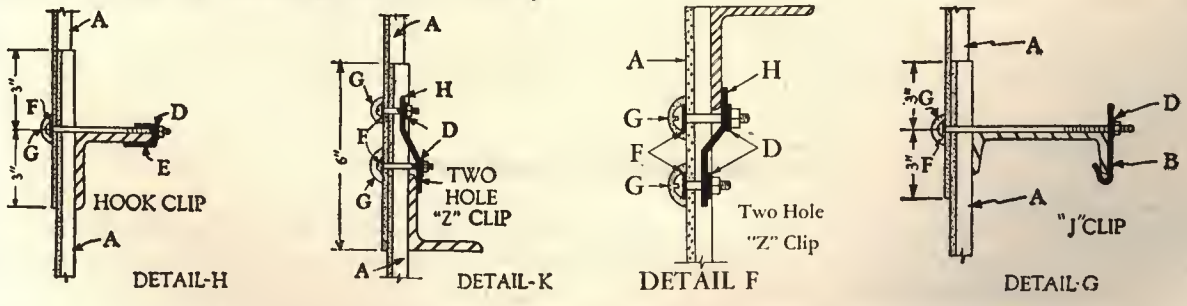


wood purlin at girt details



A—CAREYSTONE CORRUGATED ASBESTOS CEMENT-ROOFING OR SIDING
B—WOOD SCREWS
D—LEAD CONCAVE WASHER
F—GRAY ROOF PUTTY

detail of bolt and clip fastening method for siding



A—CAREYSTONE CORRUGATED ASBESTOS SIDING B—"J" CLIP D—GALVANIZED WASHER E—HOOK CLIP
F—LEAD CONCAVE WASHER G—GRAY ROOF PUTTY H—TWO HOLE "Z" CLIP

recommended methods of application

Sheets should be applied with one corrugation side laps and end laps should not be less than 6 in. At the gables sheets should not overhang the ends of the purlins more than 9 in. The eave overhang should not be more than 9 in.

Sheets in the top course should extend to the ridge so that the opening at the ridge will not exceed 3 in.—see detail M, page 5.

All sheets should be of the proper length, as all end laps must occur over a purlin or girt. All bolts or screws must pass through both the upper and underlying sheets in the crest of the corrugations, but must not be drawn up too tight. Care must be exercised to see that the bolt or screw heads are not drawn up too tight against the lead washer so that it will become distorted.

All applications must be started true to line; care must be exercised to keep the horizontal lines formed by the sheets, and the vertical lines of the side laps, straight and plumb.

When applying sheets on the roof, the liberal use of planks and "chicken ladders" is recommended. Do not subject sheets to undue impact, and be careful to walk only directly over the purlins or on the laps, where the sheets are automatically reinforced by the double thickness. Never walk in the center of the span.

Holes for the introduction of bolts or screws, either for roofing or siding, must always be drilled (never punched); the drilling to be done in the crest of the corrugation. For drilling holes, excellent results are obtained using an ordinary carbon steel twist drill in a hand or small electric drill. These should be sharpened as if for cast iron or steel work. The drill, however, should be fed faster and rotate more rapidly than in metal work. No lubricant is necessary. Before drilling measure location of holes exactly to insure proper fit of fasteners. We suggest $\frac{9}{32}$-in. to $\frac{5}{16}$-in. holes for ¼-in. bolts.

cutting

For sawing and cutting sheets an ordinary hand saw for cross cutting purposes may be effectively employed. Excellent results can be obtained from a portable power saw using a carborundum type blade.

staggered joint method of application

The staggered joint method of application is recommended especially for roofs, as it insures a more waterproof job than a roof application of the cut-corner method.

Application must be started true to line. When an overhang is desired stretch a guide line making allowance for the overhang, as may be required.

Begin to apply the sheets at the eaves, starting at the left with a full width sheet, overhanging the purlin as required at the rake, with the lower end of the sheet against the line stretched for the overhang.

The upper part of the sheet must extend at least 3 in. beyond the uppermost point of the purlin or angle, whether the legs of these members are turned up or down. Fasten the lower end of the sheet to the eave purlin.

The second sheet is applied in perfect alignment with the first sheet overlapping one corrugation of the first sheet with one corrugation of the second. Fasten the lower end of the sheet to the eave purlin, making sure that the first bolt assembly is through the crest of the first corrugation, the second bolt assembly through the crest of the fourth corrugation and the third bolt assembly through the crest of the seventh corrugation.

Apply the third sheet like the second, overlapping one corrugation, and fasten the lower edge of the sheet as described above.

Each successive sheet in the first course should be applied in a like manner to the end of the course. Be sure to allow for the overhang at the gable on the right end.

To apply the first sheet on the second course take a full width sheet and cut off one corrugation. Place this sheet so that the outside line of it is in perfect alignment with the first sheet of the first course and the lower part of it overlaps the top of the underlying sheet at least 6 in. Fasten the lower end of this sheet and the upper end of the first sheet of the first course.

Continue to apply the second course sheets across the roof with full width sheets, overlapping each successive sheet one corrugation over the preceding sheet. Fasten the lower end of this sheet and the upper end of the sheets of the underlying course, using one complete bolt assembly in the crest of the first corrugation and one complete bolt assembly in the crest of the fifth corrugation.

After the end laps have been properly fastened to the purlins or girts, bolt sheets to the intermediate purlins using one bolt assembly in the crest of the first corrugation of each sheet and one bolt assembly in the crest of the fifth corrugation of each sheet.

Snap a chalk line across the roof as a guide to insure proper alignment of all sheets.

To apply the first sheet of the third course, take a full width sheet and cut off two corrugations. Place this sheet so that the outside edge is applied in perfect alignment with the outside edges of the first sheets on the first and second courses overlapping the upper end of the first sheet of the second course at least 6 in.

Continue to apply the third course sheets using full width sheets overlapping each succeeding sheet one corrugation over the preceding sheet. Bolt as described above for the second course sheets. For subsequent courses continue staggering, applying and fastening in a like manner. (See detail Q and S, page 9.)

¼ x 1½-in. seam bolts should be placed in the side laps at mid points between all purlins on roofing.

At ridge purlin use same number of bolts and location of bolts in corrugations of sheets as used at eave purlin.

cut corner method of application

For 4.2 in. Corrugated Sheets

Cut corners butt together and are overlapped by the uncut corner of the next sheet making a watertight joint at the intersection of sheets. See detail of Cut Corner method shown on page 9.

The first course is applied by commencing at the left with a full width sheet (Type A), overhanging the end of the purlin as required with the lower end of the sheet against the line stretched as a guide to allow for the overhang. The upper end of the first course of sheets must extend at least 3 in. beyond the top line of the upper purlin.

The next sheet (Type B) is applied in perfect alignment with the first sheet overlapping one corrugation of the first sheet. It will be noted from cut corner detail on page 9 that the upper left hand corner of

Type B sheet is clipped off. Apply the third sheet in the same manner as the second sheet and subsequent sheets of the first course in a like manner, all sheets having the upper left hand corner clipped.

The first sheet of the second course and successive courses, including the ridge course, is a Type "B" and is applied with the clipped off portion in the lower right hand corner.

Do not stagger the sheets. Apply them in perfect alignment as shown in detail.

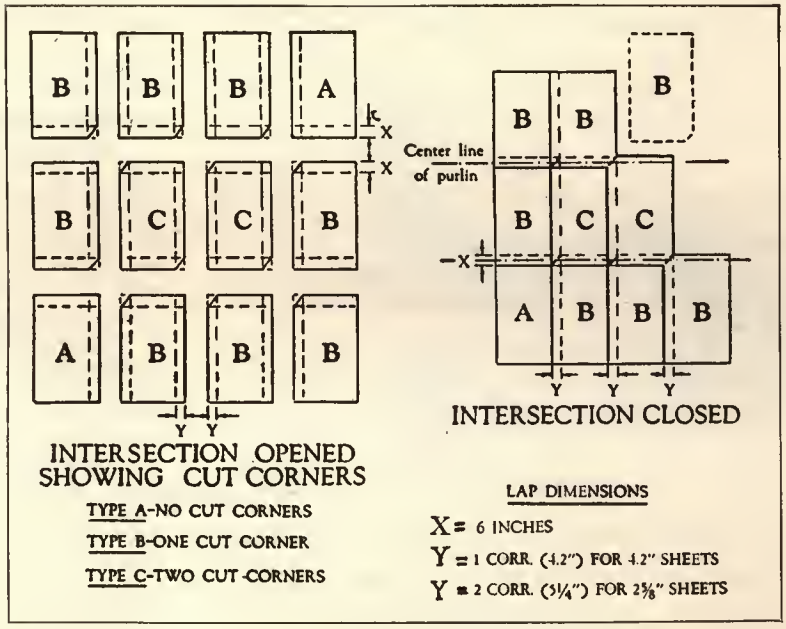
Succeeding sheets of this course, Type "C", are applied in perfect alignment with the first sheet of this course, overlapping each sheet one corrugation over the preceding sheet. The Type "C" sheet is used for the remaining sheets in this course. It will be noted that the Type "C" sheet has both the upper left and the lower right hand corners clipped off. The last sheet in each course (except ridge or top course) should be Type "B" sheets.

The ridge or top course is applied in the same manner as the first course, with the exception that the position of the sheets is exactly reversed, the first and succeeding sheets of the course being Type "B" with the lower right hand corner clipped off and the final finishing sheet a Type "A" sheet.

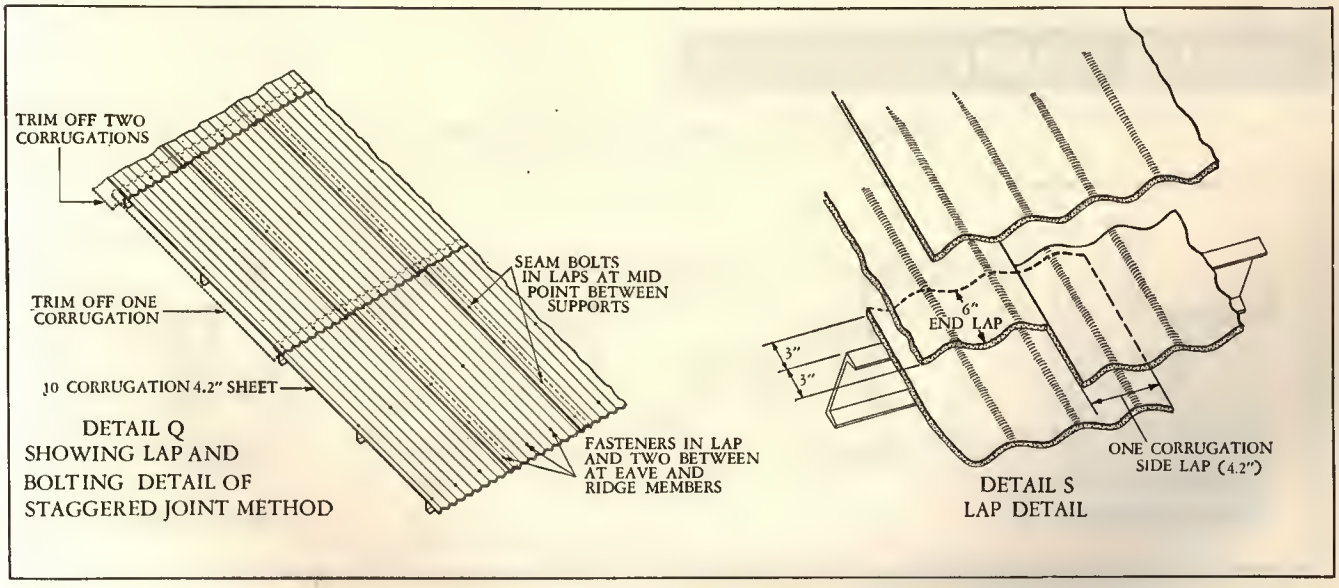
The method of bolting and number of bolts used per sheet is the same for this method of application as described in detail for the staggered joint method of application.

recommended methods of application—details

cut corner method



staggered joint method



suggested specifications

for specifying Corrugated Asbestos-Cement Roofing and Siding

All roofing and siding shall be 4.2-in. Careystone Corrugated Asbestos-Cement roofing and siding heavy thickness furnished in sheets 42 in. wide.

Sheets to be an average thickness of approximately 3/8 in., being approximately 7/16 in. at the crest and vales and approximately 5/16 in. at the flanges. Materials to weigh not less than 3.75 lbs. per sq. ft. bulk.

The sheets shall be manufactured solely from Asbestos Fibre and Portland Cement and shall be rigid, true and free from all defects. The top surface of the sheets shall be comparatively smooth.

Ridge roll, corner roll trim and louvres shall be manufactured of the same materials.

All end laps shall occur over a purlin or girt and all sheets shall be fastened in strict accordance with the manufacturer's recommendations.

Roofing and/or siding sheets shall be applied in accordance with manufacturer's specifications.

Accessories for application to be furnished in accordance with manufacturer's specifications.

Before making shipment of roofing and/or siding materials, the manufacturer is to submit detailed layout blueprints of the job for the customer's approval.

flat Asbestos-Cement sheathing

Careystone Flat Asbestos-Cement Sheathing is manufactured of the same durable materials as Careystone Corrugated Asbestos-Cement Roofing and Siding, that is, asbestos fibre and portland cement compressed under great hydraulic pressure. The resulting asbestos board is a flat, hard, dense, fireproof building material.

It is furnished in the following stock sizes: 42 x 48 in., 48 x 48 in., 42 x 96 in., 48 x 96 in., 48 x 120 in. and 48 x 144 in. Other sizes may be furnished from these stock sizes. It is manufactured in the following thicknesses: 1/8, 3/16, 1/4, 5/16, 3/8, 1/2, 5/8, 3/4, 7/8, 1, 1 1/4, 1 1/2 and 2 in.

Careystone Asbestos-Cement Sheathing is fireproof, vermin-proof, rust-proof and will not corrode. It is weather-resistant and may be used for either exterior or interior sheathing.

The material is rat-proof and vermin-proof, and makes a pleasing appearance without any other finish, although the material can be painted if desired.

Can be readily cut and drilled with ordinary carpenters' tools and is, in general, used for exterior or interior walls, ceilings, partitions, laboratory table tops, counters, tops for work benches, fire-resistant room linings, hothouse benches, door linings, fume hoods, lockers, radiator shields, smoke ducts, smoke jacks, and innumerable purposes where element-resisting, alkali- and acid-resistant materials are desired.

It may be applied directly to steel or wood studs or on wood sheathing, and may be artistically decorated in any fashion. One of the main advantages of Careystone Asbestos-Cement Sheathing is that it is vermin- and rat-proof. Its smooth surface may be readily cleaned, making this material an excellent one for lining the walls of refrigerators. It is used as a ceiling material wherever fireproofness is desired, particularly over boiler rooms, above electrical wiring, and for rooms containing combustible materials, such as oil and waste storage rooms and rooms in which fire resistant wall construction is desired.

Careystone Flat Sheathing up to and including 1/2" thickness carries the Underwriters' Laboratories Inc. Label.

flat sheathing installation data

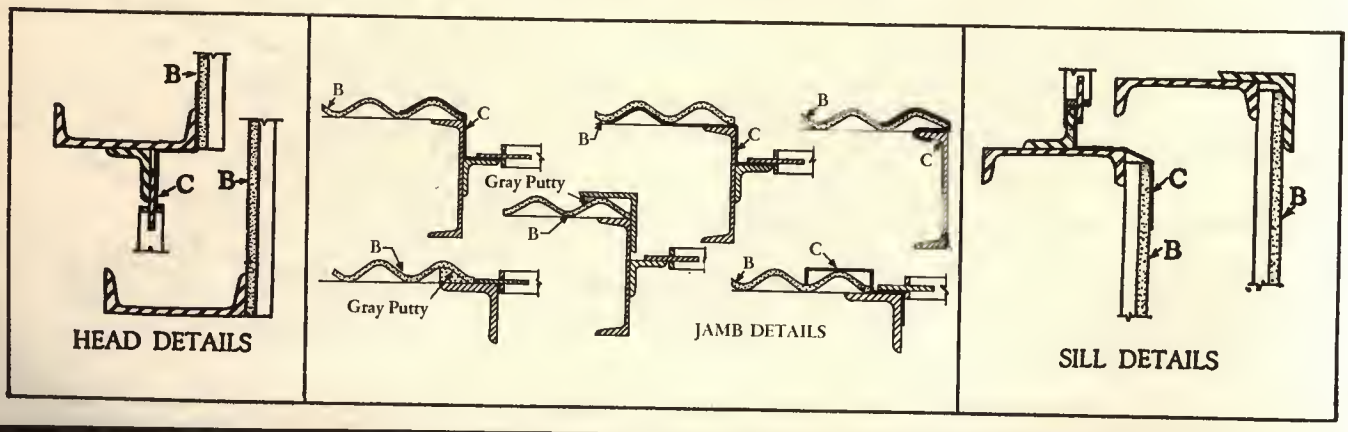
When Careystone Asbestos-Cement Sheathing is to be used as walls or ceilings in new work, we suggest that the studs be placed on 16-in. centers so that stock width sheets may be used without cutting. We recommend that the sheets be fastened to the studs with brass or galvanized wood screws, if the application is over wood studs, and with galvanized bolts, if the application is to be made on steel. For interior work copper or ordinary nails may sometimes be used to advantage. Joints between the sheets may be covered with batten strips cut from sheets in widths from 2 in. up, although the smooth edge of each sheet permits them to be butted together at the studs.

Careystone Asbestos-Cement Sheathing is a building material having beauty and permanence, and is reasonably priced. For full particulars concerning the application of Careystone Asbestos-Cement Sheathing we suggest that you write our Engineering Department and discuss your problem. This service is available without charge.

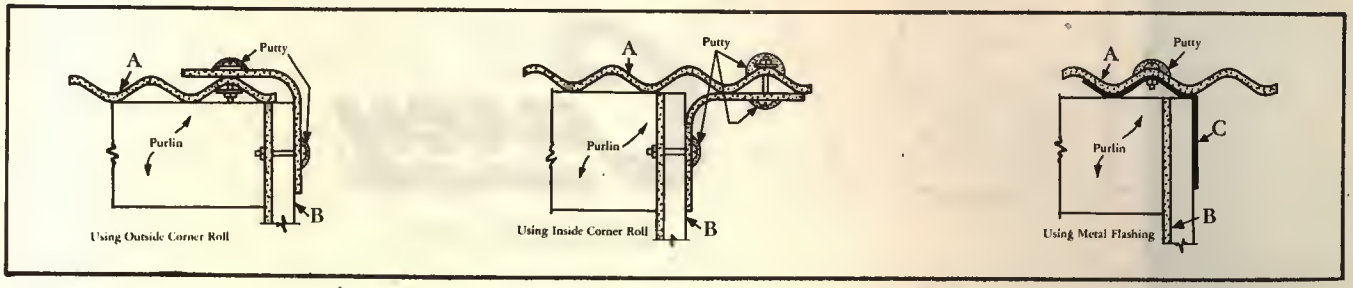
Additional information on products will be gladly forwarded upon contacting the nearest District Office or by writing direct to The Philip Carey Mfg. Company, Industrial Asbestos-Cement Dept., Cincinnati 15, Ohio.

flashing details

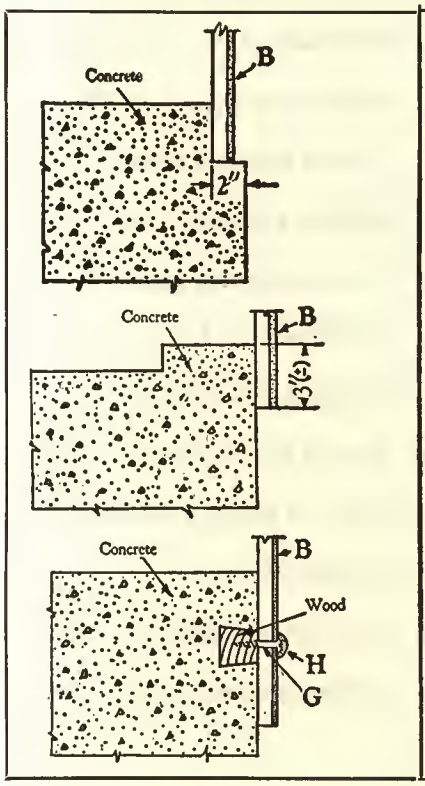
SUGGESTED SASH AND DOOR DETAILS



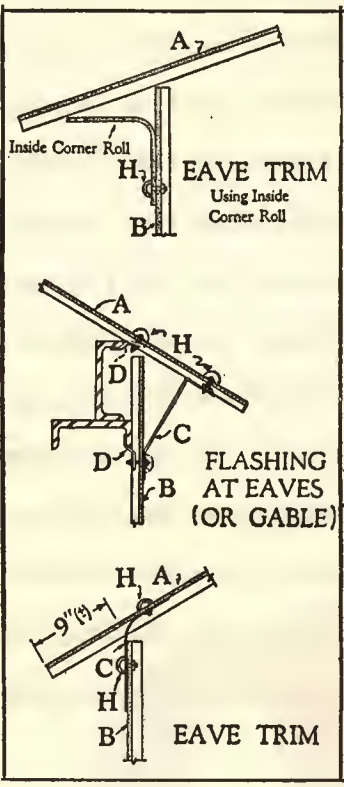
SUGGESTED GABLE DETAILS



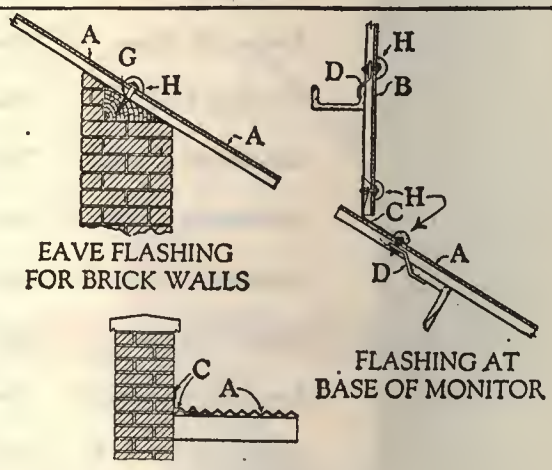
SUGGESTED BASE DETAILS



SUGGESTED EAVE DETAILS



SUGGESTED MISCELLANEOUS DETAILS



CODE LETTERS

A—CAREYSTONE CORRUGATED ASBESTOS-CEMENT ROOFING

B—CAREYSTONE CORRUGATED ASBESTOS-CEMENT SIDING

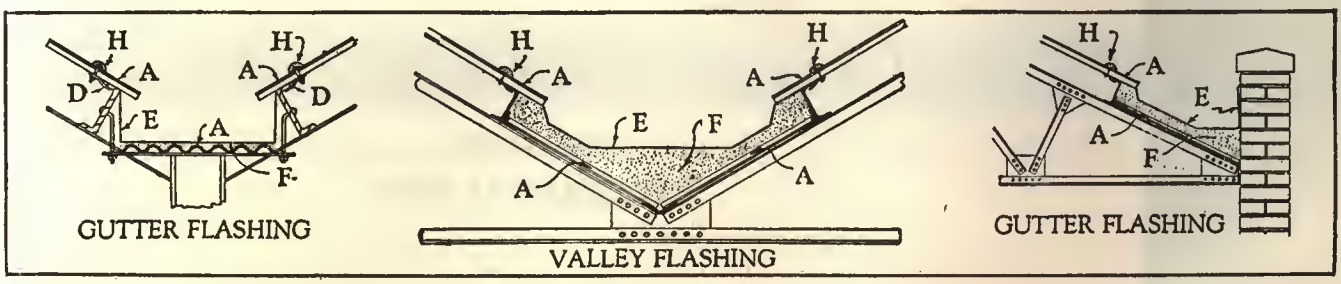
C—METAL FLASHING (By Others)

D—"Z" CLIP

E—METAL (By Others) G—WOOD SCREWS

F—CEMENT FILL H—GRAY ROOF PUTTY

SUGGESTED VALLEY AND GUTTER DETAILS



Carey

ESTABLISHED 1873

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THE PHILIP CAREY MFG. COMPANY

General Offices

CINCINNATI 15, OHIO

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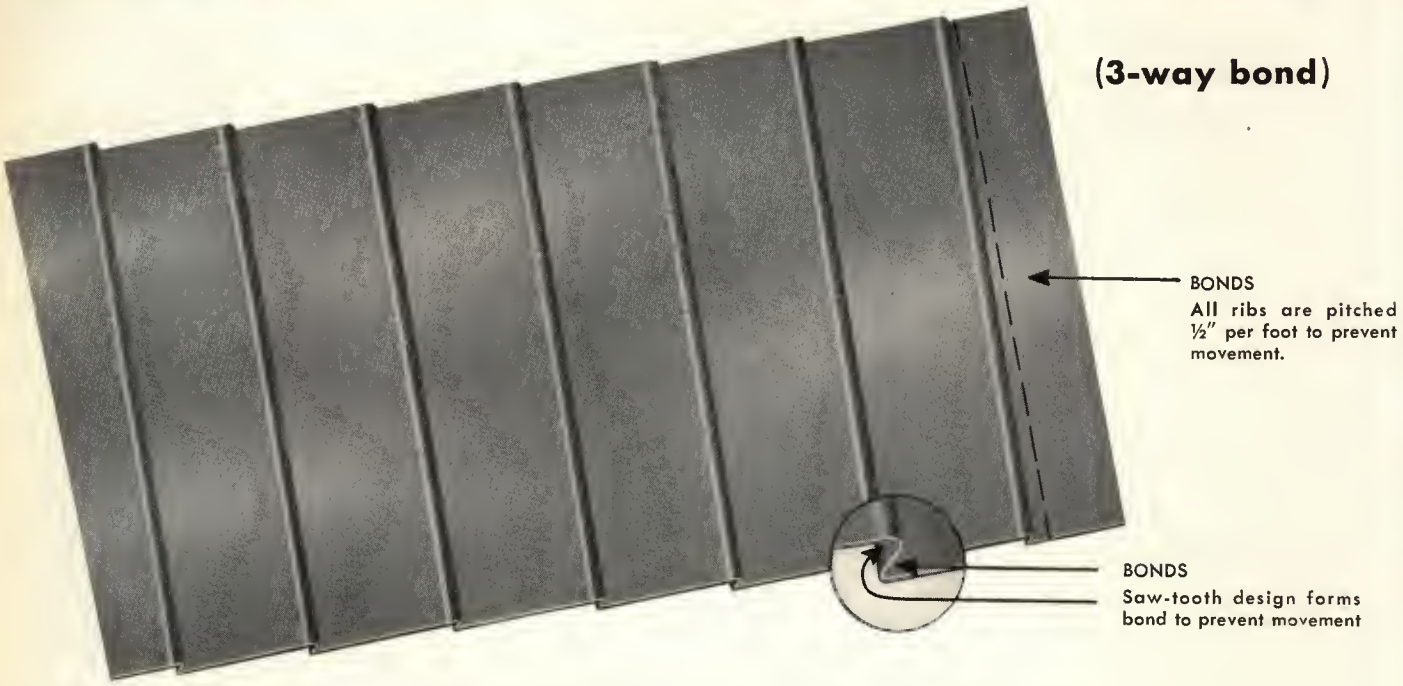
CHASE

copper roofing and roofing products

CHASE BRASS & COPPER CO. — INCORPORATED — WATERBURY, CONN.

CHASE thru-wall copper flashing



features of Chase Thru-Wall Copper Flashing . . .

1. Saw-tooth corrugations that form a mechanical key bond in the mortar — vertically as well as laterally.
2. Perfect drainage so that, if moisture should penetrate a wall, it will drain quickly.
3. It provides for expansion and contraction.
4. An interlocking overlap that requires no soldering.
5. A stiff counterflashing face that hugs the wall tightly after the base flashing has been installed.
6. It may be readily bent by the Sheet Metal Contractor.

Convenient size . . . Chase Thru-Wall Flashing comes in sheet form in standard widths up to and including 34" wide and in 6-ft. lengths. These sizes result in the most economical installation costs.

Economical. . . Chase Thru-Wall Flashing is reasonably priced and economical to use. The interlocking "Saw-tooth" feature makes a watertight joint without the use of solder.

Always available . . . Chase Thru-Wall Flashing is sold by our 21 warehouses throughout the country. This warehouse service oftentimes eliminates costly delays.

why thru-wall flashing is needed

Masonry walls cannot be depended upon to be permanently waterproof, even though the brick, stone, terra cotta or other materials may be waterproof as a unit and the mortar used may be rich enough to be considered waterproof. The shrinkage of these materials and the natural movement of the building may cause a masonry wall to leak.

It is, therefore, desirable to have flashing located to prevent rain water or moisture that may enter the exterior wall from coming in contact with steel or wood members in the wall, and seeping into the inside of the building.

The penetration of water through walls and roofs is one of the principal problems of Architects and Construction Engineers in the building industry. Copper Thru-Wall Flashing when properly installed helps to prevent leaks and solve drainage and penetration problems.

thru-wall copper flashing CHASE

There are several kinds of material that are used as Thru-Wall Flashing. These materials include saturated felts and fabrics as well as sheet metals.

We have followed the flashing problems of the building industry for many years, adapting our Copper Thru-Wall Flashing to the needs of the Architects, Engineers, and Sheet Metal Workers. The importance of installing Copper Thru-Wall Flashing, because of its resistance to corrosive action, cannot be over-emphasized. *Flashing once built into the wall cannot be replaced when worn out or corroded without tremendous replacement cost.* It is economical, therefore, to specify durable Thru-Wall Copper Flashing in the first place.

BONDS IN ALL DIRECTIONS—LATERAL AND VERTICAL

specifications for architects

All flashing through masonry walls shall be Chase Thru-Wall Flashing as manufactured by the Chase Brass & Copper Co. Flashing shall be of 16-oz. soft copper formed into a series of ribs shaped to a "saw-toothed" design at intervals of not more than 3½" and pitched ½" per foot so as to provide a mechanical key bond in all directions. End joints shall be interlocking and overlap at least 3" so that a watertight joint is made without soldering.

Here is a typical example of Chase Thru-Wall Flashing being installed under coping stones. The flashing prevents moisture from seeping through and into the wall itself.

CHASE copper roofing products

Copper has long been generally recognized and accepted as providing long life for use in building construction. Durability is an important factor in all types of buildings large and small, commercial, public and residential. Therefore, it should always be specified for all metal work for roofs, flashings, downspouts, gutters and all types of roofing accessories.

Copper will give the best results when it is properly installed. Construction details as recommended by the Copper & Brass Research Association should be carefully followed.

Keep in mind that the paramount purpose of the whole roofing, flashing and drainage system is to shed water and carry it away from the building. Valleys and flashings should be constructed so as to lead water away. Wall flashings should be installed so as to turn all water and moisture to the outside face of the building wall.

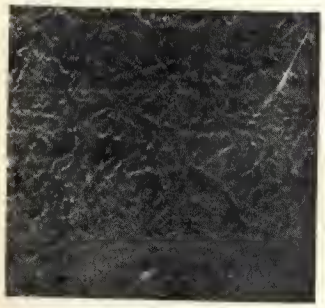
Thickness of copper roofing

16-oz. copper is considered standard for general sheet metal work in building construction. Lighter weights, such as 10-oz., have been satisfactorily used for sloping roofs of residences in suburban or rural locations. 16-oz. should be used for gutters, downspouts or valleys. On industrial and monumental building constructions, weights up to 32 oz. per square foot are recommended for built-in gutters, as well as other points where erosion or stresses set up by expansion and contraction might be severe.

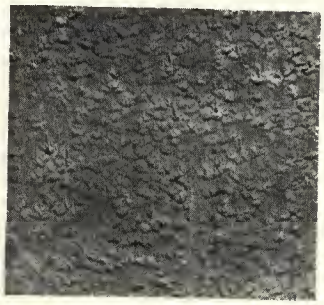
lead coated copper

All Chase sheet, roll and strip copper, and Chase roofing products can be furnished lead coated, with a wide range of finishes from rough heavy coatings to light smooth coatings available from mill stocks.

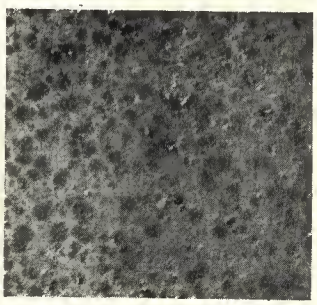
Lead coated copper has the neutral gray coloring of solid lead, the added advantage of lightness, easy working qualities, lower basic cost and is supplied in the following finishes:



Chase Commercial Finish: Coated with 12 to 15 lbs. of lead per 100 square feet on both sides.



Chase Puritan Finish: Coated with 25 to 30 lbs. of lead per 100 square feet on both sides.



Chase Colonial Finish: Coated with 40 to 50 lbs. of lead per 100 square feet on both sides.

cop-o-top CHASE

for waterproofing and damp-proofing

Chase Cop-O-Top is furnished in standard widths in rolls 120 ft. long. It is easy to handle and easy to install.

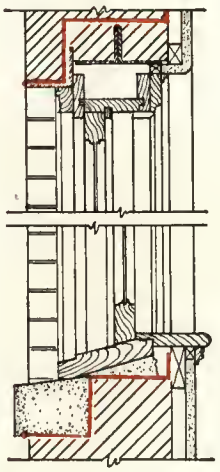
Chase Cop-O-Top is a most practical type of material for concealed sheathing, waterproofing and damp-proofing purposes.

In masonry construction, it is recommended for waterproofing heads and sills of windows, spandrel beams and many other places where flashing is not exposed and where first cost is important. For residences, Cop-O-Top is recommended for flashing windows and doors, and for sheathing sidewalls, roofs and attics to prevent infiltration of dust, air and dampness. It is also recommended for damp-proofing cellars and foundations, and for protection against termites and other vermin.

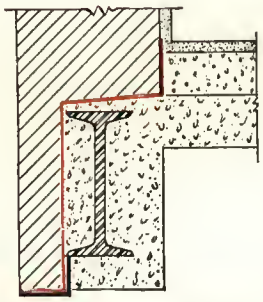
Chase Cop-O-Top consists of one layer of thin sheet copper — 1, 2 or 3 oz. and 1, 2 or 3 layers of asphalt saturated creped paper. All layers are strongly bonded with asphalt to form a single sheet that is extremely tough and flexible, and may be handled freely without tearing, kinking, cracking or puncturing. It can be folded and formed by hand to fit into nooks and corners, and around odd shapes without breaking.

Chase Cop-O-Top is installed quickly and easily as the masonry progresses. It is laid with the copper side up.

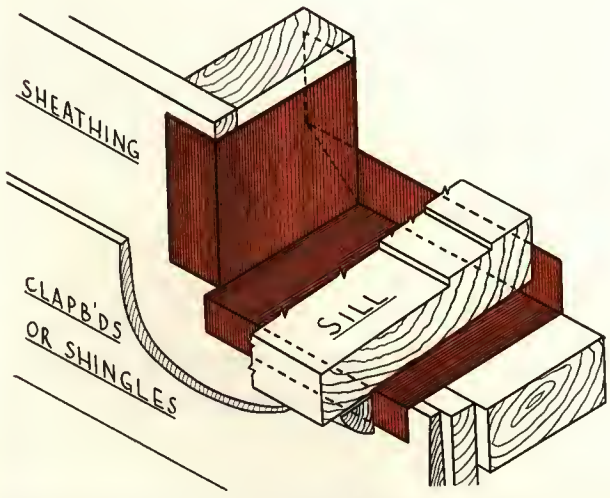
These features, together with the corrosion-resistant advantages of copper, make Chase Cop-O-Top especially practical for all types of waterproofing and damp-proofing.



Chase Cop-O-Top flashing around window heads and sills.



Waterproofing spandrel beams with Chase Cop-O-Top; install with 6" laps trowelled with asphalt.



Chase Cop-O-Top drip pan for flashing under window sills. (Note: The 30" roll can be cut into 4 strips—7½" wide).

Specifications

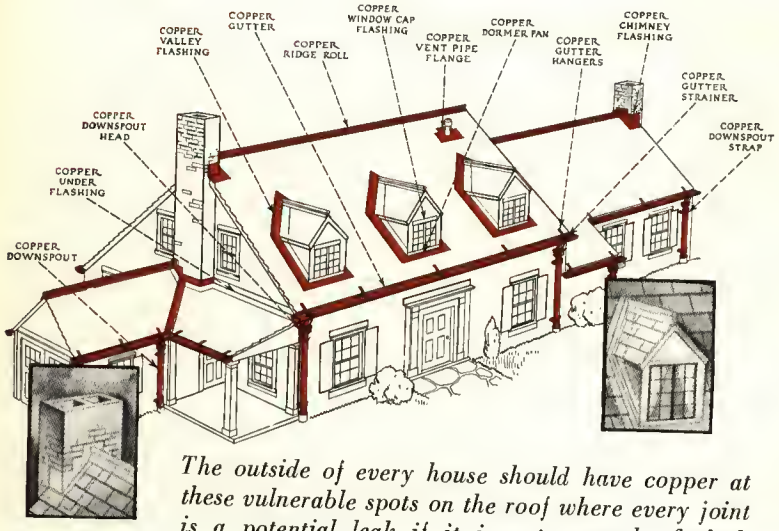
All membrane waterproofing shall be Chase Cop-O-Top (1 oz.—1 ply); (1 oz.—2 ply); (2 oz.—2 ply); (3 oz.—3 ply); consisting of one layer of sheet copper as designated, bonded to (1), (2), (3) layers of building paper, thoroughly impregnated with a bituminous compound and creped to allow a minimum stretch of 12%. The layers of copper and the several plies of saturated building paper shall be inseparably bonded together with asphalt to form a single flexible sheet that will not easily kink or crack when forming by hand.

To be installed with copper side facing up or toward the outside of the building.

Standard sizes

Chase Cop-O-Top is furnished in standard rolls 10, 12, 15, 20, 24, 30, 36, 40 and 60 in. wide by 120 ft. long. Other widths can be made to order. It is regularly supplied in 1 oz.—1 ply; 1 oz.—2 ply; 2 oz.—2 ply; and 3 oz.—3 ply. Other combinations can be made to order.

CHASE copper roofing products



The outside of every house should have copper at these vulnerable spots on the roof where every joint is a potential leak if it is not properly flashed.

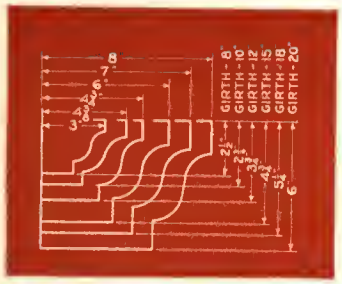
Durability is an important factor in all types of buildings large and small, public and residential. Therefore, Copper should always be specified for roofs, flashings, downspouts, gutters and all types of roofing accessories.

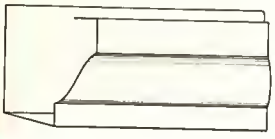
Copper gutters

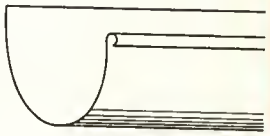
Chase Gutters are made from 16 oz. copper. Heavier weight can be furnished to special order but we do not advocate nor make anything lighter than 16 oz.

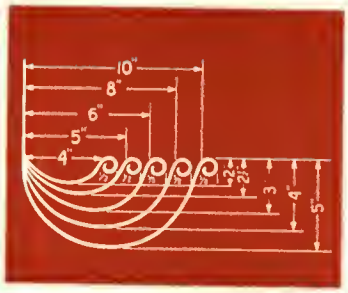
Copper gutter hangers

Chase Gutter Hangers are made in two types, the strap hanger and the shank and circle hanger. We can supply a wide range of copper and bronze hangers for round gutters and style "K" box gutters.







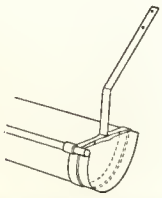


Style K — O. G. box gutters

Style K, O. G. Box Gutters are made in 10 ft. lengths from 16 oz. copper and are usually carried in stock in 10″ and 12″ girths; other sizes can be made to order.

Half round copper gutters

Chase Half Round Gutters are uniform in width throughout the entire length and true to size and shape. Standard gutter is Single Bead, Lap Joint; Sizes 4″ to and including 10″. Lengths 10 ft.

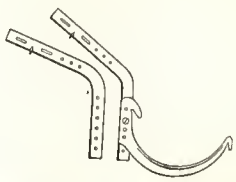


Chase strap hangers

Chase strap hangers are made of heavy gauge copper and can be supplied for 4″, 5″ and 6″ gutters. The strap encircles the gutter as illustrated, and is attached to the roof.

Chase monarch hangers

The Chase Monarch shank and circle hanger, stamped from heavy gauge copper, is adjustable to fit varying roof pitches. The outside tip of the circle is bent over the bead after installation to lock the gutter firmly in place.

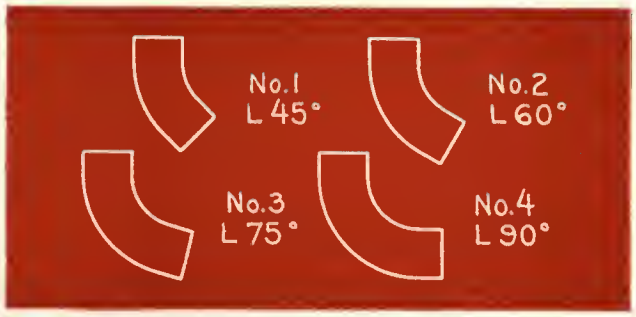


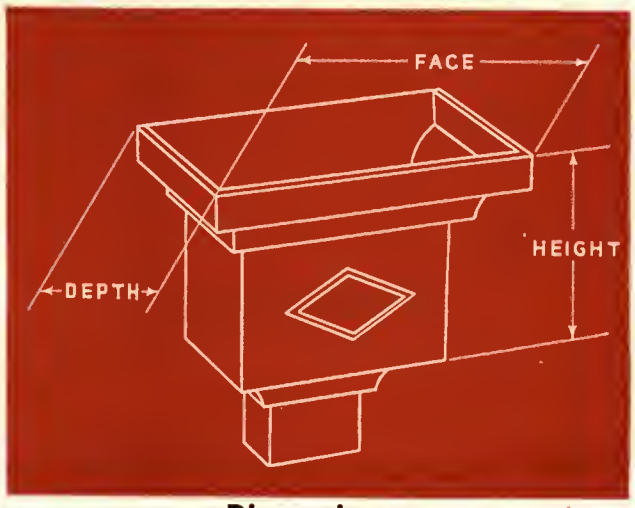
Chase type B hangers

Type B shank and circle hangers are made of cast bronze, or stamped copper or bronze. Various types of shanks are available to fit every installation.

The following are the dimensions of square corrugated downspouts: Diameters of round and corrugated round downspouts are listed in description at right.

List Size	Short Side (A)	Long Side (B)
2″ (1 x 2)	1⅞″	2⅜″
3″ (2 x 3)	2¼″	3″
4″ (3 x 4)	2¾″	4 3/16″
5″ (4x 5)	3⅝″	5⅙″





Dimensions

(Subject to Commercial Variation)

Pattern	No.	Outlet		Face	Depth	Height
		Square	Round			
Large Dia.	1A	2″x3″	3″	10″	6″	9″
Large Dia.	1B	3″x4″	4″	11″	6½″	9″
Small Dia.	2A	2″x3″	3″	9″	5½″	7½″
Small Dia.	2B	3″x4″	4″	10″	6″	7½″
Fleur-de-lis	3A	2″x3″	3″	9″	5½″	7½″
Fleur-de-lis	3B	3″x4″	4″	10″	6″	7½″

Note: The above standard types can be supplied to fit other standard sizes of downspouts.

Stock downspouts

Chase Copper Downspouts are made in lengths of 10 feet. The corrugations are deep and even, which is a genuine protection against bursting from ice expansion. The seams are tightly locked with a power press and are uniform throughout the entire length. Each length is die-stamped with the Chase trade-mark and "16-oz.", which is your protection against downspouts made from light weight copper sheets.

Chase Copper Downspouts come in three types and five sizes; plain round and corrugated round in 2, 3, 4, 5 and 6 inch diameters; corrugated square in 2, 3, 4 and 5 inch sizes. All downspouts are normally carried in stock in 10-ft. exact lengths.

Copper elbows and shoes

Chase Copper Elbows and Shoes are made for 2″, 3″, 4″, 5″ and 6″ downspouts. Elbows are made in four types; No. 1—45°, No. 2—60°, No. 3—75°, No. 4—90° angle. Shoes are made in No. 3—75° angle only. The ends of all Chase Shoes are strongly reinforced at the open ends so they can't be easily dented.

Square corrugated elbows and shoes are made in two styles; A is the style which has its long side against the wall; B is the style which has its short side against the wall.

Downspout heads

Where strict economy must be practiced, any of the stock patterns of Chase Copper Downspout Heads, Small Diamond, Large Diamond or Fleur-de-lis, are acceptable for the average building. Their simple, good-looking designs adapt them to almost any style architecture. Quantity production permits very reasonable prices on these stock patterns.

All downspout heads are available with either round or square outlets, and any of the stock patterns can be supplied lead coated.

Architects often design their own leader heads to harmonize with the individual design of a building. These specially designed leader heads can be made to order from architect's drawings. In making specially designed leader heads the greatest care is taken to follow blueprints, drawings and specifications accurately.

Mitres, ends, outlets and caps

Chase copper mitres are made to fit all single and double bead half round gutters and style "K" box gutters in 10″ and 12″ girths. Chase copper end pieces with outlet only are made to fit single and double bead half round gutters. Chase round and square copper outlets are made in 2″, 3″, 4″, 5″ and 6″ sizes. There is an adequate flange on the top of the outlet for soldering the outlet to the gutter. Lap joint end caps are available for 4″, 5″ and 6″ gutters. Slip joint end caps are made for 4″, 5″, 6″ and 7″ gutters. Lap joint and slip joint end caps will fit single bead and double bead gutters. End pieces and end caps for style "K" box gutters are made in 10″ and 12″ girths. End pieces for all other box gutters are made to order.

CHASE® copper nails

copper wire and cut nails

Chase Copper Wire and Cut Nails are available in a large variety of types and sizes. There is a Chase nail to fill practically every need of the roofer. Chase nails have heads and shanks of a uniform size and they drive straight and true because the head is well centered. Nails are measured in size according to the type of head. Flat Head Nails are measured from under the head to the end of the point. Flat countersunk head nails are measured over-all from the top of the head to the end of the point. Oval and round countersunk head nails are measured from the largest diameter of the countersunk head to the end of the point.

copper wire nails

Chase Copper Wire Nails are available in many standard and special sizes. They are the same shape as the common steel nail. They have a flat head and a diamond point and are recommended for general usage where a non-rusting corrosive resistant nail is required.

cut copper clout nails

Clout Nails have a flat head and the same holding advantages as the regular cut copper nail. However, in some cases, Clout Nails are preferred because they have slender shanks that drive through thin boards easily and the points can be bent over (clinched) without splitting the wood after the nail is driven.

copper storm nails

This nail has a large octagonal head made of copper strip that is strong and rigid. The head is also dished so that it will set flat and firmly against the sheathing. Storm Nails are carried in stock in ¾″ and 1⅛″ lengths with No. 14 Stubs Gauge Shanks. These shanks are clenched securely into the center of the head so they won't break loose.

copper wire slating or roofing nails

Chase Copper Wire Slating or Roofing Nails are available in nine standard sizes and many special sizes. They have a large flat head and a diamond point. The large head prevents the metal from pulling over the nail head. These nails are generally used on shingle, slate and other roofing and sheet metal work.

regular cut copper nails

Chase Cut Copper Nails are stamped out of sheet metal. They have two or three times the holding power of wire nails because the ragged rough edges of the shanks cut through the wood fiber, the round shank of a wire nail spreads the fiber.

cut sheathing nails

Chase Cut Sheathing Nails are available in copper and yellow metal — 1″, 1⅛″ and 1¼″ long.

gutter spikes for box gutters

Oval and Flat Head Copper Gutter Spikes are available in the following sizes: ¼″ dia. 6″ and 7″ long, 3/16″ dia. 7″ long, No. 5 gauge 8″ long.

CHASE BRASS & COPPER CO. — INCORPORATED — WATERBURY, CONN.

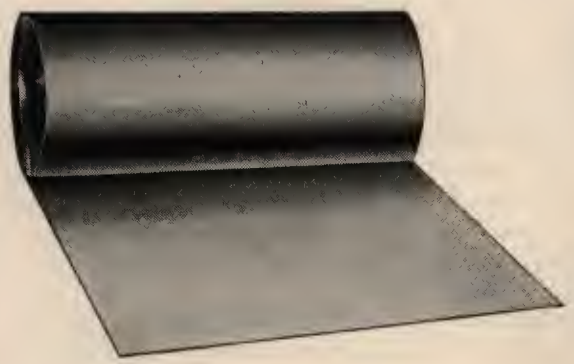
Subsidiary of Kennecott Copper Corporation

WAREHOUSES: *Atlanta - Baltimore - Boston - Chicago - Cincinnati - Cleveland - Detroit - Indianapolis - Kansas City - Los Angeles - Milwaukee Minneapolis - Newark - New Orleans - New York - Philadelphia - Pittsburgh - Providence - St. Louis - San Francisco - Seattle - Waterbury*

SALES OFFICES: *Albany - Houston - Rochester*

MILLS: **WATERBURY, CONN. AND CLEVELAND, OHIO**

10-48—Printed in U.S.A.



FOLLANSBEE

SEAMLESS TERNE

ROLL ROOFING

FOLLANSBEE STEEL CORPORATION
General Offices—Pittsburgh 30, Pa.
FOLLANSBEE METAL WAREHOUSES
Pittsburgh, Pa., Rochester, N. Y., and Fairfield, Conn.

SALES OFFICES—New York, Philadelphia, Rochester, Cleveland, Detroit, Milwaukee.

SALES AGENTS—Chicago, Indianapolis, St. Louis, Kansas City, Nashville, Houston, Los Angeles, San Francisco, Seattle; Toronto and Montreal, Canada.

PLANTS—Follansbee, W. Va., and Toronto, Ohio.

PRODUCTS—Seamless Terne Roll Roofing • Clad Metals • Cold Rolled Carbon Sheets & Strip • Polished Blue Sheets • Electrical Sheets & Strip.

FOLLANSBEE SEAMLESS TERNE ROLL ROOFING IS NATIONALLY DISTRIBUTED THROUGH LEADING JOBBERS.

GENERAL INFORMATION

The advantages of Terne roofing are widely recognized — strength without excessive weight, enduring protection against weather, fire-retarding properties, protection against lightning. Many buildings dating from the Colonial period are still covered with their original Terne roofs. In addition, Terne plate is extremely malleable and can be worked into the most intricate shapes, can be folded, bent, stretched and fastened.

Follansbee Seamless Terne Roll Roofing provides all these advantages inherent in quality Terne roofing — plus the exclusive feature of long rolls rather than the sheet sizes in which all other Terne plate is furnished. Made of prime steel strip uniformly coated with a terne mixture of finest lead and tin, Follansbee Seamless Roofing is coiled in 50 and 100 foot lengths. This eliminates cross-seaming, affording these advantages of importance:

Economy of Installation—On larger areas, savings in time and materials mount to substantial proportions. Rolls are easier to handle and can be cut to any desired length. Edges are uniformly straight and there are no buckles — field trimming is unnecessary to correct for camber.

Client Satisfaction—The seamless application provides greater durability and reduces maintenance, since the weak point in any roof is the joint. Appearance is improved, as there are no cross seams to mar the smooth contours of standing vertical seams, which lend themselves to such a wide variety of architectural designs. A Follansbee Terne roof can be painted any color at any time, for perfect harmony with other colors used in the building.

Hundreds of thousands of rolls of Follansbee Seamless Terne Roll Roofing are in satisfactory service on buildings of all types—industrial, institutional, residential.

GENERAL DATA

Note particularly the great tensile strength, the lightness in weight and the low expansion of Follansbee Seamless Terne Roll Roofing:

Lengths—50 and 100 foot rolls.
Widths—14", 20", 24", 28".
Gauges—IC, .0122"; IX, .0155" (before coating).
*Coating—40 lb., 20 lb., 8 lb. (per 436 sq. ft.).
Weight—IC—62 lb.; IX, 76 lb. (per 100 sq. ft. laid).
Tensile Strength—45,000 lbs. per sq. in.
Expansion—.825" per 100 ft. per 100° F.

*Government regulations restrict the coating weight of all Terne roofing and limit its use to essential maintenance and repair. At the present time 20-pound coating is the heaviest coating weight available.

STANDARD SPECIFICATIONS

All roof surfaces of the building shall be covered with FOLLANSBEE SEAMLESS TERNE ROLL ROOFING (weight and gauge to be specified by the Architect), embossed with the brand name. No substitute for the above will be allowed.

FOLLANSBEE SEAMLESS TERNE ROLL ROOFING shall be laid on selected waterproof paper (tar paper and other qualities containing acids prohibited). No nails shall be driven through the strips. All solder used shall be strictly half-and-half. Rosin only shall be used as a flux for soldering, and all rosin must be removed from seams before painting. No acid flux shall be used.

FOLLANSBEE SEAMLESS TERNE ROLL ROOFING shall be painted one coat on under side and two coats on upper side with venetian red oxide of iron paint, ground and mixed in pure boiled linseed oil. Lower coat to be applied in the shop and thoroughly dry before sheets are laid. First upper coat applied immediately after roof is completed; second coat three days later (specify color desired). All painting shall be done with a hand brush and well rubbed in, and shall be part of the roofing contract.

The roofers shall wear rubber shoes and no unnecessary walking over the roof or using the same for storage of other material will be allowed. All workmanship guaranteed for one year.

When pitch of roof is two and one-half inches or less to the foot, it is to be laid flat lock. Cleats to be one and one-half inches wide and carefully hooked over one-half inch edge and nailed to sheathing with two 7/8" roofing nails to each cleat. The seams are to be thoroughly and smoothly hammered down with wooden mallet and carefully soldered with large coppers.

When there is sufficient pitch (two and one-half inches or more per foot) the roof is to be laid standing seam. The courses are to be joined with double locked standing seams and secured to sheathing with cleats every twelve inches, using two 7/8" roofing nails to each cleat. (In no instance should the nail go through the sheathing.) The edges for standing seams shall be turned up one and one-quarter inches and one and one-half inches, the standing seam to be one inch high when completed.

All valleys and gutters shall be applied flat lock, of sufficient pitch to prevent any water standing therein.

Flashings: FOLLANSBEE SEAMLESS TERNE ROLL ROOFING to be turned up not less than six inches at chimneys and fire walls and to be cap-flashed four inches, cap flashings to extend into brick work one inch and to be firmly wedged in with wedges not over fifteen inches apart. Fill openings in brickwork with Portland cement.

STANDING SEAM SPECIFICATIONS

Use FOLLANSBEE SEAMLESS TERNE ROLL ROOFING (weight and gauge). Paint one side and dry well before applying to roof with painted side down. This shop coat may be applied at the mill. Before beginning the first course, be governed by proper application at ridge, gutter, valley, drip edge, end or side wall, etc., according to diagram.

(Specify ridge treatment to be either flat seam, standing seam, or seamless with continuous cross seams as shown by diagram.)

To form standing seams, make vertical bend along the longer dimensions of sheets or rolls, on one side 1½" high and on the other side 1¼" high. Place first course in position with painted side down. Do not nail through the strips. Use cleats, made of the same material. Nail cleats every 12" or less along the 1¼" upturned edge. Bend the cleat ¼" over top of the upturned edge and bend the other end of cleat over nail head. Place next course in position with the 1½" flanged edge adjoining the one attached to the roof. Bend ¼" of the 1½" flange edge over the 1¼" cleated edge, forming a single lock standing seam 1¼" high; continue by turning over ¼" of the standing seam 1" high. Press the seam tightly together in each operation. Stagger cross seams to avoid extra thickness in pressed standing seams.

All cross seams to be single locked soldered joints excepting expansion joints which must be placed above the high water line of gutters, valleys, walls, etc. Cross seams to be made according to the flow;

that is, the higher strips must always overlap the lower adjoining strips.

All work must be painted immediately after application.

SPECIFICATIONS—GUTTERS, VALLEYS, FLASHINGS

Use FOLLANSBEE SEAMLESS TERNE ROLL ROOFING (weight and gauge). Paint one side and dry well before applying to building with painted side down.

Gutters and Valleys—All cross seams to be flat lock soldered. Joints to be made according to the flow with higher strips overlapping lower strips. No seams to be made the long way. Do not drive nails through strips. Use cleats spaced at 12" intervals.

Drip Edges and Flashings—When strips are nailed to the building instead of cleated, they are to be formed and finished to overlap and cover all nail heads. All work to be painted immediately after application to roof.

FLAT LOCKED SEAM SPECIFICATIONS

Use FOLLANSBEE SEAMLESS TERNE ROLL ROOFING (weight and gauge). For roofing or at end walls, side walls, gutters, drip edges, valleys, flashings, etc., use 14", 20", 24" or 28" wide Seamless rolls (specify preference). Paint one side and dry well before applying to roof with painted side down. Do not nail through the strips. Attach strips to roof with cleats made of the same material. Place cleats at 8" intervals. See diagram Plate 1, figure "B."

Notch corners of the strips and turn ½" edges (top and one end turned up and bottom and one end turned under) to form ½" flat seam.

Before beginning the first course be governed by proper application at ridge, drip edge, end or side wall, gutters, valleys, etc.

Nail cleats to sheathing board. Bend one end of cleat over nail heads and hook the other end of the cleat into the ½" edge formed on strip. Lay strips according to the flow; i.e., placing the strip higher on the roof over the upper edge of the lower adjoining strip.

Stagger all joints. Seams to be malleted down to form flat overlapping surface. Carefully mallet the seams to avoid buckling. Soak the seams well with half-and-half solder, using Rosin as a flux. Remove all excess rosin before painting. Never use acid flux.

All work must be painted immediately after application.

RIBBED OR BATTEN SPECIFICATIONS

Use FOLLANSBEE SEAMLESS TERNE ROLL ROOFING (weight and gauge). Paint one side and dry well before applying to roof with painted side down (specify size of batten and width of each course —usual size of batten ranges from 2" x 2" to 4" x 4"— finished seam should be not less than 1" high).

Before beginning the first course be governed by proper application at drip edges, ends or side walls, ridges, gutters, valleys, etc.

All cross seams to be flat locked and soldered. Formation of batten seams to be according to Plate 1, showing finished seam (Figure C) and progressive steps in forming and attaching with cleats. Ribbed seams at ridge and hip to be constructed as described in Plate 1 (Figure J). Ends of battens to be constructed as described in Plate 1 (Figure H and progressive steps in forming No. 1, 2 and 3).

Do not drive nails through strips. Use cleats, space at intervals of 8".

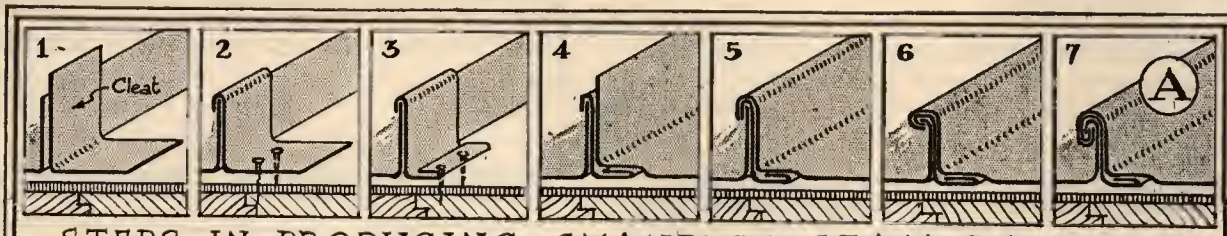
Stagger the cleats along battens.

Stagger all flat lock soldered seams to avoid extra thickness.

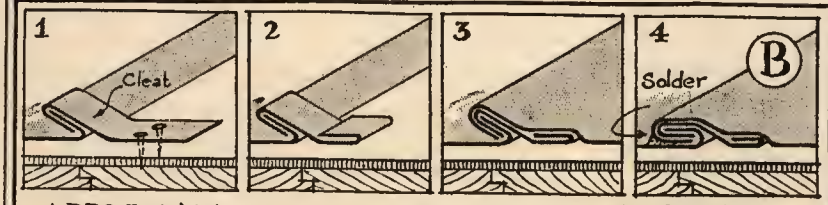
All work must be painted immediately after application.

Roofing details, examples of application and other data are provided in A.I.A. file 12-C-1, which will be furnished on request.

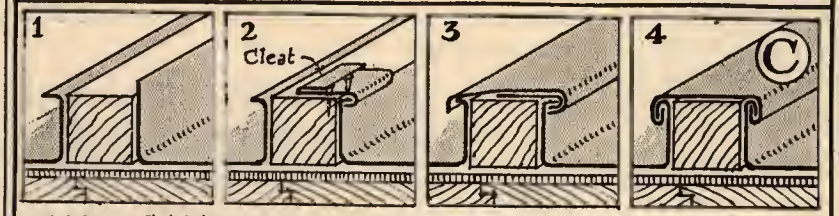
The attractive appearance of Follansbee Seamless Terne Roll Roofing laid with standing seams is an important consideration in residential building. The roof can be painted any color for complete harmony with others used on the exterior.



STEPS IN PRODUCING STANDING SEAM ROOF



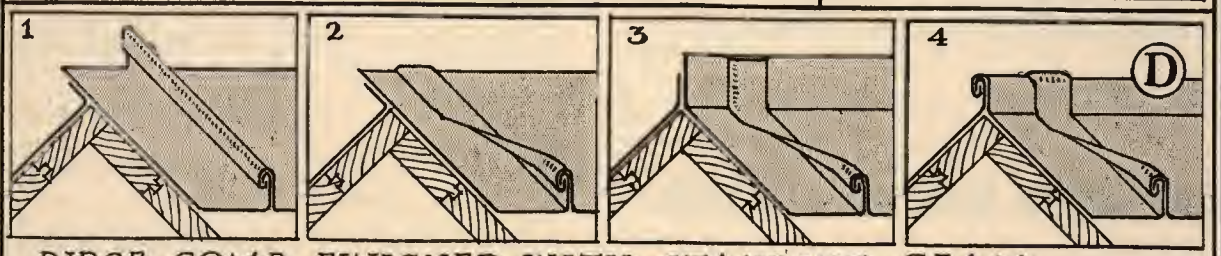
APPLICATION OF FLAT SEAM ROOF



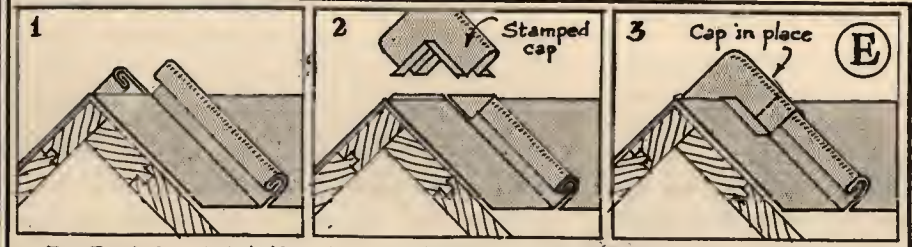
APPLICATION OF RIBBED SEAM ROOF

LEGEND

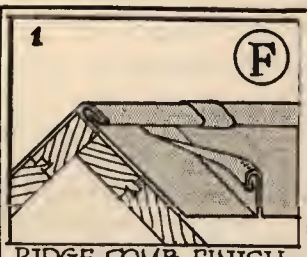
THE DRAWINGS ON THIS SHEET SHOW THE THREE STANDARD TYPES OF TIN SEAMS A-B-C AND THEIR APPLICATION AT RIDGE, VALLEY AND GUTTER••• PROGRESSIVE STEPS ARE NUMBERED CONSECUTIVELY AND FINAL CONDITION NOTED BY LETTER THUS Ⓐ ETC•• ALL SEAMS ARE OPENED OUT TO SHOW CONSTRUCTION CLEARLY•• DRAWINGS ARE NOT MADE TO SCALE, BEING ONLY DIAGRAMMATIC•••••••



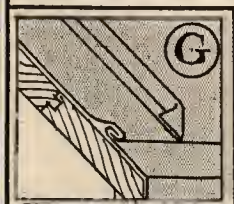
RIDGE COMB FINISHED WITH STANDING SEAM



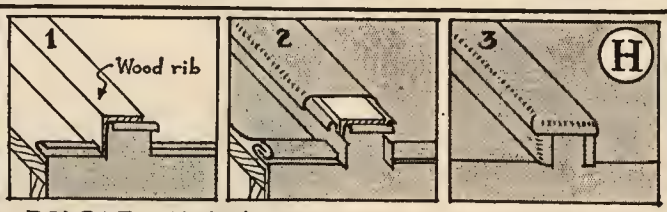
RIDGE COMB FINISHED WITHOUT SEAM



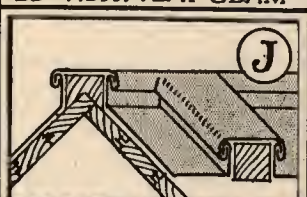
RIDGE COMB FINISHED WITH FLAT SEAM



STANDING SEAM GUTTER OR VALLEY



RIBBED SEAM FINISHED AT GUTTER



RIBBED SEAM FINISHED AT RIDGE

FOLLANSBEE STEEL
PITTSBURGH · PENNA

SEAM DETAILS

PLATE NUMBER I

FOLLANSBEE STEEL CORPORATION
General Offices—Pittsburgh 30, Pa.

MAHON

INSULATED STEEL WALLS

AND INSULATED

PREFAB WALL PANELS

. . . Heat Transmission Coefficient "U" Equivalent to 18 Inch Solid Masonry Wall

THE R. C. MAHON COMPANY

DETROIT 11, MICHIGAN • REPRESENTATIVES IN ALL PRINCIPAL CITIES

MAHON INSULATED STEEL SIDEWALLS

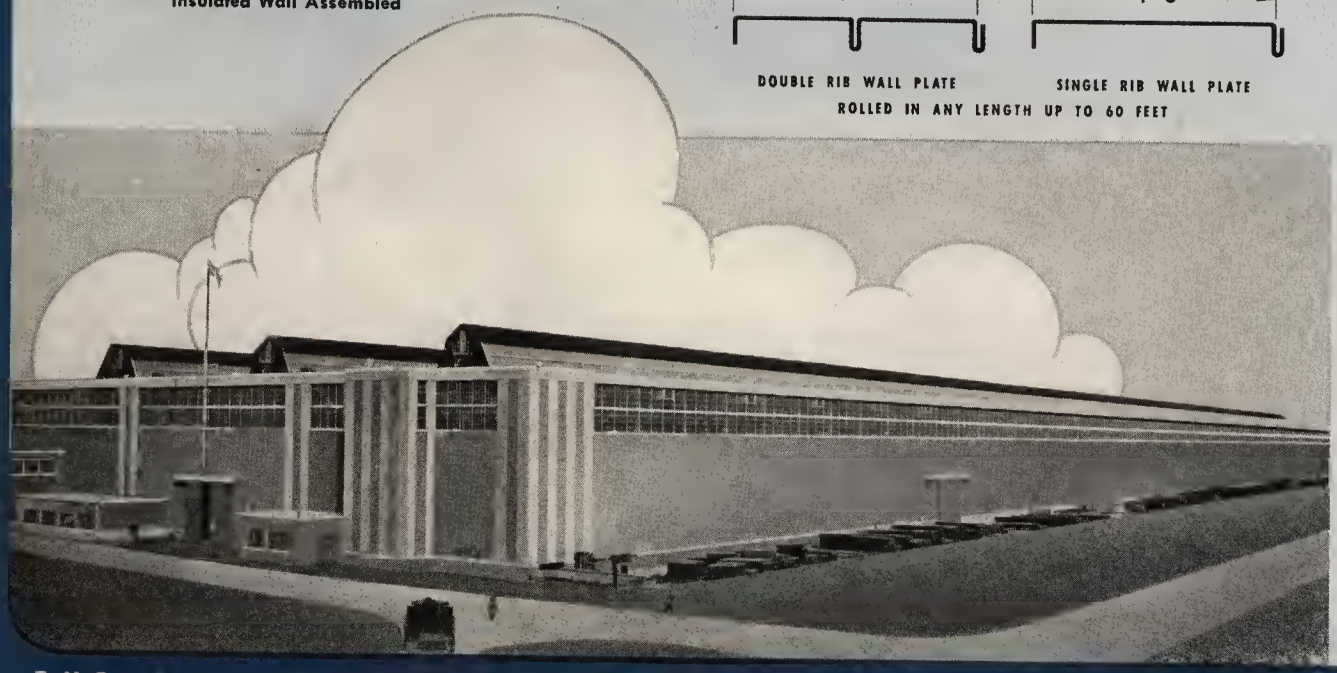
ECONOMICAL FIELD CONSTRUCTED WALL with UNUSUAL THERMAL PROPERTIES

Mahon Field Constructed
Insulated Wall Assembled

For industrial or commercial buildings requiring insulotion against heat loss, cold and noise, the Mahon Insulated Steel Sidewall construction provides on ideal economical exterior wall. The wolls ore field constructed from two standard wall plates (see sections below) which ore rolled from 18 ond 20 gouge golvanized steel, stainless steel, or aluminum. These plates can be rolled in ony length up to 60 ft. to provide continuous exterior wall surface without horizontal joints.

CONSTRUCTION—The inside wall plates are placed with flat side in and welded securely to the sill angle, intermediate girts, and the eave strut—each plate interlocking with the preceding plate. Two inches of Fiberglas insulation is then laid between the ribs of the inside wall plate and o ⅜" x 1" channel is welded laterally across the ribs of the wall plates at 4'-0" intervals between the sill and eave strut. This angle serves as a spacer between the wall plates, ond, with legs facing in, present a minimum of through metal contact agoinst ribs of the inside plotes. The outside plates are then placed with ribs out and offset from the ribs of inside plates by 1½ inches. The outside plates ore also interlocked with each preceding plate

DOUBLE RIB WALL PLATE SINGLE RIB WALL PLATE
ROLLED IN ANY LENGTH UP TO 60 FEET



THE R. C. MAHON COMPANY • Detroit 11, Michigan
WESTERN SALES DIVISION, CHICAGO 4, ILLINOIS • Representatives in All Principal Cities

MAHON INSULATED STEEL SIDEWALLS

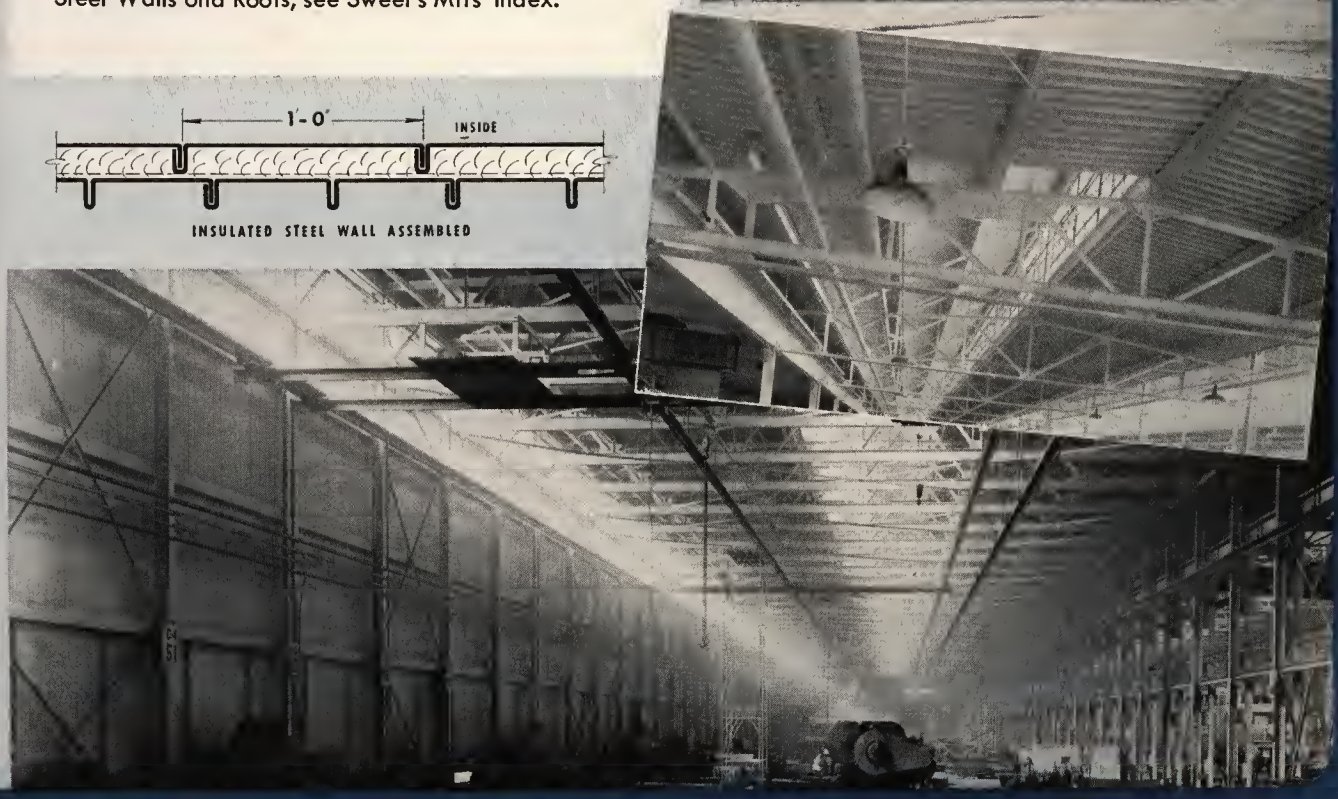
HEAT TRANSMISSION COEFFICIENT "U" = 0.15
. . . EQUIVALENT TO 28" BRICK WALL

and ore welded or clipped to the spacer channels os installed. The interlocking ribs of the outside plates are then securely locked together by means of a button punch lock, thereby providing lateral continuity in the wall surface between supporting members. See details on poge 4.

THERMAL PROPERTIES—In actual tests conducted by the Department of Mechanical Engineering, Cose Institute of Technology, using the guarded hot box method, the Heat Transmission Coefficient "U" of this type of wall construction was determined to be 0.15, or equivalent to thot calculated for o 28 inch solid masonry wall.

ACCEPTANCE—In the past six years many industrial and commercial structures such os outomobile plants, steel mills, power houses, warehouses, etc. have been built with this wall construction. Mony leoding construction concerns throughout the country have shown keen interest ond enthusiasm for the unusuol thermal properties, economy in material cost, and the saving in labor due to the ease and rapidity with which the walls may be erected. Note: For Mohon Noninsulated Steel Walls ond Roofs, see Sweet's Mfrs' Index.

INSULATED STEEL WALL ASSEMBLED



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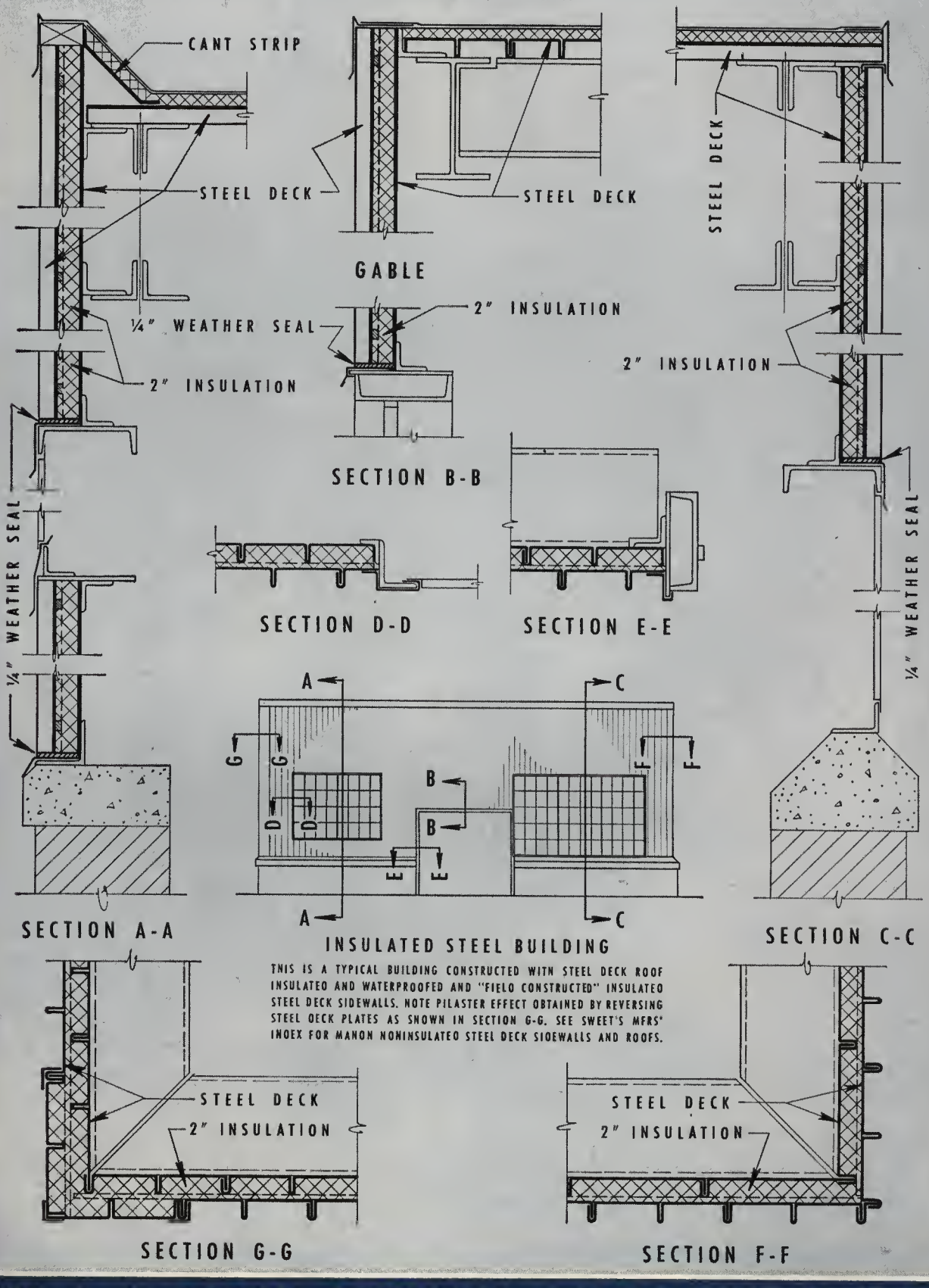
TYPICAL CONSTRUCTION DETAILS

SEE PAGES 2 AND 3 FOR INFORMATION

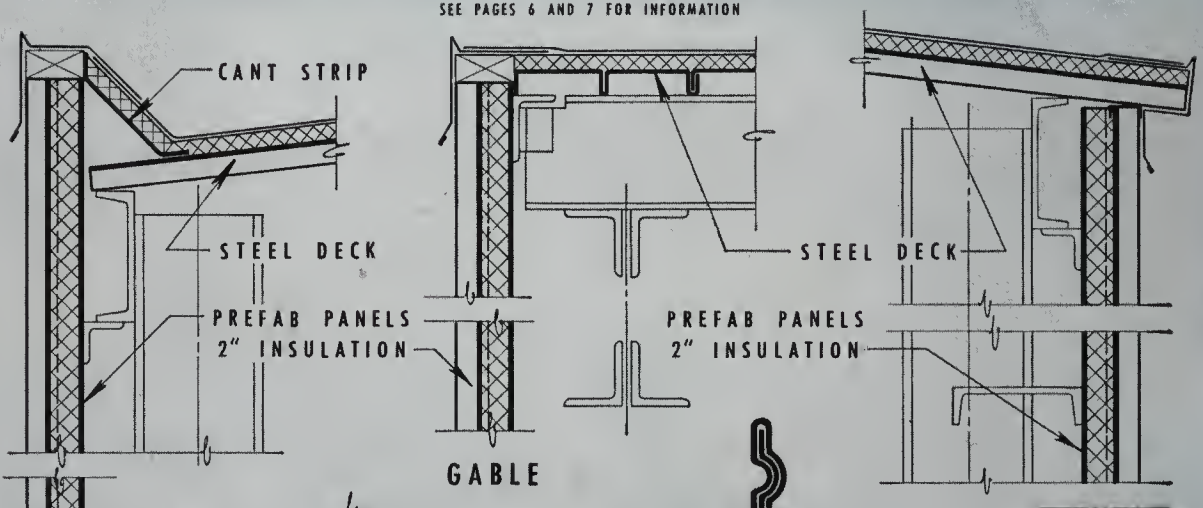


THIS IS A TYPICAL BUILDING CONSTRUCTED WITH STEEL DECK ROOF INSULATED AND WATERPROOFED AND "FIELD CONSTRUCTED" INSULATED STEEL DECK SIDEWALLS. NOTE PILASTER EFFECT OBTAINED BY REVERSING STEEL DECK PLATES AS SHOWN IN SECTION G-G. SEE SWEET'S MFRS' INDEX FOR MAHON NONINSULATED STEEL DECK SIDEWALLS AND ROOFS.

INSULATED PREFAB WALL PANELS

TYPICAL CONSTRUCTION DETAILS

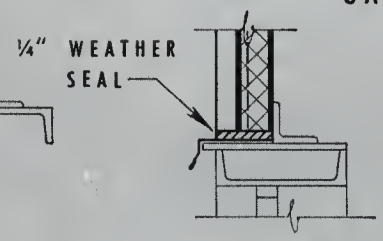
SEE PAGES 6 AND 7 FOR INFORMATION



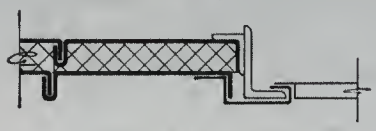
GABLE

BUTTON PUNCH LOCK

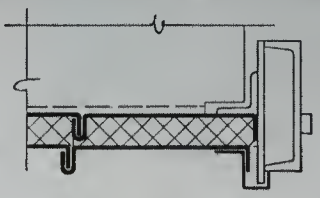
THE OUTSIDE INTERLOCKING RIBS OF MAHON PREFABRICATED INSULATED STEEL WALL PANELS ARE SECURELY LOCKED TOGETHER IN THIS MANNER, THEREBY PROVIDING EXCELLENT LATERAL CONTINUITY IN THE WALL.



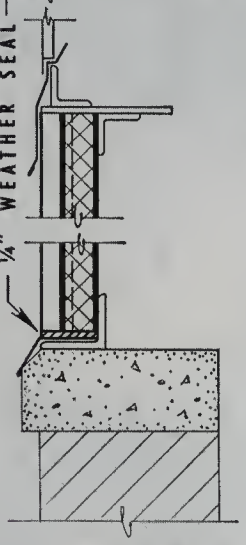
SECTION C-C



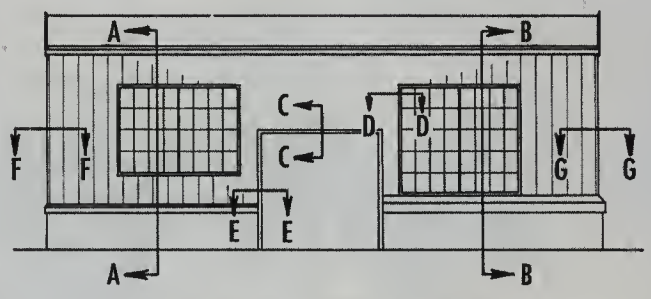
SECTION D-D



SECTION E-E

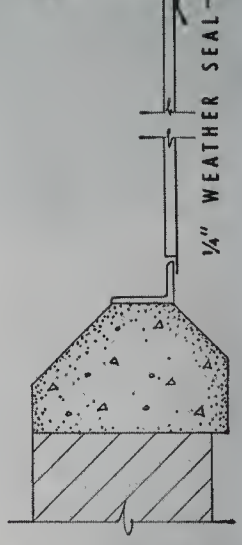


SECTION A-A

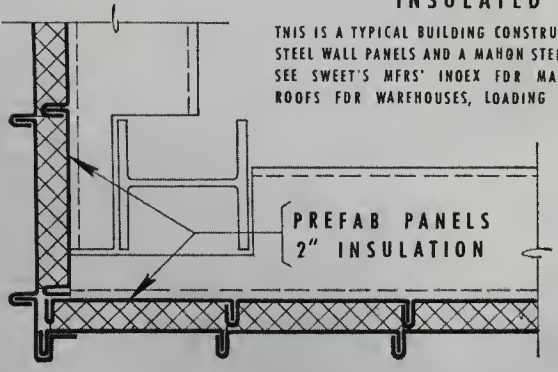


INSULATED STEEL BUILDING

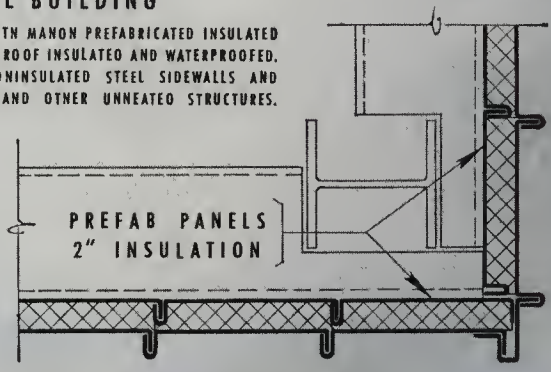
THIS IS A TYPICAL BUILDING CONSTRUCTED WITH MAHON PREFABRICATED INSULATED STEEL WALL PANELS AND A MAHON STEEL DECK ROOF INSULATED AND WATERPROOFED. SEE SWEET'S MFRS' INDEX FOR MAHON NONINSULATED STEEL SIDEWALLS AND ROOFS FOR WAREHOUSES, LOADING DOCKS AND OTHER UNHEATED STRUCTURES.



SECTION B-B



SECTION F-F



SECTION G-G

THE R. C. MAHON COMPANY • Detroit 11, Michigan
WESTERN SALES DIVISION, CHICAGO 4, ILLINOIS • Representatives in All Principal Cities

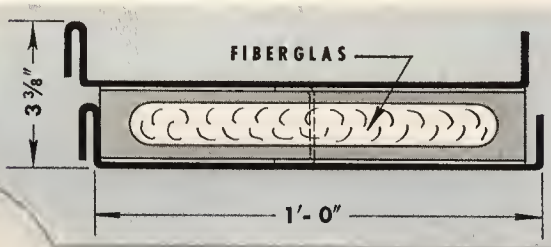
INSULATED PREFAB WALL PANELS

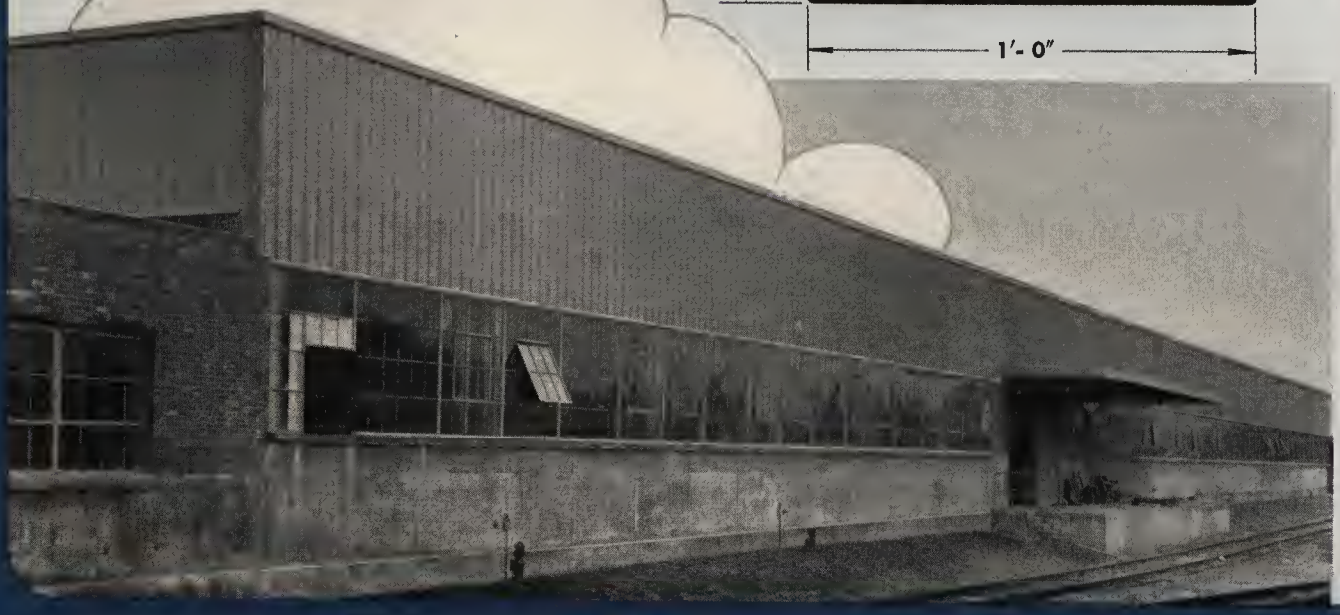
FOR FIRESAFE EXTERIOR WALLS of MODERN INDUSTRIAL and COMMERCIAL BUILDINGS

Mahon Prefabricated Insulated Wall Panel

Mahon Insulated Prefabricated Wall Panels are manufactured in 18 and 20 gauge galvanized steel or stainless steel. Twenty gauge material is used for lengths up to twenty feet unless otherwise specified. Panels are 1'-0" wide and 3⅜" thick with two inches of Fiberglas insulation packed between the outer and inner surface of metal. A minimum of through metal is employed in the form of a slotted channel welded in position which connects the two plates longitudinally. A slotted channel shaped end plate spacer is spot welded in position at each end of the panels.

ERECTION—Erection of Mahon Insulated Prefabricated Wall Panels is a simple matter and may progress rapidly, effecting considerable saving in labor. A ¼ inch weather seal provides the bond at sills, lintels, etc. Panels are then placed in position and welded to sill angle, intermediate girts and eave struts. Subsequent panels interlock into preceding panels and are likewise welded in place as erection progresses. Exterior interlocking ribs are securely locked together by means of a button punch lock to





THE R. C. MAHON COMPANY • Detroit 11, Michigan

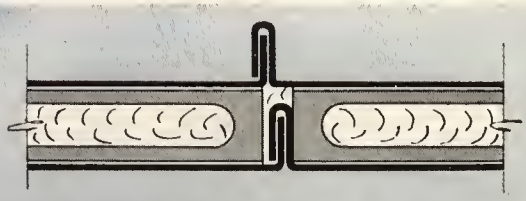
WESTERN SALES DIVISION, CHICAGO 4, ILLINOIS • Representatives in All Principal Cities

HEAT TRANSMISSION COEFFICIENT "U" = 0.25 . . . EQUIVALENT TO 18" BRICK WALL

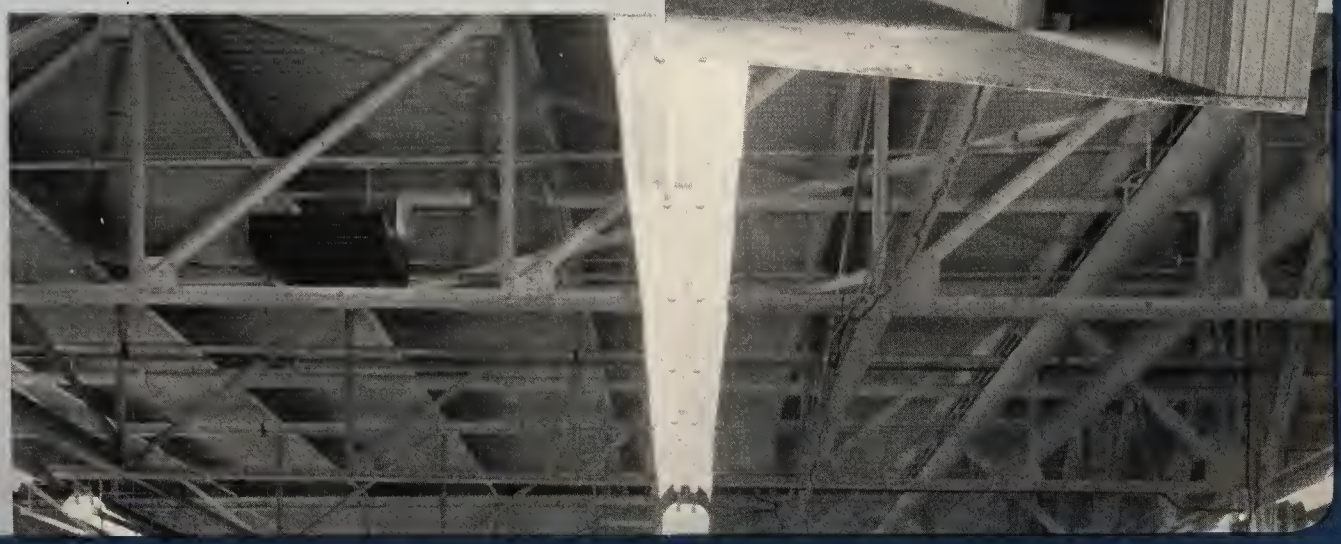
provide lateral continuity of the wall surface between supporting members. See details on page 5.

THERMAL PROPERTIES—In actual tests conducted by the Department of Mechanical Engineering, Case Institute of Technology, the Heat Transmission Coefficient "U" of this type of wall constructian was determined to be 0.25, or equivalent to that calculated for an 18 inch solid masanry wall.

ACCEPTANCE—Numerous industrial and commercial buildings of various types have been built with walls canstructed of these Insulated Prefabricated Wall Panels. The roofs, in each case, were canstructed of Mahon Steel Deck insulated and waterproofed. Many of the outstanding builders of the country have shown keen interest and enthusiasm for the simplicity of this praduct, its utility in modern construction, and the economy due to the ease and speed with which it may be erected. Note: For Mahon Noninsulated Steel Walls and Roofs, see Sweet's Mfrs' Index.



SECTION SHOWING PANELS INTERLOCKED



THE R. C. MAHON COMPANY • Detroit 11, Michigan
WESTERN SALES DIVISION, CHICAGO 4, ILLINOIS • Representatives in All Principal Cities

MAHON

INSULATED STEEL WALLS AND INSULATED PREFAB WALL PANELS

. . . Heat Transmission Coefficient "U" Equivalent to 18 Inch Solid Masonry Wall

THE R. C. MAHON COMPANY
DETROIT 11, MICHIGAN • REPRESENTATIVES IN ALL PRINCIPAL CITIES

NICHOLS

NEVER·STAIN

TRADE MARK

ALUMINUM BUILDING PRODUCTS

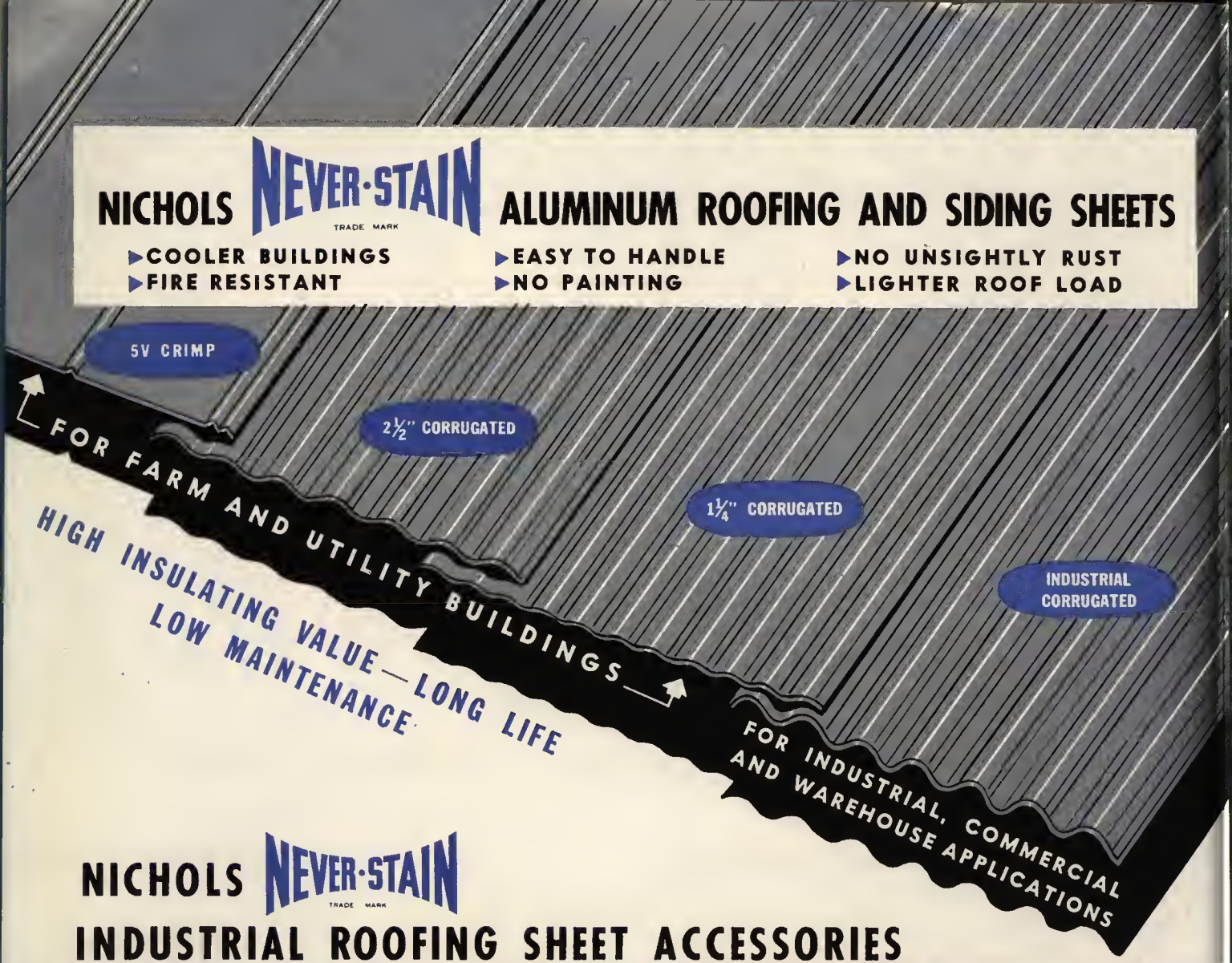
ALUMINUM IS NOT A SUBSTITUTE!

- aluminum roofing sheets
- aluminum roofing accessories
- aluminum nails

NICHOLS WIRE & ALUMINUM CO., Davenport, Iowa

NICHOLS NEVER-STAIN TRADE MARK ALUMINUM ROOFING AND SIDING SHEETS

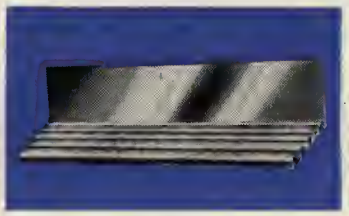
- ▶COOLER BUILDINGS
- ▶FIRE RESISTANT
- ▶EASY TO HANDLE
- ▶NO PAINTING
- ▶NO UNSIGHTLY RUST
- ▶LIGHTER ROOF LOAD



NICHOLS NEVER-STAIN TRADE MARK INDUSTRIAL ROOFING SHEET ACCESSORIES

CORRUGATED RIDGE ROLL
.032" gauga, 2.67" pitch to fit ⅞" depth corrugations. 19¼" girth, 2" roll. Covers one sheet width — 35". Length 42". Packed 25 piecas per carton.

PLAIN RIDGE ROLL
.032" gauge, 20" girth, 2" roll, 10 ft. lengths. Packad 15 pieces per carton.



SIDE WALL FLASHING
.032" gauga, 2.67" pitch to fit ⅞" dapth corrugations. 14" girth, 8 ft. lengths. Packed 15 piaces per carton.

END WALL FLASHING
.032" gauge, 2.67" pitch to fit ⅞" depth corrugations. 13-11/16" girth, 42" length. Packed 25 pieces per carton.

SHEET SPECIFICATIONS

STANDARD ROOFING AND SIDING SHEETS

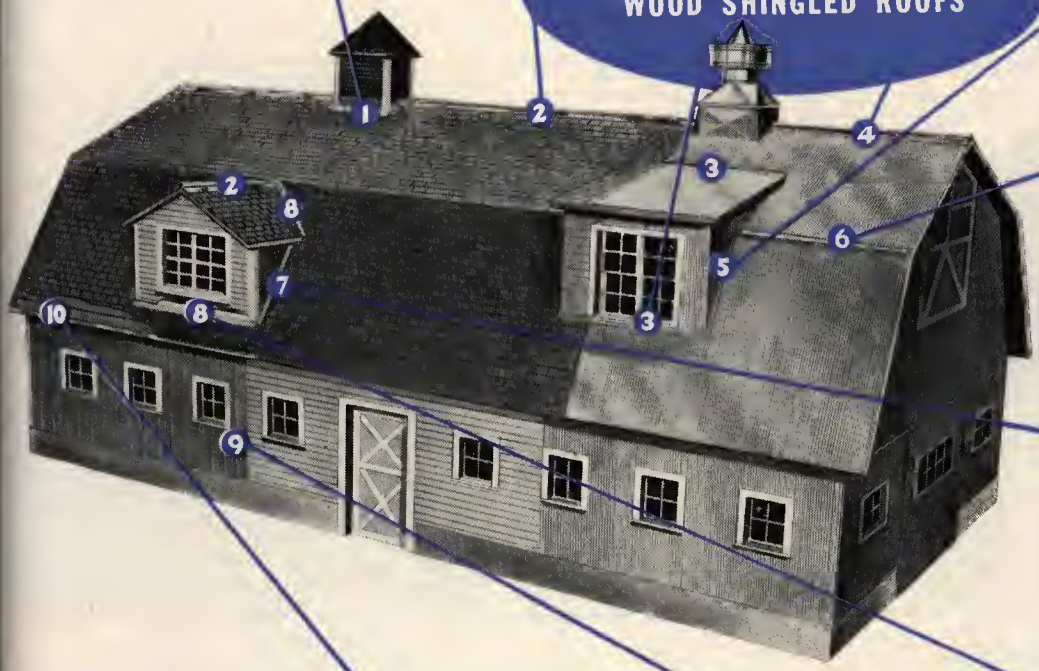
Aluminum Sheets are available in .019" and .024" gauga. Weight per square .019" gauga — 30 lbs. .024" gauga — 36 lbs. per squara. Sheets are 26" wida — to give 24" coverage. Available in 6, 7, 8, 9, 10, 11, and 12 ft. lengths. Sheets are packed 12 per bundle.

INDUSTRIAL CORRUGATED SHEETS

.032" gauge, 56 lbs. per square. Pitch 2.67", corrugation depth — ⅞" nominal. Width of roofing sheet — 35". Width of siding shaet — 33¾". Coverage for both roofing and siding sheets — 32". Available in 5, 6, 7, 8, 9, 10, 11 and 12 ft. lengths. Maximum uniform load par square ft. ranges from 20 lbs. for 7'-9" purlin spacing to 106 lbs. for 3'-6" purlin spacing.

NICHOLS NEVER-STAIN ALUMINUM ROOFING ACCESSORIES

FOR CORRUGATED AND 5V CRIMP ALUMINUM, COMPOSITION AND WOOD SHINGLED ROOFS

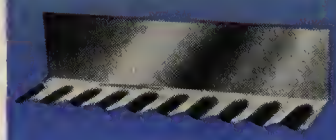


1. FLASHING SHINGLES

Available in 5" x 8" and 8" x 10" sizes. 5" x 8" size packed 500 pcs. par bundle. 8" x 10" size packed 250 pcs. par bundle.

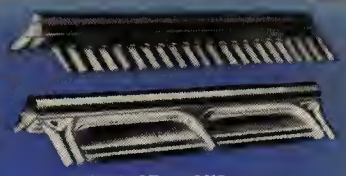
2. PLAIN RIDGE ROLL

1½" roll, 8" girth; 2" roll, 10" girth. Available in 10 ft. lengths, 150 ft. per carton. Also 14" girth in 5'-6" lengths, 55 ft. par carton.



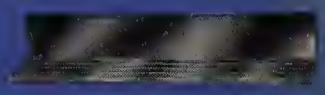
3. END WALL FLASHING

10" girth, 28" length. Covers one sheet width — 24". Available in 1¼" and 2½" corrugations to match roofing sheet. Packed 25 and 100 pcs. par carton.



4. CORRUGATED AND 5V CRIMP RIDGE ROLL

Made in 12" girth, 2" roll. Covers one sheet width — 24". Length 28" with either 1¼", 2½" or 5V corrugations to match roofing sheet. Packed 25 and 100 pieces per carton.

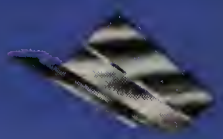


5. SIDE WALL FLASHING

10" girth, 5'-6" length. Available in 1¼" and 2½" corrugations to match roofing sheet. Packed 55 ft. per carton.

6. GAMBREL ROOF JOINT

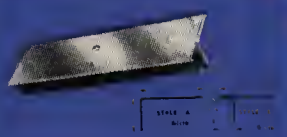
12" girth, 28" length. Covers one sheet width — 24". Available in 1¼" and 2½" corrugations to match roofing sheet. Packed 25 and 100 pieces per carton.



7. FORMED VALLEY

Style "A". Made in 14" girth, 10 ft. lengths. Packed 250 ft. per carton.

- NO RED RUST
- NO PAINTING
- EASY TO INSTALL



10. ROOF EDGE

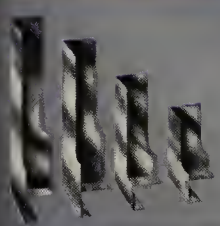
Made in five styles shown at right. 10 ft. lengths, packed 250 ft. par carton. Specify style wanted.

9. BARN BATTEN

Available in 8 and 10 ft. lengths in styles shown at right. Packed 1000 ft. per carton. Specify style and length wanted.

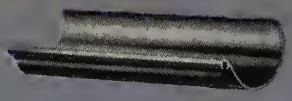
8. ROLL VALLEY

Made in 14", 20" and 28" widths. Ona continuous roll of 50 ft. per carton.



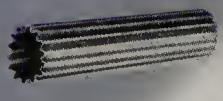
BUILDING CORNERS

Made in four sizes. 3½" (for 4" siding), 5½" (for 6" siding), 8" (for 8" siding) and 10" (for 10" siding). Packed 500 pieces per carton.



EAVES TROUGH

Made in 5" half round in 10 ft. lengths. .027" thick (No. 23 U. 5. Std. Ga.)



CONDUCTOR PIPE

Made in 3" diameter, plain or corrugated. Furnished in 10 ft. lengths, .020" thickness (No. 26 U.5. Std. Ga.)

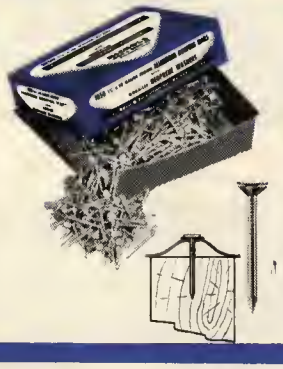
ABOVE ROOFING ACCESSORIES ARE NO. 26 U. S. STANDARD GAUGE—UNLESS OTHERWISE STATED

NICHOLS NEVER-STAIN ALUMINUM NAILS

LIFETIME NAILS — EASY TO DRIVE — WILL NOT PRODUCE UNSIGHTLY RED STAIN FROM RUST — ETCHED FOR GREATER HOLDING POWER — MORE NAILS PER POUND

Because everyone wants their buildings to last a long time, and since nails play a very important part in most every building, it is obvious that the best nail for the job should be used. Nichols NEVER-STAIN Aluminum Nails are just that. They are truly "lifetime" nails that hold better and longer. They cannot and will not discolor the surfaces on which they are applied. No unsightly red rust stains to ruin paint jobs and natural material colors.

Nichols NEVER-STAIN Aluminum Nails are etched from head to point to remove all grease and foreign matter. This feature gives them greater holding power and makes the exposed head surface an excellent painting bond. They are light in weight — reduce fatigue and speed up work. They are economical as there are almost triple the number of aluminum nails per pound as there are steel nails of the same size.



Here is the best, most efficient roofing nail and washer combination ever offered for use with metal roofing. Nichols NEVER-STAIN Aluminum Roofing Nails have a GORA-LEE Neoprene washer already assembled to nail head — ready to drive. These GORA-LEE Neoprene washers are weatherproof and resilient. They provide an absolutely tight seal between the nail head and roofing material (see drawing at left). They allow the roof to "breathe". Neoprene has withstood severe tests in service from 65° below to 250° above zero. Made in 1¾" and 2" lengths, 10 ga., 7/16" head. Packed 1050 nails per box with washers attached. 10 boxes per carton.

ALUMINUM WOOD SIDING NAILS

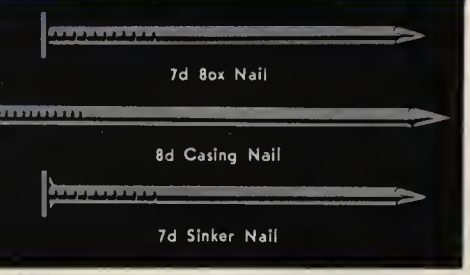
Made of a special hard aluminum (Federal Specification QQ-A-325) fully heat treated and cold worked, NICHOLS NEVER-STAIN Aluminum Nails are the most economical nails to use in applying wood siding.

It costs less than $10.00 over the cost of ordinary nails to use aluminum nails on the siding of an average 5-room house. Think of it! — no unsightly rust, and etched for greater holding power. Once applied they are there to stay.

A 50-lb. package of aluminum nails contains almost 50% more nails than a 100-lb. keg of the same size steel nails. Available in 50-lb. cartons in sizes 6d (2" long, 12 ga.), 7d (2¼" long, 12 ga.), and 8d (2½" long, 11 ga.) in either box, sinker or casing head types. 10d (2⅞" x 9½ ga.) in sinker and casing types.

A $10.00 added investment in Nichols NEVER-STAIN Aluminum Wood Siding Nails on this 5-room house would have saved a $200.00 repaint job.

ALUMINUM WOOD AND INSULATED SIDING NAILS

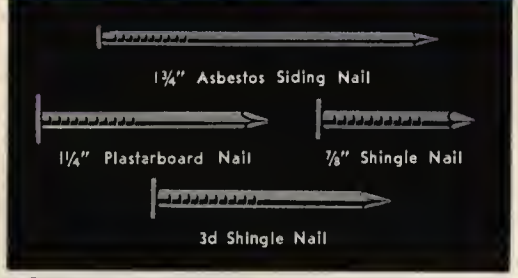


BOX NAILS — For use in applying wood and composition siding. No unsightly rust — will not stain. ETCHED finish for greater holding power and paint bond. Also used for boxing and crating.

CASING NAILS — For use in applying wood siding. No unsightly rust — will not stain paint. ETCHED finish for better holding power and paint bond. Not recommended for flooring or other hard woods.

SINKER NAILS — For use in applying wood and composition siding. Strong, reinforced countersunk head. No unsightly rust — will not stain paint. ETCHED finish for extra holding and paint bond.

ALUMINUM ASBESTOS SIDING, PLASTERBOARD & SHINGLE NAILS

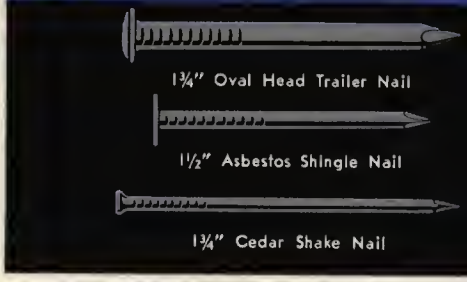


ASBESTOS SIDING NAILS — For use as a face nail in applying asbestos siding shingles. No unsightly rust — will not stain siding. Less expensive, yet have all the qualities of conventional asbestos siding nails. ETCHED finish for greater holding power.

PLASTERBOARD NAILS — For applying sheet rock, rock lath and other gypsum boards. Also wall board and other building boards. No unsightly rust — no brown spots on plaster. ETCHED finish for greater holding power and plaster bond on nail head. Do not use with metal lath.

SHINGLE NAILS — For use in applying wood shingles, aluminum barn batten and weather stripping. Also recommended for use in applying aluminum joist linings and general sheet metal work. No unsightly rust — will not stain surfaces. ETCHED finish for better paint bond and greater holding power.

ALUMINUM TRAILER, ASBESTOS SHINGLE & CEDAR SHAKE NAILS



OVAL HEAD TRAILER NAILS — These nails are the answer to aluminum trailer builders' demand for a rivet-like head, no unsightly rust or staining of surface. ETCHED finish provides better paint bond and holding power.

ASBESTOS SHINGLE NAILS — Used for applying slate and tile roofing. Also as a base nail for applying asbestos siding shingles. No unsightly rust — will not bleed or stain siding. ETCHED finish for greater holding power.

CEDAR SHAKE NAILS — For applying cedar shakes or wood shingles as siding; also interior insulation board. Small head makes nail hardly noticeable after application. No unsightly rust — will not bleed or stain siding. ETCHED finish for greater holding power.

SPECIFICATIONS AND PACKING OF NICHOLS *Never-Stain* ALUMINUM NAILS

Type of Nail	Length	Size Head	Gauge	Count per lb.	Type of Nail	Length	Size Head	Gauge	Count per lb.
Box Nail 7d	2¼"	17/64	12	513	Shingle Nail	⅞"	9/32	12½	1313
Casing Nail 8d	2½"	5/32	11	360	Shingle Nail	1¼"	9/32	12½	1009
Sinker Nail 7d	2⅛"	17/64	12	536	Oval Head Trailer Nail	1¾"	5/16	10	401
Asbestos Siding Nail	1¾"	3/16	13	877	Asbestos Shingle Nail	1½"	10/32	11½	659
Plasterboard Nail	1¼"	5/16	12½	939	Cedar Shake Nail	1¾"	5/32	13½	1010

NOTE: Many other types and sizes aluminum nails too numerous to list in the above table are also available. Write us about your needs. Packed 50 lbs. to a carton. Nail Counts above are approximate.

NICHOLS WIRE & ALUMINUM CO.
Mason City, Iowa — DAVENPORT, IOWA — Battle Creek, Mich.
Form No. 108-9-48-50M
Printed in U. S. A.

Overly

GOODWIN BATTEN TYPE

Lifetime

METAL ROOFS *and* COPING

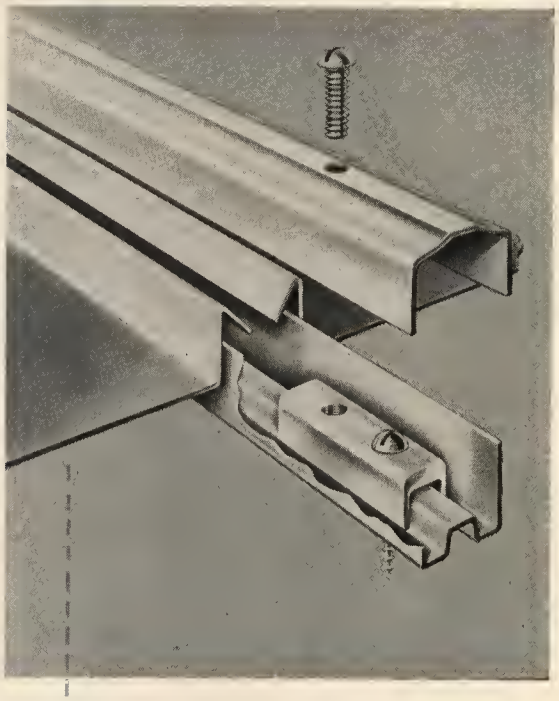
Mormon Tabernacle, Salt Lake City, Utah

Overly MANUFACTURING COMPANY

GENERAL OFFICES: GREENSBURG, PA.

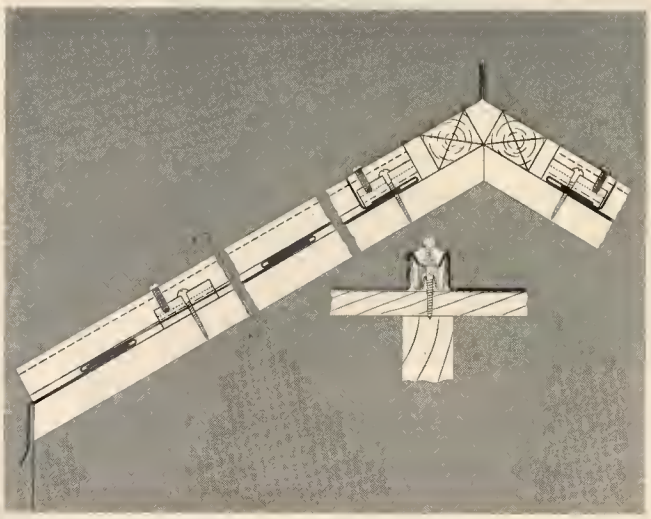
ALUMINUM . . . COPPER . . .

Overly lifetime metal roofs



Overly (Goodwin Batten Type) Lifetime Metal Roofs prefabricated design offers many advantages through longer life and lower costs of both erection and maintenance. Some of the outstanding features of this superior roofing are listed below.

Lightweight Design—in any corrosion resistant metal.
Watertight Joints without sealing.
No problems of Contraction or Expansion.
Can be applied over any type of deck.
Preformed in Overly's Shop.
Speedy erection.
Sharp angles, short arcs offer no design problem.
No maintenance or repairs.
Moderate cost per installation figured on life of roof.
Lighter weight relieves stress on roof supports.
Material costs can be reduced on new construction.
A small crew can quickly erect Overly Batten Type Roofing.
We erect anywhere.



The drawing at upper left clearly shows the compact, metal saving construction of the Overly *Goodwin Batten Type* Roofing. In this construction, the extruded lower batten is fastened to the deck with bolts or screws which go through the extruded batten clip and also through the slotted hole in the lower batten. These screws are spaced 20 inches on centers. This holds the lower batten firmly to the roof deck. The roofing field sheet is then hooked over the edges of the batten and the cap is then applied using ¼" x ⅞" machine screws into the batten clip.

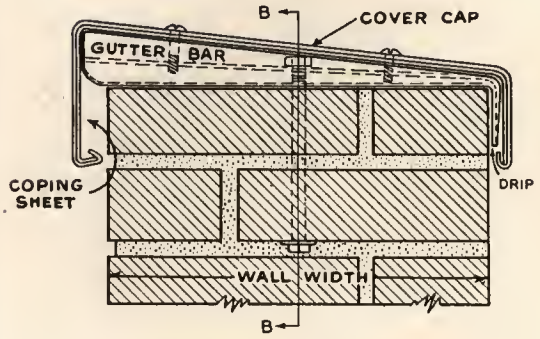
This allows for longitudinal expansion and the field sheets are formed to allow for cross expansion. The lower batten is extruded with a raised portion in the center having two parallel gutters the length of the batten. Batten ends are deformed so that each batten has 2½" lap for possible water drainage. No screws or nails are put through any field sheet. Each sheet has one clip fastened to the roof deck at each cross lock. This also allows free expansion. Exposed batten ends are capped.

The drawing at lower left shows a section through batten and method of anchoring batten to roof deck. Glass or fibre board insulation may be added over roof decking, if desired.

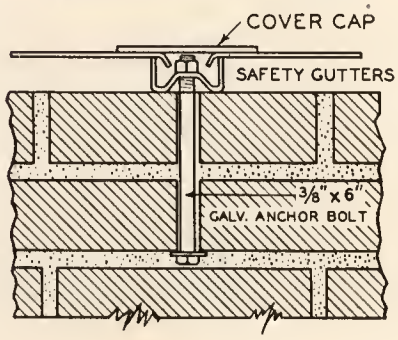
The Overly Manufacturing Company assumes full responsibility for the preparation and assembly of all material required for installation, but in order to submit costs we must have a complete specification sheet showing the exact measurements of the installation, types of roof deck, height of building, style of roof supports, etc.

Overly MANUFACTURING COMPANY

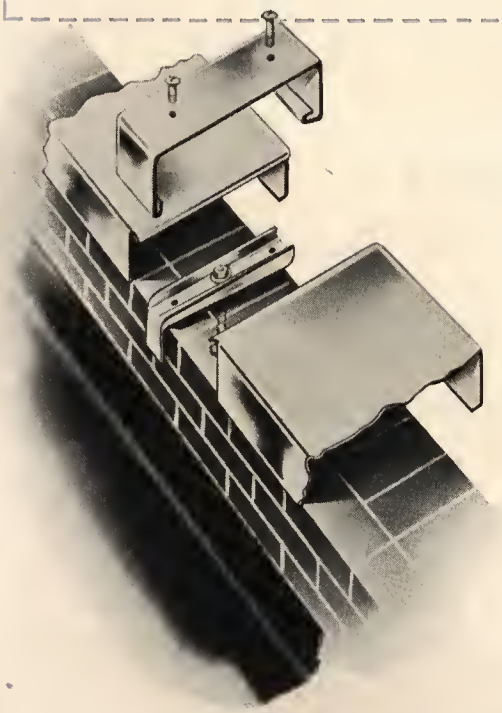
Overly lifetime metal coping



SECTION THRU WALL



SECTION B-B



PREFABRICATED CONSTRUCTION

Overly's Goodwin Lifetime Metal Coping is produced in a series of standard sizes and edgings that will fit most coping jobs. Four pieces of metal form the basic parts . . . all of them prefabricated at Overly Manufacturing Company and supplied in any wall thickness.

FIRM ANCHORING . . . QUICK ASSEMBLY

Anchor bolts are set in the wall when the top rows of bricks are laid . . . or holes may be drilled and bolts set if old coping is being replaced.

No special tools or on the job welding are required, and any necessary shortening is easily done right on the job.

WATERTIGHT JOINTS . . . AMPLE EXPANSION

The interlocking construction of Overly Metal Coping assures watertight joints . . . yet permits adequate movement to handle problems of expansion and contraction due to heat and cold. There's no buckling, no warping to throw the coping out of line . . . for once installed, Overly Coping is good for the life of the building.

MADE TO FIT ALL STANDARD WALLS

Any size of Overly's Goodwin Lifetime Metal Coping is available . . . standard sizes are for 12½" or 8½" walls.

NO THROUGH WALL OR CAP FLASHING NEEDED

Water can't seep beneath Overly Metal Coping—so no through-the-wall flashing is required. A study of the design will also show that the coping itself acts as a cap flashing . . . thus eliminating the extra metal usually necessary at this point.

BUILT-UP ROOFS EASILY REPLACED

When the two top screws are removed from each cover cap section, the entire coping may be lifted easily. New built-up roofing can be laid and the same coping put back in position.

MATERIAL

Coping is supplied in 16 B&S gauge aluminum, but special orders can be fabricated from any of the corrosion resistant metals.

Special sizes and designs, on the basic Overly principles, can be produced. Full specifications and plans should be submitted to the Overly Engineering Department for complete costs.

Overly (Goodwin) Lifetime Metal Coping has many advantages over other types of coping. Charts showing comparison of weight, bulk and cost follow.

HAS MUCH LESS WEIGHT

Comparative Coping Weights to Cover 100 ft. of Wall Top

Overly Coping (aluminum)	116 lbs.
Stone Coping	4760 lbs.
Terra Cotta	3315 lbs.

HAS MUCH LESS BULK

Comparative Storage Area
To Handle Coping for 100 ft. of Wall

Overly Coping	20" x 96" x 12" high
Stone Coping	14" x 48" x 75" high
Terra Cotta	14" x 48" x 75" high

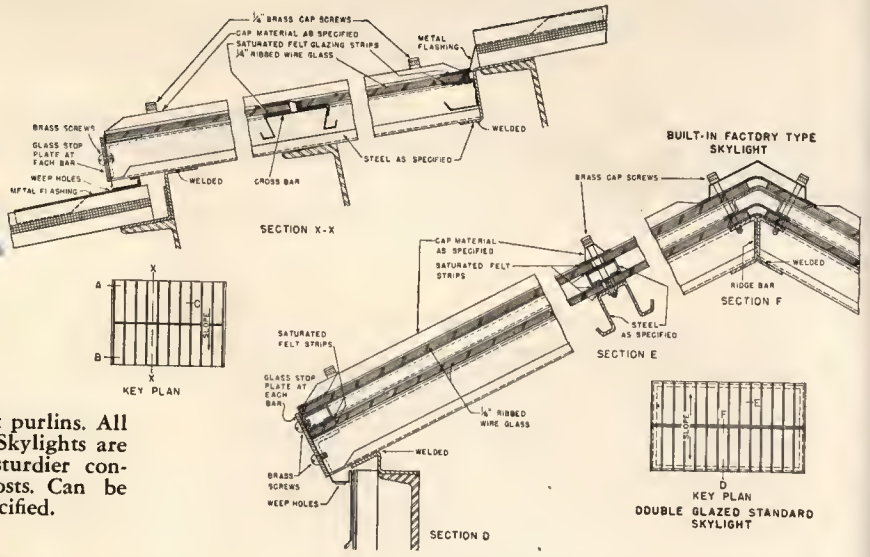
LOWER MATERIAL COSTS

Approximate Costs
Per Lineal foot of Wall Coping in place

Overly Metal Coping (aluminum)	$3.00
Stone Coping*	$5.80
Terra Cotta*	$6.50

*Includes copper through wall flashing to compare with original installation of our Combination Coping and Flashing.

PUTTYLESS SKYLIGHTS



Spans up to 15 feet without center support purlins. All parts easily accessible for future painting. Skylights are welded into panels at factory, assuring sturdier construction, simpler and lower erection costs. Can be made of steel or non-ferrous metals as specified.

Overly FACILITIES

Overly plants are modernly equipped to produce fine quality metal products at moderate cost—for a single unit, or on a production basis. Plant locations provide advantages in speedy delivery and savings in freight costs for projects located in the various sections of the country.

KALAMEIN PRODUCTS

Overly Kalamein doors and frames are made in all types and sizes. The standard Overly door has a wood core of thoroughly seasoned, kiln-dried white-pine, straight, true and free from loose or unsound knots, shakes, or other imperfections. The metal is die formed to insure uniformity and made to completely encase each member of the door.

COMBINATION DOOR FRAMES, JAMBS AND TRIM

Pressed steel frames and trim for use in schools, offices, hospitals, hotels, low-cost housing, apartments and public buildings are available in factory made units. Frame contours are machine formed and the corners are mitered and securely welded. All frames are mortised and reinforced to receive hardware.

TIN CLAD FIRE DOORS

Tin clad doors of two and three ply construction, with automatic or non-automatic releases, may be furnished to protect openings of all classifications.

WE ALSO PRODUCE-

KALAMEIN DUMBWAITER UNITS

FIRE DOOR HARDWARE

ANGLE AND CHANNEL FRAMES

UNDERWRITERS' LABORATORIES label service is available for all of the above-named products.

Overly GOODWIN TYPE

LIFETIME METAL ROOFS AND COPING

Revere Standard Copper for building construction

REVERE

architectural specifications for roofs, gutters, valleys, flashings, cornices and other sheet metal work . . .

Revere Copper and Brass Incorporated

1949

the advantages of Revere Standard Copper for protecting structures of all types

durability • Copper is one of the least chemically active of commonly used commercial metals. This gives it high resistance to corrosion from air, water and acid solutions. If properly applied it affords insurance against costly repairs to building interiors and against exterior maintenance expense. Copper is therefore preferable to rustable metal.

economy • If properly applied, under ordinary conditions, the first cost of copper is its only cost. Initially, it will be slightly more expensive than rustable metal, but such slight increase in cost is trifling when compared with the total cost of the building. Extreme care in the manufacture of Revere copper, combined with the inherent properties of the metal, make the average cost of maintenance and repairs very low over long periods of time.

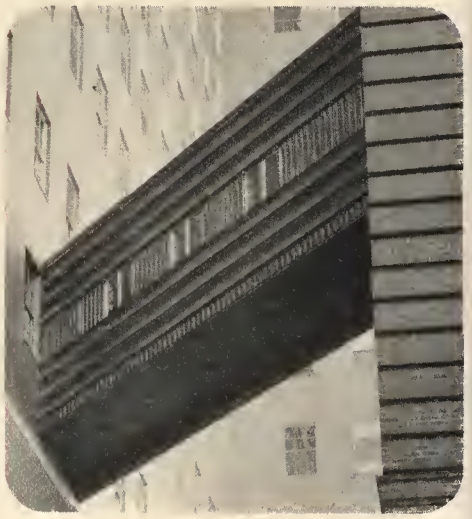
appearance • Nature acts as the decorator of copper. In time an attractive green coating known as "patina" is formed. This enhances the beauty of the structure and acts as a shield against deterioration. Copper gives dignity, character and beauty to any building.

ease of application • Copper is one of the most ductile of metals. It is easily worked, thus making it an ideal metal for roofing sheets. It can be formed without difficulty to the contour of domes or cornices, or can be bent to form various types of seams.

light weight • Copper's corrosion resistance makes it possible to use a relatively thin sheet. Copper makes one of the lightest of roofs — thereby reducing the weight of heavy supporting structures.

In the production of Revere Standard Copper, as well as in all Revere products, every precaution is taken to safeguard quality. Careful laboratory control and close inspection and testing during manufacture stand soundly behind the pre-eminent quality of Revere materials.

In this catalog will be found basic specifications for Revere Standard Sheet Copper for building construction.



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the development of engineered design:

to enable copper to withstand mechanical stresses

Copper, exposed to the elements, has proved through many decades to be the most enduring of all commonly used structural metals. Thus there has grown a belief that a copper covering, no matter how thin, should stand up unharmed by extreme thermal changes. Yet, in recent years, failures of sheet copper used for gutters, flashings and roofs have been reported. The metal is naturally blamed.

Revere is now able to report the real cause of such failures after comprehensive study of copper construction failures made in Revere Research Laboratories, Rome, N. Y. Copper gutters were used for testing purposes. The solution of gutter construction establishes fundamental principles for other sheet copper applications.

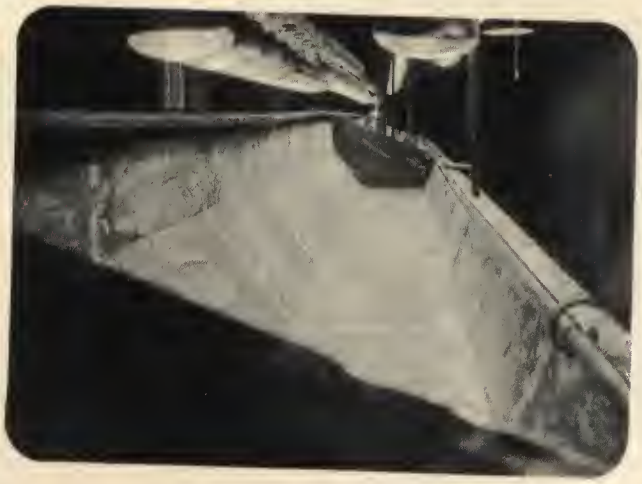
Gutters were installed under conditions simulating those to which actual installations are exposed. Tests showed, conclusively, that copper as a material is not at fault; rather that buckles are due to stresses set up by constant expansion and contraction of the metal -- in combination with insufficient columnar strength to absorb these stresses and hence prevent buckling.

The remedy is relatively simple. When sheet copper of proper shape and thickness, possessing sufficient rigidity, is specified, failures cease. At the right is a quick picture of the study made in Revere Research Laboratories. Full explanation is given in Revere's 96-page manual of sheet copper construction, "Copper and Common Sense." In this brochure, the how and why are made simple and clear with actual photographs, easy-to-use charts, dozens of full-page details. This manual has been sent to all recipients of Sweet's File Architectural. If you do not have a copy, Revere will be glad to send one to any architect, engineer or contractor upon request. See Revere addresses on back cover.

the tests

Replica models of both old and new gutter installations, 65 feet in length, were erected. These installations were submitted to hot and cold cycles with a temperature range of between 150 and 160 degrees. To provide radiant heat simulating that of the sun, 250-watt infra-red heating lamps were suspended over the entire length of the models. To provide cooling, the gutters were chilled with water from a nearby river. This water was "rained" on the copper surfaces. The complete cycle, taking 6 minutes, approximated a year's exposure to the weather. These accelerated tests made it possible to duplicate, in a relatively short time, conditions produced by nature over an extended period of years. In individual tests, the gauges of the copper ranged from 16 oz. soft copper (generally specified in the past for roofing and sheet metal construction) to 32 oz. cold rolled copper.

heating copper gutter to cause expansion



cooling the gutter to cause contraction

the results

The annual effects of nature are reproduced in a few minutes. Failure is witnessed step by step. The cause becomes obvious: lack of strength to withstand stresses set up by contraction and expansion. Because of the excessive distance between expansion joints, the copper section did not possess sufficient strength to transfer the movement to the expansion joint. The tests likewise disproved the belief that expansion joints alone can prevent buckling. It was found that three factors must be considered to obtain long life and trouble free service: (1) weight and temper of copper; (2) design and distribution of expansion joints; (3) efficiency of transverse joints.

For similar shape and gauge, cold rolled copper supports a greater compressive load than soft copper and provides increased columnar rigidity. Therefore, cold rolled copper can transfer accumulated movement much greater distances before pinching. This increased rigidity reduces the number of expansion joints required with soft copper.

effect of first heat on 16 oz. soft copper

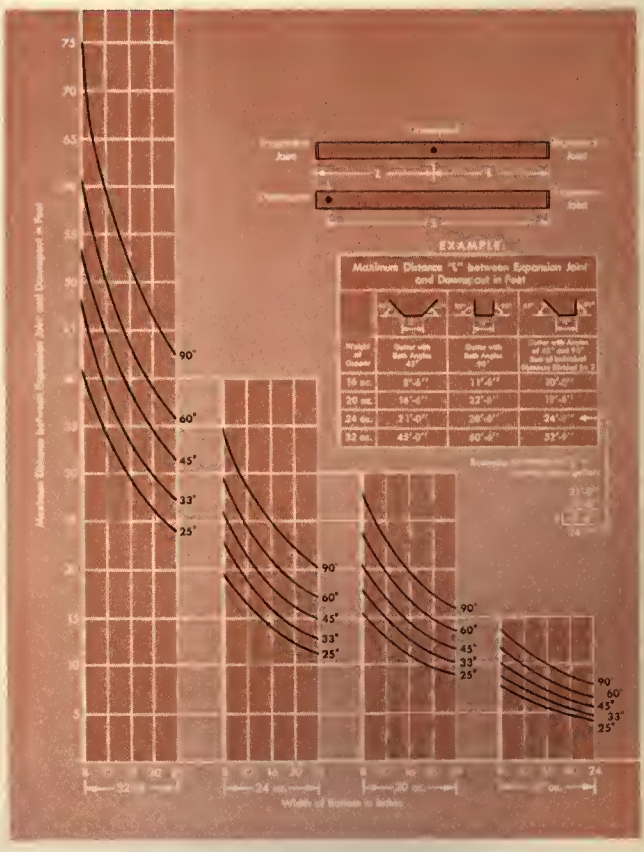
the same copper gutter after 12 cycles

the solution

With data acquired in these tests, Revere engineers evaluated, on strength testing machines, the ability of various shapes, gauges and tempers to resist compression — to produce columnar rigidity. It was clearly noted that cold rolled copper is more resistant than soft copper; that the heavier gauges increase rigidity. A formula for the safe critical load of a copper gutter section was developed.

Applying this formula to various gauges, angles, and gutter bottom dimensions, the chart below was prepared. To use this chart, the three factors involved in gutter design must be considered: width of bottom; angles of sides; effective restraint of gutter ends. It is apparent from this chart that the maximum safe distance between expansion joint and other fixed point is least with light gauge copper: greatest with heavy gauge copper. Full explanation is found in Revere's manual of sheet copper construction.

determination of gauge and expansion joint locations for various sizes and shapes of copper gutter linings.



specifications for copper roofing and sheet metal work

• On the following pages are given complete specifications for the principal construction uses of Revere Standard Copper. With each of these, the specifications on materials and workmanship (below) are to be used. Specifications for other construction applications of Revere Copper (such as fascia gravel stops, eave flashing, louvres) will be gladly furnished on request.

Detail drawings used on the following pages are taken from the new Revere brochure, "Copper and Common Sense", and are approximately one-quarter the size of those in the brochure.

materials

sheet copper • Shall be Revere Standard Copper for building construction, or equivalent. Where cold rolled copper is specified, it shall be cornice temper and where soft copper is specified, it shall be hot rolled or roofing temper. Any sheet metal shown on the drawings and not otherwise specified shall be 16 ounce cold rolled copper. The copper sheet shall be rolled from copper fulfilling the requirements of A.S.T.M. specification B 5. The finished sheets shall conform to A.S.T.M. specification B 152.

lead coating* • Where lead coated copper is specified or noted on drawings, the copper shall be coated on both sides with lead weighing not less than 7½ pounds per 100 square feet for each side. The lead coating shall be applied by the hot dip process. The weights of lead coated copper specified shall be the weights of the sheet copper exclusive of the lead coating. All lead coated copper shall have a finish not rougher than Leadtex 15.

tolerance in thickness • Sheet copper, exclusive of lead coating, shall be not less than the following thicknesses:

nominal weight, oz.	*nominal thickness, in.*	*minimum thickness, in.*
10	.0135	.012
16	.0216	.019
20	.0270	.0245
24	.0323	.030
32	.0431	.0405

nails used for fastening copper • Shall be hard copper barbed nails with large flat heads and with the barbs extending at least half the length of the nail. They shall be not smaller than No. 12 Stubs gauge (0.109 inch) and of sufficient length to penetrate the roof boarding not less than ⅞ inch.

screws, bolts and other accessories used for fastening copper • Shall be copper, bronze or brass.

expansion shields • Shall be lead, bronze or equal non-ferrous alloy.

cleats • Shall be 2 inches wide by about 3 inches long and shall be made of 16 ounce cold rolled copper, unless otherwise specified. One end shall be locked into the seam or into the folded edge of the copper sheets. The other end shall be nailed with two nails and folded back over the nail heads.

solder • Shall be composed of 50 per cent pig lead and 50 per cent block tin where used on plain copper. Where used on lead coated copper, the composition shall be 40 per cent lead and 60 per cent block tin.

flux • Muriatic acid killed with zinc, or an approved brand of soldering paste, shall be used as a flux. Acid shall be thoroughly washed off after soldering is completed.

elastic cement • Shall be a mixture of asphalt and asbestos fibres, fulfilling the requirements of Federal specification SS-C153.

roofing felt • shall be saturated with asphalt or pitch and shall weigh 14 to 15 pounds per 108 square feet.

rosin sized paper • Shall be a smooth, unsaturated building paper weighing approximately 6 pounds per 100 square feet.

workmanship

surfaces to be covered with sheet metal • Shall be free from defects of every description. All such surfaces shall be cleaned of dirt, rubbish and other foreign materials before the sheet metal work is started. All projecting nails shall be driven flush with the roof boarding.

tinning • The edges of all sheets of uncoated copper to be soldered shall be tinned on both sides for a width of not less than 1½ inches. No tinning is required on lead coated copper, but the lead in contact with solder shall be thoroughly wire brushed to produce a bright surface.

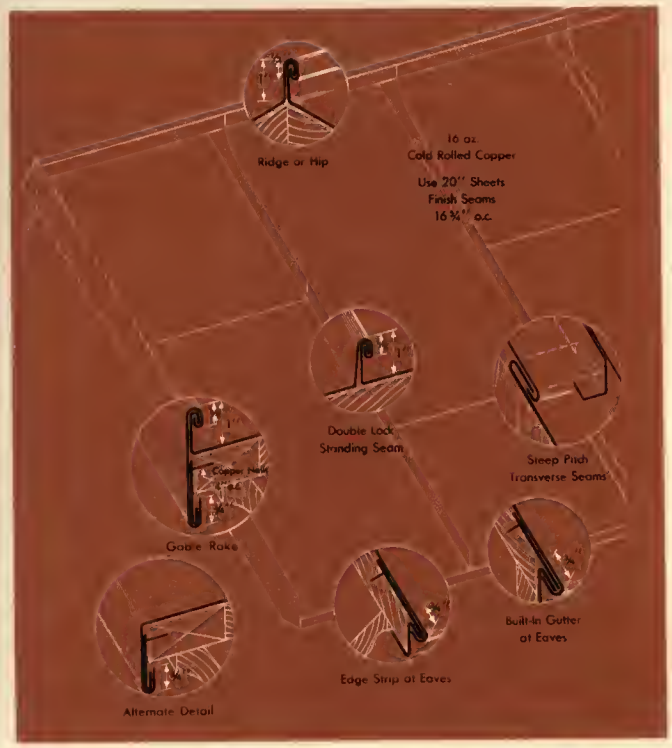
soldering • Shall be done slowly with well heated coppers, so as to thoroughly heat the sheet and completely sweat the solder through the full width of the seam. Ample solder shall be used and the seam shall show at least one full inch of evenly flowed solder. Seams on a slope steeper than 45 degrees shall be soldered a second time, rubbing the seams firmly with well heated coppers. When soldering lead coated copper, a liberal amount of flux shall be brushed into the seam.

soldering coppers • Soldering shall be done with heavy soldering coppers of blunt design, properly tinned before using. For flat seam work, gutters and for all lead coated copper, they shall weigh not less than 10 pounds per pair and for other work they shall weigh not less than 6 pounds per pair.

cross folded loose seams • Where copper is folded in one direction and then folded at right angles to the first fold, as for example the slip joints of base flashings, expansion joints and similar cross folded joints, the folded portion of the copper at the cross fold shall be slit and a patch of copper shall be soldered over the slit to avoid binding at the cross fold.

**Owing to the acute shortage of lead, it is advisable to consult the nearest Revere office before specifying lead coated copper (Revere Leadtex).*

standing seam roofing



paper • The roofing surfaces shall be covered with roofing felt and over this apply rosin sized paper. Each ply shall lap not less than 2 inches in the direction of flow and shall be nailed with copper nails driven through sheet copper washers not less than ½ inch square. Nails in the roofing felt shall be spaced not more than 3 inches apart on all lapped seams. Nails in the rosin sized paper shall be spaced 18 inches apart in both directions.

pan method • The pan method may be used on roofs with slopes of 6 inches to the foot or steeper. The roofing pans shall be formed of 20 x 48 inch 16 ounce cold rolled copper sheets bent up 1½ inches at one edge and 1¾ inches at the opposite edge with loose locked seams at the upper and lower edges. The cross seams shall be formed with a ¾ inch fold on the lower end of the upper pan and with a 2 inch fold on the upper end of the underlying pan. The transverse seams shall be slitted to avoid cross folded seams where they turn up at the standing seams. The slit in the fold at the lower end of the upper pan shall be 1 inch away from the standing seam. Edge of slit in the lower fold at the upper end of the lower pan shall be soldered to the vertical leg of the standing seam. Alternate pans shall begin at the eaves with half length sheets, thus staggering the transverse seams. Cleats shall be spaced 12 inches on centers on each standing seam and there shall be one cleat at the center of each transverse seam.

roll method • Cold rolled 16 ounce copper sheets, 20 x 48 inches in size, shall be double locked together to form a strip 20 inches wide by a length equal to the length of the roof slope. Standing seams shall be formed at the job with roofing tongs. Connections to gutter or eaves flashings shall be loose locked, unsoldered seams. Cross seams shall be staggered. Cleats shall be spaced 12 inches on centers on each standing seam.

standing seams • Shall finish 1 inch high, except on curved roof surfaces where they shall finish ½ inch high. The first fold shall be a single fold ¼ inch wide and the second fold shall be a double fold ½ inch wide. The locked portion of the standing seam shall be 5 plies in thickness. Lower ends on standing seams shall be folded over at an angle of about 45 degrees or turned down in a tapered fold.

Spacing of standing seams should be 16¾ or 20¾ inches to use 20 or 24 inch widths of copper sheets without waste. If 24 inch widths are used, the copper should be 20 ounce instead of 16 ounce, and the size of the copper sheets should be 24 x 48 inches instead of 20 x 48 inches.

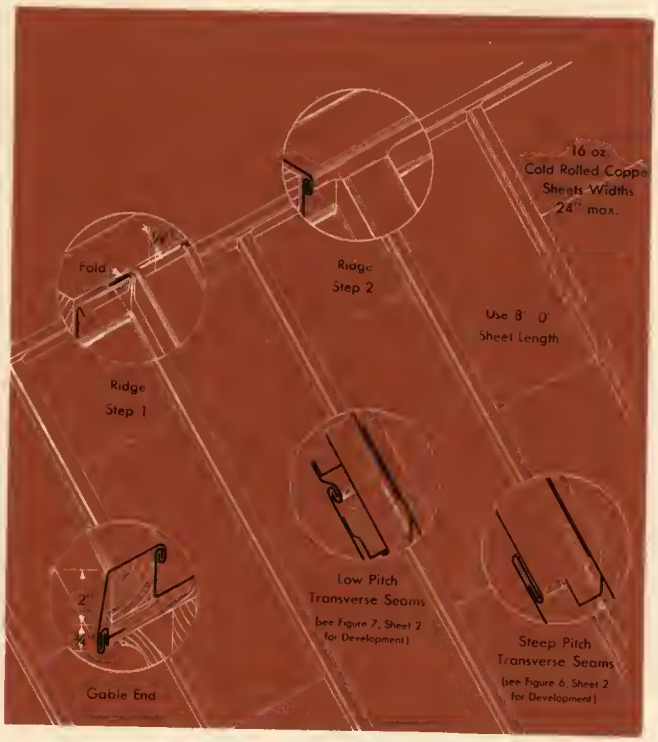
ridges and hips • Shall be provided with standing seams constructed as specified for the standing seams on the main roof.

valleys • Valley sheets shall be 16 ounce cold rolled copper not exceeding 8 feet in length. Each sheet shall lap the lower sheet not less than 6 inches in the direction of flow. The valley sheet shall extend under the roofing sheets on both sides not less than 6 inches. At the valley line adjacent to the lower edge of the roofing sheets, a ¾ inch double fold shall be made to engage a ¾ inch single fold at the lower ends of the roofing sheets. The outer edges of the valley sheets shall be folded ½ inch for cleating and in these folds copper cleats shall be installed on 18 inch centers.

eaves • At the eaves, where no gutters occur, each pan shall be hooked over a previously placed 24 ounce cold rolled copper edge strip. Edge strips shall be formed from sheets not more than 8 feet long and each length shall lap 1 inch over the preceding one. The edge strips shall be attached with copper nails spaced 4 inches apart. Where gutters occur at the eaves, the pans shall be loose locked into the gutter lock strip.

gable rakes • The pans against the gable rakes shall turn up vertically 1½ inches and shall be locked into a 16 ounce cold rolled copper fascia strip forming a standing seam 1 inch high. A continuous edge strip of 24 ounce cold rolled copper shall be attached to the edge of the roof boarding with copper nails spaced 4 inches apart. The lower edge of the fascia strip shall be hooked over the edge strip.

batten seam roofing



battens • Of size and spacing shown on the drawings, will be furnished and installed under the Carpentry section of the specifications.

Battens shall be 1¾ inches wide at the top, 1⅝ inches wide at the bottom and 1⅝ inches high except where otherwise shown or specified. Spacing should be 17½ or 21½ inches on centers to use 20 or 24 inch width copper sheets without waste. Battens shall be attached to concrete roof deck by through bolts or expansion bolts of the cinch type, and to gypsum decks by through bolts spaced not more than 3 feet 6 inches on centers.

paper • Before installation of battens by the carpenter, the roofer shall cover all surfaces with roofing felt laid with 2 inch laps and nailed with copper nails driven through sheet copper washers not less than ½ inch square. Rosin sized paper shall be applied over the roofing felt, between the battens, immediately preceding the application of the copper roofing.

copper pans, formed of 16 ounce cold rolled copper • Shall be installed between the wood battens. The pans shall be made from sheets 8 feet long, except the starting pans in alternate courses shall be 4 feet long at the eaves, thus staggering the transverse seams. Sides of the sheet shall turn up to the height of the battens plus ½ inch with the ½ inch folded to form a horizontal flange at top edge of the battens. *If pans are formed from sheets over 24 inches wide, 20 ounce cold rolled copper should be used instead of 16 ounce.*

for roof slopes of 6 inches or more to the foot • Cross seams shall be formed with a ¾ inch fold on the lower end of the upper pan and with a 2 inch fold on the upper end of the underlying pan. The folds in the cross seams shall be slitted at each corner of the pan to avoid a cross folded seam. The slit in the fold at the lower end of the upper pan shall be 1 inch away from the batten. Edge of slit in the fold at the upper end of the lower pan shall be soldered to the vertical leg of the pan.

for roof slopes of 3 to 6 inches to the foot • Cross seams shall be formed with a ¾ inch fold, in the direction of flow, in both the upper and lower pans. A 16 ounce copper lock strip 1½ inches wide shall be soldered to the underlying pan and shall turn up on each vertical leg of the pan to a height of 1¼ inches. The lower edge of the lock strip shall be 3 inches below the upper edge of the pan. The ¾ inch fold in the lower end of the upper pan shall hook into the lock strip.

cleats • Shall be spaced not more than 12 inches on centers on each vertical side of all battens and there shall be one cleat at the center of each transverse seam. Batten cleats must be nailed to the vertical sides of the battens.

cover strips, formed of 16 ounce cold rolled copper • Shall be applied over the battens. Edges of cover strips shall lock into the ½ inch horizontal flanges of the pans and shall then be malleted down against the vertical sides of the battens. Batten ends shall be covered with a copper cap folded and locked into tabs ½ inch long on the top and two vertical sides of the cap. The tabs shall be ½ inch extensions of the cover strip and vertical legs of pans.

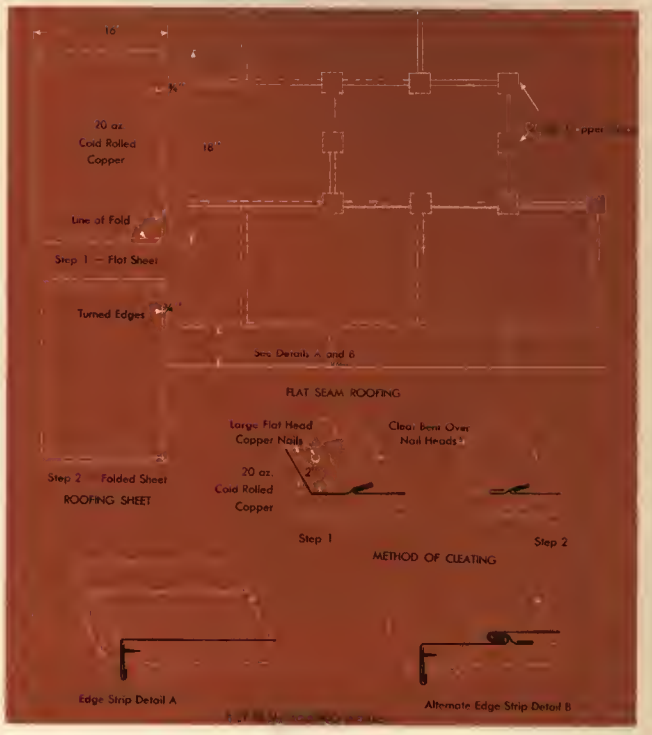
hips and ridges • Shall be covered with copper covered battens similar to the roof battens. At the intersection of the roof slope with the ridge or hip battens, the edges of the roof pans shall be turned up against the ridge or hip battens, and terminate in a ½ inch horizontal flange at the top of the battens. Cover strips, as specified for the roof battens, shall be installed over the top of the hip and ridge battens, shall be locked into the flanges of the pans and malleted down over the tops of the intersecting roof battens.

valleys • Valley sheets shall be 16 ounce cold rolled copper not exceeding 8 feet in length. Each sheet shall lap the lower sheet not less than 6 inches in the direction of the flow. The valley sheet should be of sufficient width so that a 1 inch double fold can be made along both edges at a distance from the center bend to provide the proper valley width. The edges of the copper roofing sheets hook into this fold to form a loose lock. The valley sheet shall extend under the roofing sheets on both sides not less than 6 inches and each edge shall be folded ½ inch for cleating. Copper cleats shall be installed in these folds on 24 inch centers. The under edge of the wood battens shall be notched to permit the folded edge of the valley sheet to pass under the batten.

eaves • At the eaves, where no gutters occur, each pan shall be hooked over a previously placed 24 ounce cold rolled copper edge strip. Edge strips shall be formed from sheets not more than 8 feet long and each length shall lap 1 inch over the preceding one. The edge strips shall be attached with copper nails spaced 4 inches apart. Where gutters occur at the eaves, the pans shall be loose locked into the gutter lock strip.

gable rakes • There shall be a roof batten set flush with the gable end. The cover strip on this batten shall lock into the roof pan, shall cover the top of the batten and extend down over the face of the batten where it shall be locked into a previously placed 24 ounce cold rolled copper edge strip as specified for edge strips at eaves.

flat seam roofing



paper • The roofing surfaces shall be covered with roofing felt with seams lapped 2 inches and nailed with copper nails driven through sheet copper washers not less than ½ inch square.

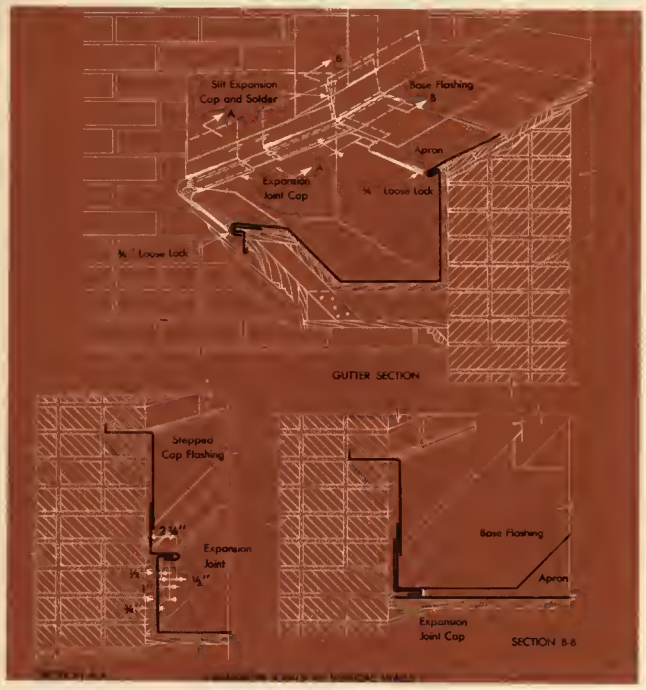
roofing sheets • Shall be 20 ounce cold rolled copper not larger than 16 x 18 inches, laid in courses parallel with the eaves and with the shorter dimension of the sheet at right angles to the course. Cross joints shall be staggered. Edges of sheet shall be pretinned and shall be bent to form ¾ inch locked and soldered seams. Corners shall be notched.

cleats • Shall be formed of 20 ounce cold rolled copper. There shall be two cleats on the longitudinal seam and two on the transverse seam of each pan.

flashings • At the intersection of roof surfaces with masonry walls, the roofing copper shall be turned up on said walls at least 6 inches to form base flashings. Thru-wall and cap flashings shall be provided at these locations.

eaves • At eaves, also at rakes which do not abut vertical surfaces, the roofing sheet shall hook over a previously placed continuous 24 ounce cold rolled copper edge strip. The edge strip shall be attached with nails spaced 4 inches apart.

soldering • All seams shall be thoroughly soldered, producing watertight joints.



paper • The supporting surfaces under copper gutter linings shall be covered with roofing felt and over this a ply of rosin sized building paper shall be installed.

gutter lining • Shall be formed of (32 ounce)* cold rolled sheets conforming closely to the profile of the gutter. There shall be no longitudinal seams and the cross seams shall be 36 inches apart if the sectional contour of the gutter is more than 36 inches. If the sectional contour is 36 inches or less, the gutter lining may be formed of copper sheets 8 feet in length. Gutter linings constructed of 16 to 20 ounce copper shall have the ends joined together by ¾ inch lock and soldered cross seams. For linings heavier than 20 ounces, the ends shall be joined together by 1½ inch lapped, riveted and soldered cross seams. Rivets shall be copper 3/16 inch in diameter with copper burrs and spaced not more than 2 inches on centers.

hold down • If the sectional contour of the gutter is more than 24 inches, the lining shall be held down by brass screws covered with 16 ounce copper cups soldered to the gutter lining. The screws shall be spaced not more than 36 inches apart longitudinally and not more than 12 inches apart transversely. Screws shall be No. 12 x ⅞ inch round head brass screws where used in wood, and similar screws with expansion shields where used in stone. A brass washer, 1/16 inch thick by 1¼ inches in diameter, shall be provided under each screw head. Hole in gutter lining shall be ¾ inch in diameter and the screw shall be at the center of this hole, except that the holes opposite each outlet tube shall be the same size as the screws to provide anchorage to the gutter lining at these locations.

connection to copper roofing • The roof edge of the gutter lining shall extend under the copper roofing not less than 6 inches and terminate in a folded edge where it shall be attached to roof boarding by copper cleats spaced 24 inches on centers. A continuous cold rolled copper lock strip, of same thickness as the gutter lining, shall be continuously soldered to the gutter lining at the lower ends of the copper roofing sheets and the roofing copper shall connect to this lock strip with a loose lock.

connection to slate, tile or shingle roofing • The roof edge of the gutter lining shall extend under the slate (tile or shingles) not less than 6 inches and terminate in a folded edge. A separate apron strip, not less than 6 inches wide and formed of 16 ounce cold rolled copper, shall be loose locked into the folded edge of the gutter lining. The upper edge of this apron shall be nailed to the roof boarding with copper nails spaced 4 inches apart. The roofing nails shall not pierce the gutter lining.

cant strip, formed of 16 ounce cold rolled copper • Shall be tack soldered to the gutter lining at intervals of 6 inches on each side of the cant strip. The cant strip shall be formed from a strip of copper 2 inches wide and with a raised V, or ridge, at the center ½ inch high.

outlet tubes • Shall be formed of 32 ounce cold rolled copper, with a lock and soldered longitudinal seam. The upper end of the tube shall be flanged, riveted and soldered to the gutter lining. The tube shall extend into the conductor at least 3 inches.

strainers • Shall be provided at all outlet tubes. They shall be wire basket type formed of no. 14 B & S gauge copper wire, or cast bronze, and shall fit snugly in the outlet tube.

expansion joints • Shall be provided midway between all outlet tubes, also where the ends of gutters abut masonry walls. The ends of each gutter section shall be closed with 16 ounce cold rolled copper, flanged, riveted and soldered to the gutter lining. The top edge of the gutter ends shall have a horizontal flange 1½ inches wide for connection to the expansion joint cover strip. The expansion joint shall have an open space 1 inch wide between adjacent gutter ends or between a gutter end and adjacent wall. A cover strip, formed of 16 ounce cold rolled copper, shall be provided over the expansion joint and shall be loose locked into the horizontal flanges at the top of the gutter ends. The loose lock joints shall provide for a movement of the gutter lining of ½ inch in either direction. Where the ends of the gutter abut a masonry wall, the cover strip shall extend under a

** The thickness of copper gutter lining depends upon the size and shape of the gutter, and the distance between downspouts and expansion points. This thickness should be determined from the chart shown on page 28 of the Revere manual of sheet copper construction by Revere (see page 4).*

counter flashing built into the masonry. Ends of cover strips shall terminate in a manner to provide watertight connections and to permit freedom of movement of the gutter lining.

gutters at high parapets • The outer edge of gutter linings shall extend under cap flashing not less than 3 inches. The roof edge of the gutter lining shall be at least 4 inches higher than the top of the parapet.

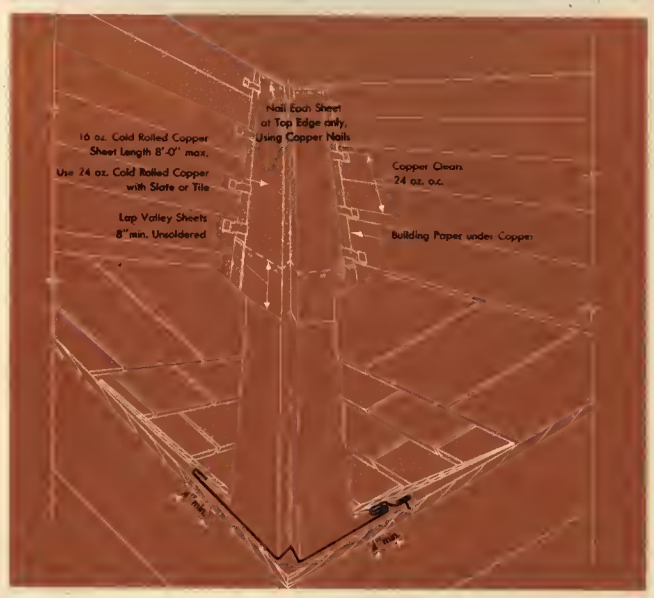
gutters at low parapets or cornices • The outer edge of the gutter linings shall extend over the top of cornice or low parapet and shall be folded into a previously placed 32 ounce cold rolled copper edge strip. The edge strip shall be attached to wood construction with copper nails spaced 4 inches apart, and to stone with brass screws and expansion shields spaced 12 inches apart. The roof edge of the gutter lining shall be not less than 4 inches higher than the outer edge of the gutter.

molded gutters, forming combination cornice and gutter • Shall conform to the size and design shown on the drawings. They shall be constructed of 20 ounce cold rolled, lead coated* copper and the outer edge shall be folded over a 1 x ¼ inch red brass, or copper, stiffening bar. The roof edge shall extend under slate, tile or shingles not less than 6 inches, or shall be loose locked to copper roofing sheets, and shall be attached to roof boarding with copper cleats spaced 12 inches on centers. Transverse braces, formed from 20 ounce cold rolled copper strips 2 inches wide bent to form a channel 1 inch wide and with ½ inch flanges, shall be attached to the top edges of the gutters and shall be spaced 36 inches on centers. There shall be no longitudinal joints. Cross joints shall be lapped 1½ inches, riveted with copper rivets spaced 2 inches apart and soldered. Provision shall be made for expansion and contraction as specified for Gutter Linings.

hung gutters, or eaves troughs • Shall be constructed of 16 ounce cold rolled, lead coated* copper in sections approximately 8 feet long, joined by tongue and grooved slip joints and supported by copper or brass hangers spaced not more than 36 inches apart. There shall be a rolled bead on each side of the gutter. Hangers shall be formed of 1 x ⅛ inch copper, or red brass, bars extending 6 inches on the roof boarding and attached to same with two countersunk brass screws. A hanger strip of 32 ounce cold rolled copper 1 inch wide shall be installed across the top of the gutter with ends folded into the bead on each side of the gutter and bolted to the brass hanger bar with a ⅜ inch brass stove bolt. The grooves of slip joints shall be filled with a thick mixture of white lead paste. End pieces, miters and outlets shall be provided where required, all of which shall be 16 ounce lead coated* copper, soldered and made watertight. Width of hung gutters shall be 5 inches unless otherwise shown or specified.

** Delete "lead-coated" if plain copper is desired.*

valleys



usual slopes • Valley flashings shall be cold rolled copper in lengths not exceeding 8 feet. Where used with wood or asphalt shingles, the copper shall weigh 16 ounces per square foot and where used with slate or tile roofing the copper shall weigh 24 ounces per square foot. The open portion of the valley shall be 5 inches wide at the top and shall increase in width ⅛ inch per foot toward the eaves. The copper shall extend not less than 4 inches under the shingles on each side of the valley and the edges shall be folded ½ inch for cleating. The sheets shall lap 6 inches in the direction of flow and the upper end of each sheet shall be nailed to the roof boarding. Edges shall be secured with copper cleats spaced 24 inches on centers.

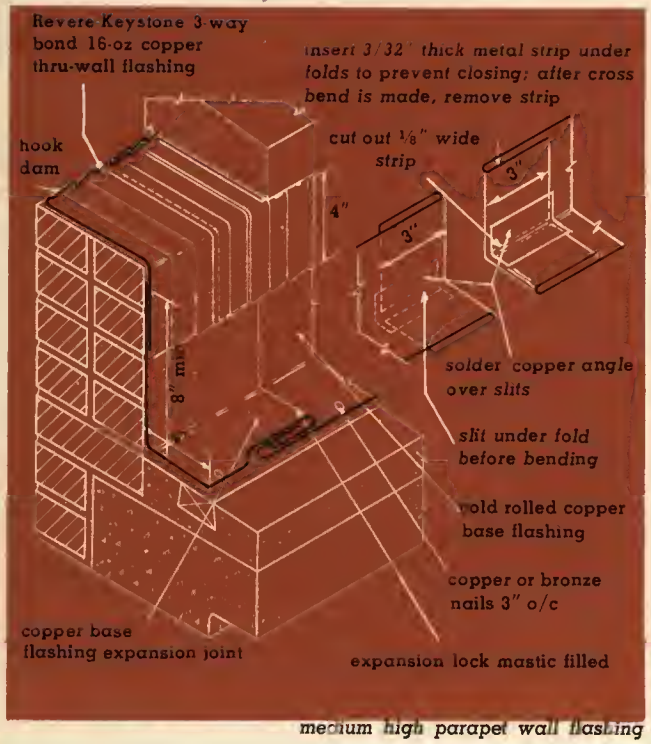
flat slopes • If the slope of the valley is less than 4¼ inches per foot, or if the intersecting roofs are on different slopes, a V joint 1 inch high shall be provided along the center line of the valley and the lap of the valley sheets shall be increased to 8 inches.

leaders

Leaders, or downspouts, shall be constructed of 16 ounce cold rolled, lead coated* copper in 8 or 10 foot lengths where possible. End joints shall telescope 1½ inches and longitudinal joints shall be locked. The work shall include all necessary elbows, offsets, etc., as required. Leaders shall be rectangular, corrugated and of dimensions shown.

leader heads • Shall be constructed of 16 ounce cold rolled, lead coated* copper of design and dimensions shown.

leader straps, spaced not more than 10 feet apart and formed of 16 ounce cold rolled, lead coated* copper • Shall be provided for attaching leaders to the building.



medium high parapet wall flashing

thru-wall flashing

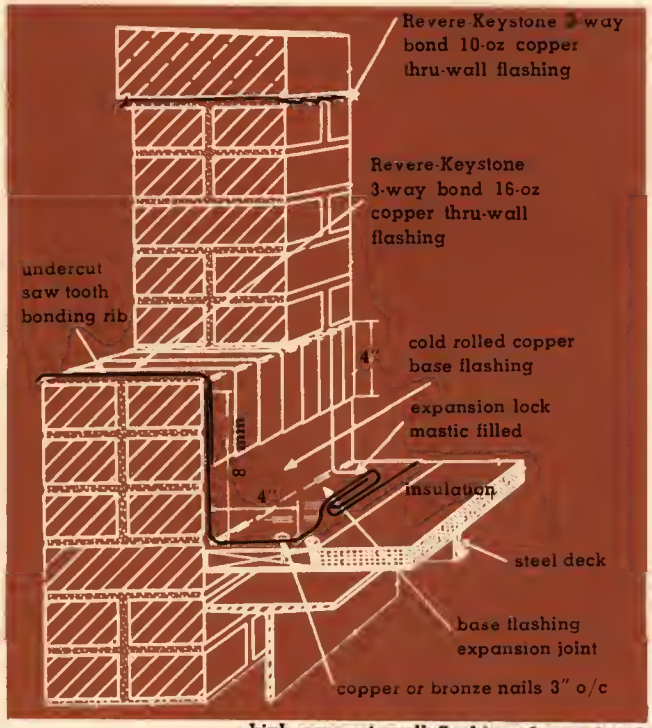
where required • Thru-wall flashing shall be installed in masonry walls or parapets to form cap flashing for connecting to the following items of copper work:

(a) base flashings on built-up roofs and on flat seam copper roofs
(b) built-in gutters
(c) copper cornices or copper covering over wood or stone cornices and belt courses

Thru-wall flashing shall also be installed directly under all stone copings.

design • Thru-wall flashing shall be formed from not less than 16 ounce soft copper. It shall be of width equal to the thickness of the wall plus 4 inches to form a cap flashing. The copper shall be embossed in a manner to provide a mechanical bond in any horizontal direction and to prevent lateral movement. The embossing shall be of a design that will prevent the formation of water pockets.

installation • Thru-wall flashing shall be laid in the wall by the mason with a thin layer of mortar above and below the flashing. The total thickness of the two layers of mortar and the flashing shall equal a regular mortar joint. Ends of thru-wall flashings shall lap in a manner to provide a watertight lap joint.

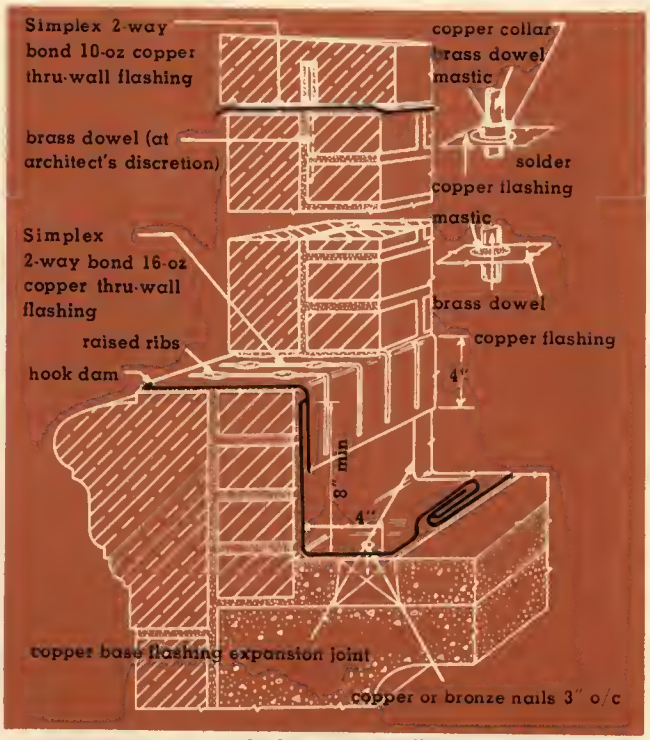


high parapet wall flashing; 3-way bond

counter, base and cap flashings

counter flashings • Shall be installed in masonry walls in conjunction with base flashings where it is impractical to use thru-wall flashings, such as chimneys, vent shafts, intersection of pitch roofs with vertical masonry surfaces, etc. Counter flashings shall be formed of 16 ounce soft copper in lengths of 8 feet, except where shorter lengths are required. The flashings shall extend into the masonry 4 inches and terminate with a ¼ inch folded edge. They shall extend down over and lap the base flashing at least 3 inches. At the intersection of pitched roofs with vertical masonry surfaces, the counter flashing shall be installed in steps, each step to overlap the underlying step by at least 3 inches.

base flashings • Shall be formed of 20 ounce cold rolled copper using sheets 8 feet long, except where shorter lengths are required. Base flashings on built-up roofing shall extend up on the walls to within 1 inch from the thru-wall or counter flashing, except where otherwise shown or specified, and out on the roof not less than 4 inches. Straight runs of base flashings shall be made up in units approximately 24 feet long. These units shall be connected together with a 3 inch loose lock slip joint filled with elastic cement.



high parapet wall flashing: 2-way bond

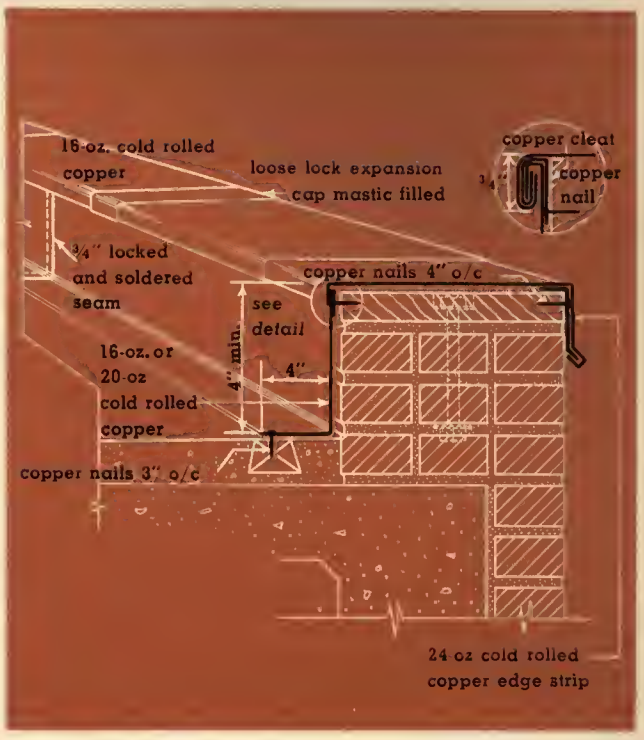
Straight runs less than 24 feet long shall have a similar slip joint at the center of the run. There shall also be a similar slip joint not more than 8 feet from any external or internal corner of the roof. Joints between slip joints shall be ¾ inch lock and soldered seams. All slip joints shall be made as heretofore specified under Cross Folded Loose Seams. The portion of the copper in contact with built-up roofing shall be given a coat of asphaltum paint before the flashing is set in place. The outer edge of the base flashing on built-up roofs shall be held in place by copper nails spaced 3 inches on centers.

Base flashings for shingles, slate, tile, etc., shall be built in with each course of the roofing material, shall lap over the underlying flashing at least 3 inches and shall extend up under the counter flashing at least 3 inches.

general • Parapets shall be covered with copper as shown on the drawings.

edge strip • A cold rolled copper edge strip shall be attached to each edge of the parapet if the base flashing does not extend to top of parapet. On low parapets where the base flashing extends to top of coping, the edge strip is required only on the outer

coping covering



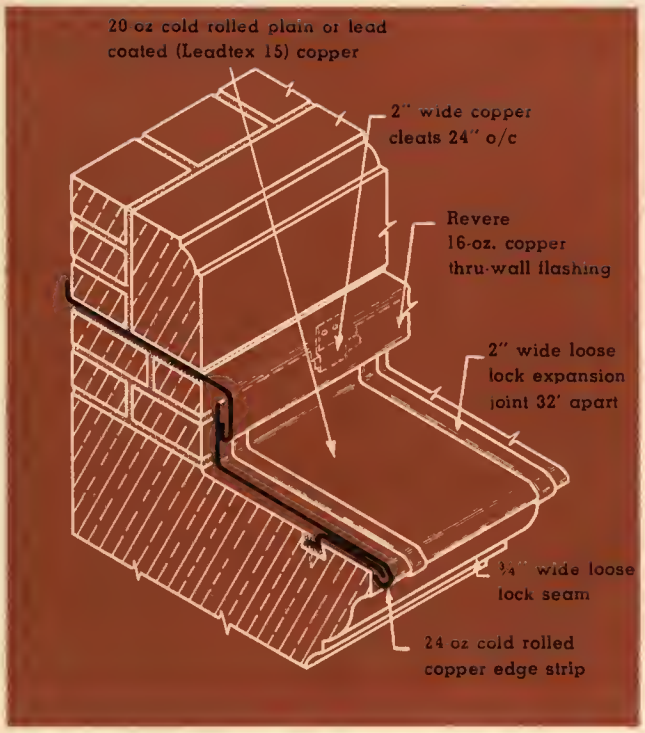
edge of the parapet. On wood covered copings the edge strip shall be 24 ounce copper and shall be attached with copper nails spaced 4 inches apart. On stone copings, the edge strip shall be 32 ounce copper and shall be fastened with brass screws in expansion shields spaced 12 inches on centers.

flat sheet coping covering • Shall be 16 ounce cold rolled copper with ¾ inch locked and soldered cross seams, except there shall be a loose lock expansion cap, filled with elastic cement, at intervals of not more than 32 feet. The front edge of the copper shall extend down over and lock into the edge strip.

standing seam coping covering • Shall be 16 ounce cold rolled copper with standing seams transverse with parapet and spaced about 34 inches on centers. Ends of standing seams shall be folded back at an angle of about 45 degrees. Front edge of copper shall extend down over and lock into edge strip.

rear edge of coping covering on low parapets, where base flashing extends to top of parapet • Shall be locked into base flashing with ¾ inch loose locked seam. Where base flashing does not extend to top of coping, rear edge of coping covering shall lock into edge strip as specified for the front edge.

cornice and belt course covering



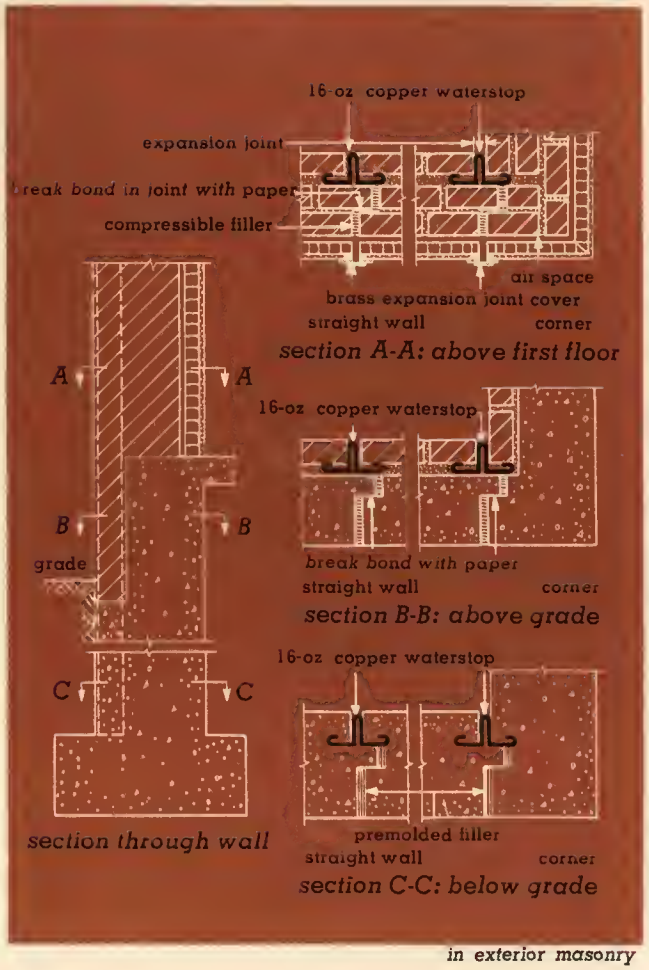
general • Top surface of projecting cornices and belt courses shall be covered with copper, locked into a previously placed cold rolled copper edge strip at outer edge of cornice or belt course and turned up on wall to form base flashing at rear edge. On wood cornices, edge strip shall be 24 ounce copper and shall be attached with copper nails spaced 4 inches apart. On stone cornices and belt courses, edge strip shall be 32 ounce copper, fastened with brass screws and expansion shields spaced 12 inches apart.

standing seam copper covering • Shall be 16 ounce cold rolled copper, with the standing seams transverse with the face of the building and spaced not more than 34 inches on centers. Front ends of the standing seams shall be folded back at an angle of about 45 degrees; rear ends shall be flattened and turned up on wall.

flat sheet copper covering • Shall be 20 ounce cold rolled copper with ¾ inch locked and soldered cross seams, except there shall be a 2 inch loose locked joint, filled with elastic cement, at intervals of not more than 32 feet and an additional 2 inch loose locked joint shall be placed not more than 8 feet from an external or internal corner. The 2 inch loose locked joint shall be as specified under Cross Folded Loose Seams.

thru-wall flashing • Shall be installed in the wall about 6 inches above the top of the cornice or belt course. Cap flashing shall be connected to the thru-wall flashing and extend down over the base flashing.

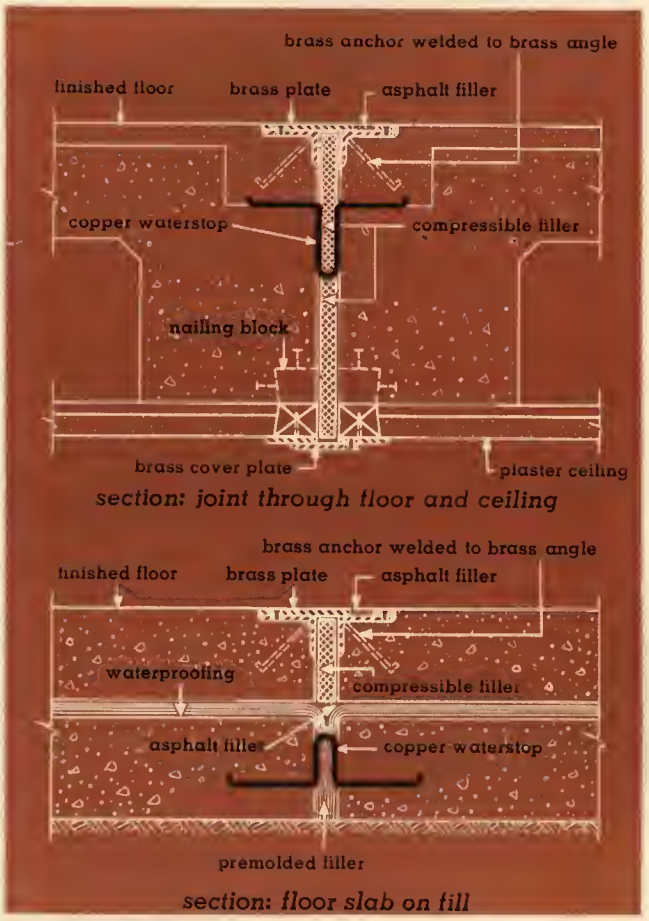
expansion joints



in exterior masonry

exterior walls • Copper expansion folds shall be installed in exterior masonry walls where indicated on the drawings. The units shall be formed of 16 ounce soft copper in 8 foot lengths and shall run continuously from top of footing to top of wall. Joints shall lap 4 inches in the direction of flow and where they occur below grade the joints shall be soldered. Each flange of the unit shall be built into the masonry not less than 4 inches. The units shall be folded from copper 16 inches wide and shall be in the form of a T with a 3¾ inch stem and with 4 inch wings. Each wing shall have a ¼ inch folded edge.

roof • Expansion joints shall be formed on flat roofs as indicated on the drawing. Roof curbs shall be covered with 20 ounce soft copper bent to form a V ridge at the center and shall be locked into top edge of base flashing which shall be provided with copper cleats spaced 12 inches on centers. The 20 ounce V ridge copper cover strip shall extend up on roof side of parapet to underside of coping, shall extend across top of coping with the V ridge in a coping joint and down on front side of parapet where it shall connect with the expansion fold in the exterior face of wall.



in slabs

The edges of the V cover where it extends up on the roof side of parapet and over top of parapet shall lock into 16 ounce soft copper cap strips approximately 6 inches wide. The outer edge of cap strips on roof side of parapet shall lock into 16 ounce soft copper lock strips which shall extend into the masonry 4 inches and terminate in a bent edge for anchorage.

Soldering shall be done where required to provide watertight joints.

floors • Where expansion joints occur in floors, a 16 ounce soft copper water stop shall be provided as shown. Copper shall extend into concrete 3 inches on each side of expansion joint and shall have a loop at joint to provide for expansion and contraction.

Joint at finished floor level shall be covered with a slip joint formed of brass angles and brass plates, and shall be anchored to concrete with ¼ inch brass anchors 2 inches long, brazed to brass angles and spaced 12 inches on centers. Angles and plates shall be of design and dimensions shown on drawings.*

interior walls and ceilings • Expansion joints on walls and ceilings shall be as detailed.

sizes and weights of Revere Standard Copper

SHEETS

Roofing Temper and Cornice Temper are available in the following sizes and weights:

size and weight	estimated lbs. per sheet	size and weight	estimated lbs. per sheet
14 oz. 24″ x 96″	14	**20 oz.** 24″ x 96″	20
30″ x 96″	17½	30″ x 96″	25
36″ x 96″	21	36″ x 96″	30
16 oz. 24″ x 96″*	16	**24 oz.** 24″ x 96″	24
30″ x 96″*	20	30″ x 96″	30
36″ x 96″*	24	36″ x 96″	36
18 oz. 24″ x 96″	18	**32 oz.** 24″ x 96″	32
30″ x 96″	22½	30″ x 96″	40
36″ x 96″	27	36″ x 96″	48

STRIP COPPER

(Roofing Temper) — all 20″ x 96″

weight	estimated lbs.	weight	estimated lbs.
14 oz.	11⅔	20 oz.	16⅔
16 oz.*	13⅓	24 oz.	20
18 oz.	15	32 oz.	26⅔

(Cornice Temper) — all 96″ long.

weight	width	estimated lbs.	weight	width	estimated lbs.
14 oz.	20″	11⅔	16 oz.	14″	9⅓
16 oz.	10″	6⅔	16 oz.	15″	10
16 oz.	12″	8	16 oz.*	20″	13⅓

The following weights all 20″ x 96″ long.

weight	estimated lbs.	weight	estimated lbs.
18 oz.	15	24 oz.	20
20 oz.	16⅔	32 oz.	26⅔

Parallel Edge Strip Copper (Stamped "Revere Standard 16 oz.") Cornice Temper furnished in exact lengths of 120″ to 124″ only; in widths from over 6″ to 19½″ inclusive.

ROLLS

Roofing Temper.

16 oz. width only — 6″, 7″, 8″, 10″, 12″, 14″, 16″, 18″, 20″.

10 oz. Roofing (one size only) 16″ x 72″ — 5 lbs. per sheet.

*also made 120″ long.

Revere Advisory Service — Architectural

To cooperate with architects, engineers and contractors in construction problems involving the application of its building products, Revere inaugurated its Technical Advisory Service — Architectural. This Service is staffed by competent men thoroughly conversant with copper and copper-base alloys and familiar with modern construction. Their function is to work directly with architect, engineer or contractor; to study problems relating to metals; and to submit to Revere Research Department major problems requiring scientific study. These advisors deal with concrete problems of immediate concern. For specific information about this Service, contact the Revere office in your locality.

Revere Copper and Brass Incorporated

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New York 17, N.Y., 230 Park Avenue

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Pittsburgh 19, Pa., Gulf Building	*Court 4342*
Providence 3, R. I., Industrial Trust Building	*Gaspee 8110*
St. Louis 8, Mo., 3908 Olive Street	*Newstead 0300*
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Walnut 1215	*AT 96*
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Fairfax 7932	
Franklin 1395	*IP 474*
Richmond 9314	*LA 71*
Marquette 8-1440	*MI 292*
Atlantic 3285	
Murray Hill 9-6800	*NY 1-1222*
BAldwin 9-8720	*PH 206*
Court 4342	*PG 572*
Gaspee 8110	
Newstead 0300	*SL 191*
Sutter 1-0282	*SF 561*
Main 8372	

September 15, 1948

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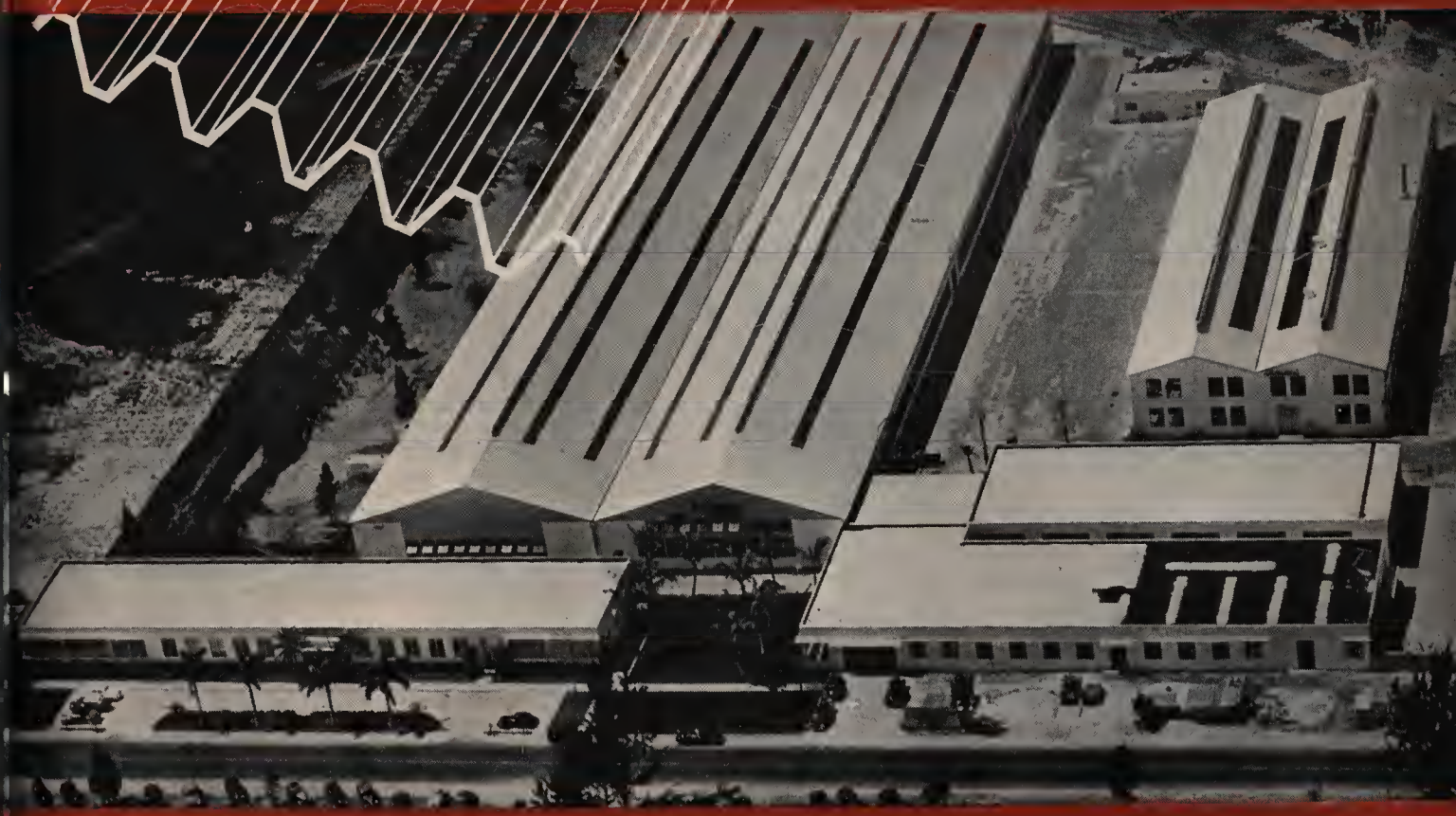
ROBERTSON

GALBESTOS

THE ULTIMATE IN PROTECTED METALS

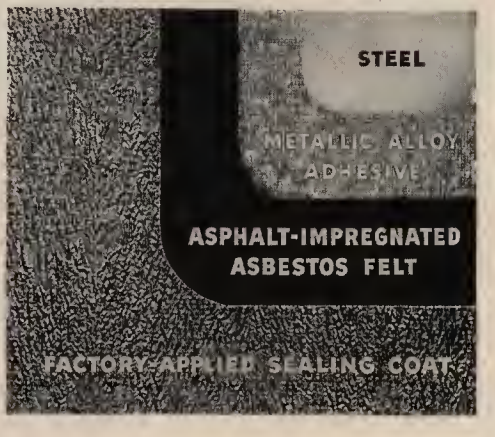
. . . FOR ROOFS

FOR SIDEWALLS



H. H. ROBERTSON COMPANY, PITTSBURGH, PA.

Galbestos— THE IMPROVED PROTECTED



GALBESTOS is the ultimate in protected metal . . . anather milestane by the originators of world-renowned RPM. The secret — the unbreakable Galbestos Grip — lies in the Robertsan methad of fusing asbestos to sheet metal by means of a zinc alloy. The asbestos becomes imbedded in the metal . . . an integral part of the sheet. Ta understand the Galbestos Grip, lock your fingers like the picture and tug. You will then be gripping like the protecting fibres of asbestos interlock with the metal core itself.

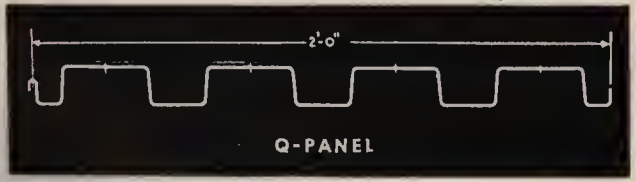
Even when the asbestos felt is later impregnated with asphalt and the sheet weatherproofed, the grip is so inseparable that Galbestos can be rolled, sheared, bent, crimped and riveted like unprotected metal. It can be

GALBESTOS CORRUGATION STYLES

Standard Carrugated Roofing Sheets—Have 12½ carrugatians (af 2⅝ inch naminal width) are appraximately 20% wider than cammercial type af carrugated steel sheeting, praviding a greater effective cavering area. Sheets are 33 inches wide with a standard side lap af 1½ carrugatians, praviding an avrage caverage af 29¼ inch. Raafing sheets are available up ta 12 feet in length, and are laid with a minimum end lap af 6 inches.

V-Beam Sheets—A special deep-carrugatian, lang span sheet. This farm pravides the structural effect af a series af beams, and this affers exceptianal strength. Carrugatians are 5.3 inches wide, 1¾ inches deep. Sheet is 29 inches wide and lays 26¼ inches ta weather. Supplied with a minimum end lap af 6 inches far raafing and 4 inches far siding.

Mansard Sheet—Far use where its particular architectural effect is desired. Galbestas Mansard Sheets far raafing and siding have 6 beads, are 33 inches wide with a side lap af ane bead, pravide an average caverage af 30 inches. Available in lengths up ta 12 feet. Supplied with a minimum end lap af 6 inches far raafing and 4 inches far siding.



Q-Panel (Sectian 3) Units—Have 1½" deep flutings an 6" centers. They are fabricated in 2' widths in lengths up ta 12 feet. Interlacking male and female lips pravide waterpraaf jaints when caulked. When used as a raaf deck, insulatian and waterpraafing may be used if desired. Waterproof auter caating is nat used on this farm af Galbestas.

warked an ardinary sheet metal shap equipment. Under a blaw tarch it will merely char. It will nat shatter under hase streams during a fire. It is safe to walk an. It will withstand acid and alkali fumes.

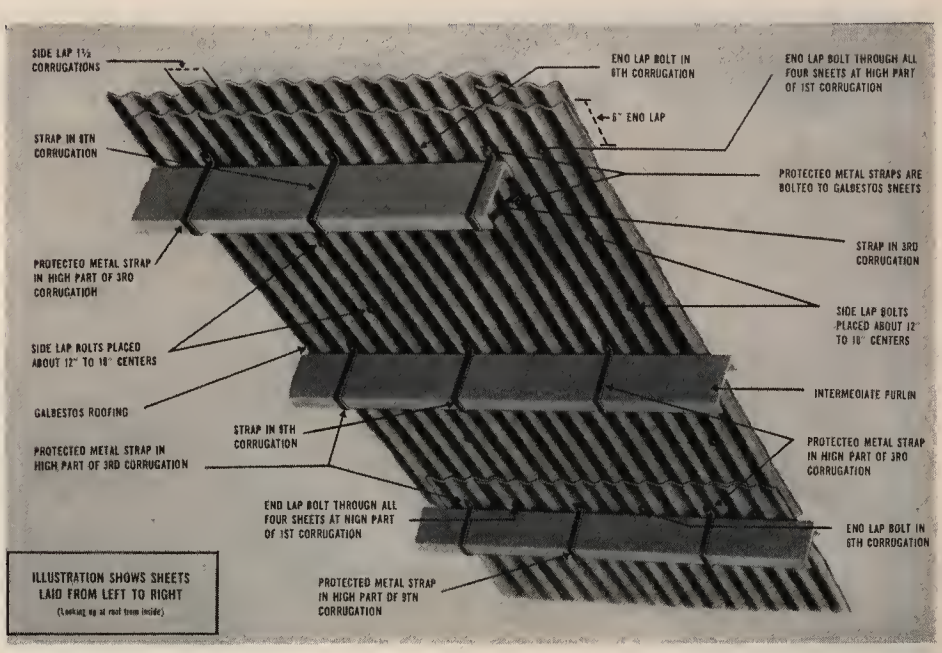
Galbestas has been tested under every weather and industrial canditian, in the crucible conditians af war as well as thase af peace. Galbestas endures the mast severe weather conditians, carrasive fumes, excessive heat as na pratected metal has before.

WHAT HAS GONE BEFORE

The H. H. Rabertsan Campany is the ariginatar and manufacturer af asbestas pratected metal. As Rabertson Pratected Metal (RPM) this material was placed an the market in 1905, and faund internatianal acceptance. There fallowed continuous research and the observatian af the material in service. This develapment af the Rabertsan system af metal pratectian, whereby asphalt and asbestas caatings are permanently banded to steel, invalved practically a new and undiscovered technalagy in the pracessing and asphaltic materials. Now, the same Rabertson engineers wha praduced the warld-famaus RPM affer Galbestos, a prewar develapment far pastwar construction.

ENGINEERING DATA

The methad af securing sheets to the frame wark af buildings is based an the use af pratected metal strap fastenings, farmed to fit araund purlins and girts, and securely fastened ta the sheets by specially designed sherardized cup head balts. Shawn is the standard location af straps, sidelap balts, and endlap balts. The number af fasteners can be varied.



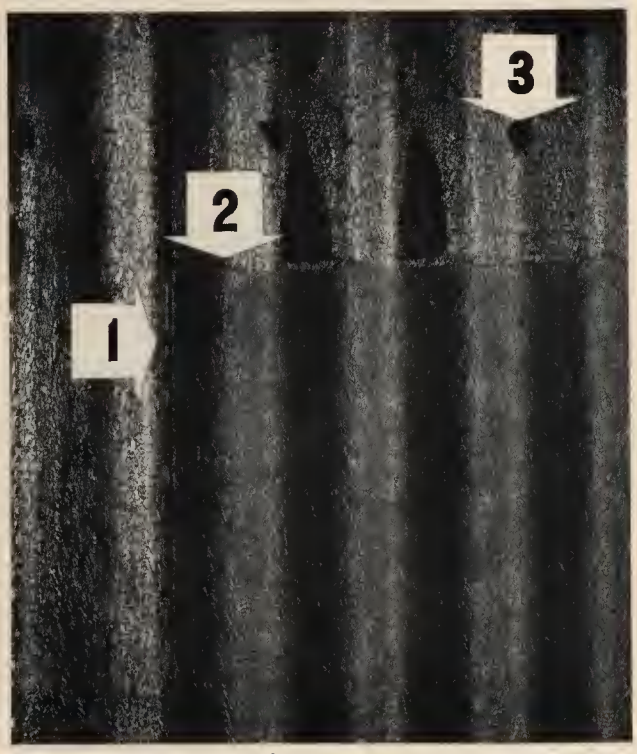
recommended purlin spacing . . .

Note: Where the Roof slope is less than 3 in. in 12 in. all side and end laps should be laid in ROBERTSON CEMENT. Corrugated Sheets are not recommended where slope is less than 2 in. in 12 in. Mansard Sheets are not recommended for slopes under 4 in. in 12 in.	GA.	CORRUGATED OR MANSARD			V-BEAM	Q-UNIT
		ROOFING Slopes over 4" in 12"	ROOFING Slopes under 4" in 12"	SIDING		
	24	4'9"	. . .	4'10"	7'0"	. . .
	22	5'9"	4'9"	5'10"	8'0"	7'0"
	20	6'6"	5'9"	6'8"	8'9"	7'6"
	18	7'6"	6'6"	7'8"	10'0"	8'6"

Available finishes

Galbestas is available in a variety af finishes ta meet varying requirements. The black surface is usually preferred far general industrial canditions, but the standard sheet alsa comes in maraan. An aluminum paint finish is again available.

Galbestos- FOR STANDARD BUILDINGS without insulation . . .



GALBESTOS possesses all the necessary qualifications for an industrial building covering material, *including altogether adequate insulating qualities.* This is because Galbestos sheets have a relatively low conductivity factor of 0.85 B.t.u., and because the construction, preformed flashings, and corrugation closers assure tight joints.

FIRE RESISTIVE — tested and classified by Underwriters' Laboratories and Factory Mutuals Laboratories.

Galbestos steel core sheet remains at a low temperature under fire exposure, minimizing buckling and warping. The amount of combustible material present in the coatings is so small that a flame cannot be sustained. Coatings will char under prolonged fire exposure, but the asbestos felt will be left intact, tight to the steel.

◀ A section of a typical roof sheet, removed for laboratory analysis after 17 years of service. Arrows point out (1) side lap seal, (2) end lap seal and (3) bolt hole seal. Note the new appearance where the laps occurred, complete absence of corrosion at bolt holes, and areas where part of coatings pulled away when sheets were separated . . . indicating an extremely tight job.

Galbestos- FOR AIR-CONDITIONED BUILDINGS with insulation . . .

This construction photograph shows how the wall panels were installed with the flat plate out for pilasters and decorative effect.

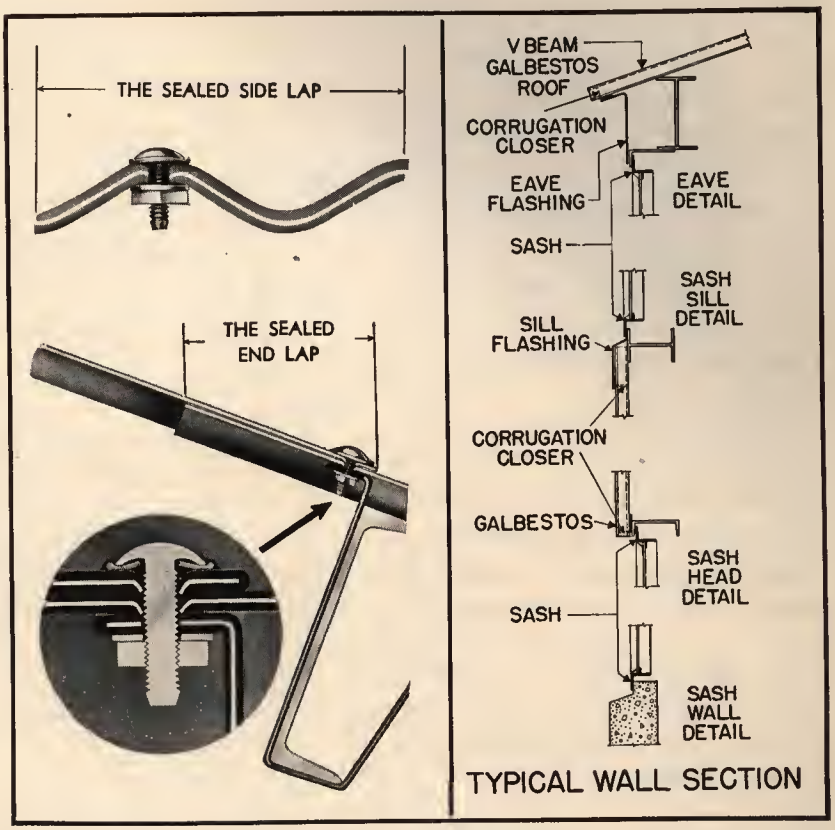
The completed building after it was painted. Note the attractive architectural effect of contrasting wall surfaces — fluted and flat.

SEALED CONSTRUCTION

IN the sectional details shown here nate particularly the absolutely tight, sealed end and side laps which provide a leak-proof assembly.

When Galbestos sheets are installed as roofing and siding, they seal together permanently at the over-lapping points because: (1) these sheets, with their core of steel, are not rigid but slightly flexible, each one conforming perfectly with the corrugations of its neighbor and adapting itself to any deflections or movements in the supporting framework; and (2) the auter or sealing coat remains semi-adhesive throughout the life of the material.

Thus a Galbestos roof or sidewall is a solid integral barrier to the infiltration or accumulation of moisture, chemicals and other deteriarating influences.

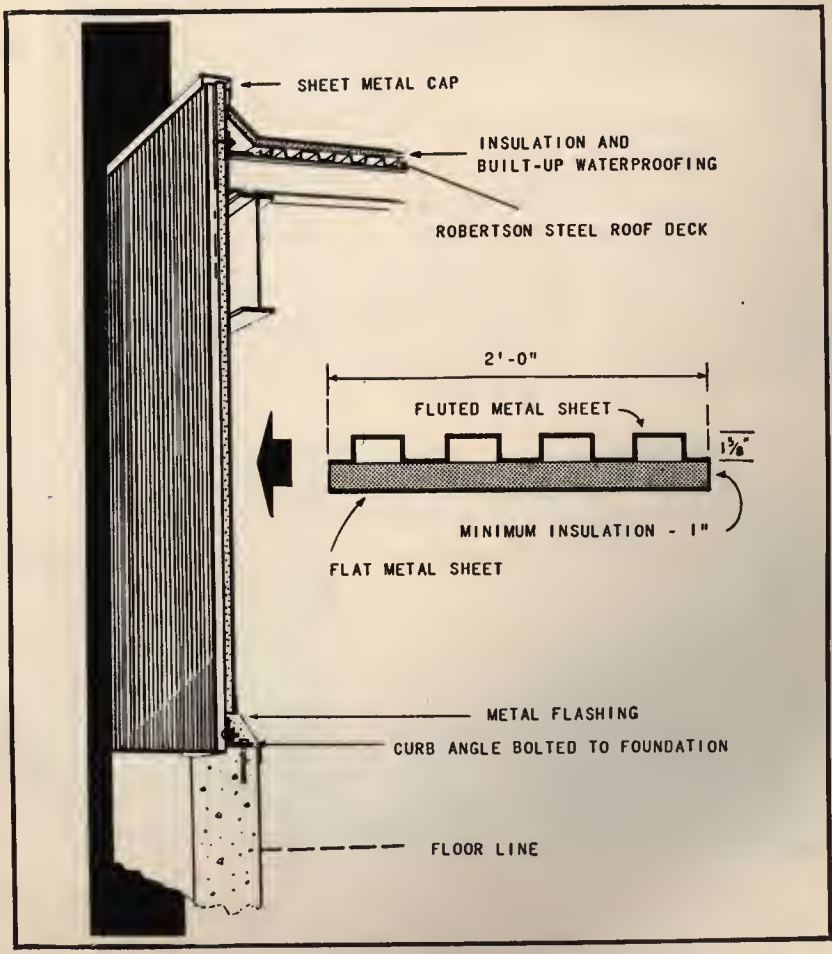


THE modern use of steel and glass, in many combinations, to make the most of unbroken but interesting planes af wall and glass surfaces is readily met by insulated Galbestos wall panels.

The insulating value of the panel is thoroughly protected by the steel plate cavering the insulation board and by joints that are tight at windaws and junction paints with other materials. This prevents the infiltration of air and furnishes a 100% moisture barrier both from inside and outside the building.

Thus the insulating material suffers na damage from vapar pressure and condensation; also air conditioning may be used with maximum efficiency.

These panels can be used with either the flat or fluted surface expased. This offers the designer an interesting variety af textures to enhance the appearance of the building.

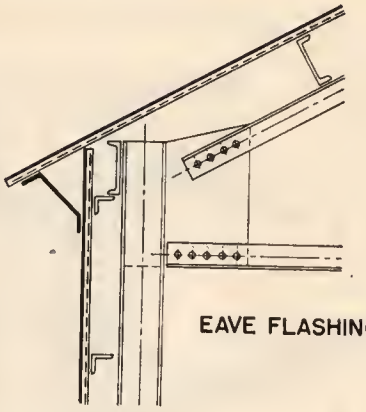


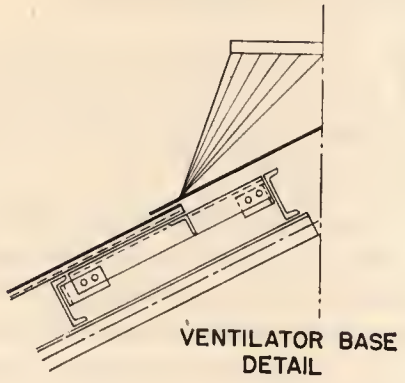
Galbestos- FLASHING DETAILS

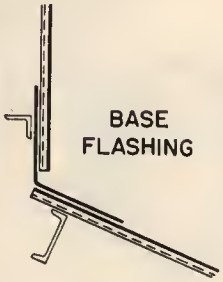
THE details on this page show the thorough provisions for flashing Galbestos installations. When these flashings are placed they form an effective seal at the overlapping points. This seal is maintained in spite of wind pressure, vibrations, impacts, etc. Wind, rain, snow and dust cannot possibly filter in through such laps, nor can heat escape from or leak into the interior of buildings.

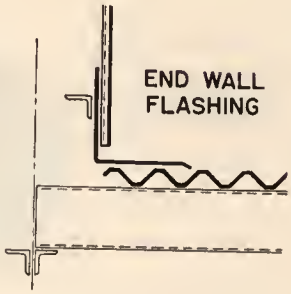
Special flashings which conform to the shape of the corrugations are available to close each of the three types of corrugations at those points where a flat flashing crosses a corrugated sheet.

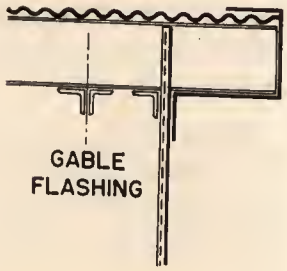
For any application not covered on these pages please get in touch with the Robertson Engineering Department for complete details.









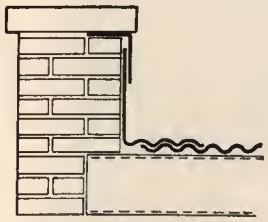


Galbestos- TYPICAL INSTALLATIONS

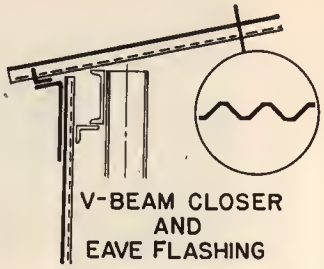
GALBESTOS provides quick and efficient building elements which ideally adapt themselves to the clean lines of modern architecture. Where quick erection is the byword, Galbestos wall panel and roofing meet this need most efficiently and offer distinct advantages: attractive appearance, quick erection, long service life, a one-hundred percent salvage value; and in addition, while such structures may be erected with all the speed usually found in temporary construction, they will have all the qualities of permanence.

Galbestos will go far to stimulate the production of good, modern design. Easily worked, Galbestos has proved to be the most modern of building materials for factories, schools, airplane hangars, industrial plants, and many other types of buildings.

• Galbestos wall panel and roofing was used in the erection of this huge building at a U. S. Navy Yard.



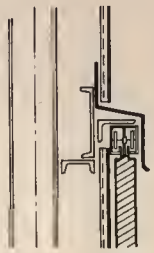
PARAPET WALL DETAIL



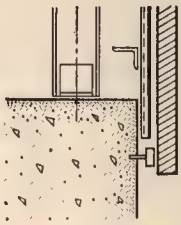
V-BEAM CLOSER AND EAVE FLASHING

WINDOW HEAD DETAIL

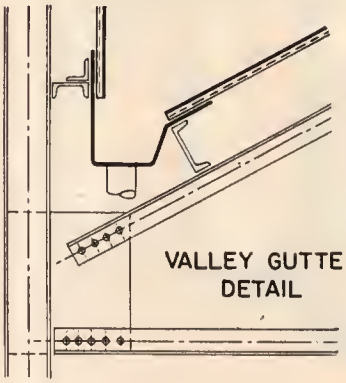
WINDOW SILL DETAIL



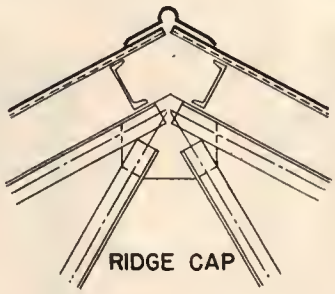
DOOR TRACK HOOD DETAIL



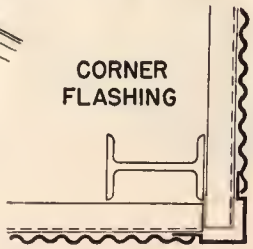
DOOR SILL DETAIL



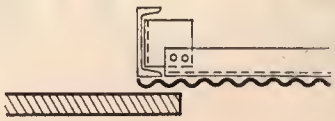
VALLEY GUTTER DETAIL



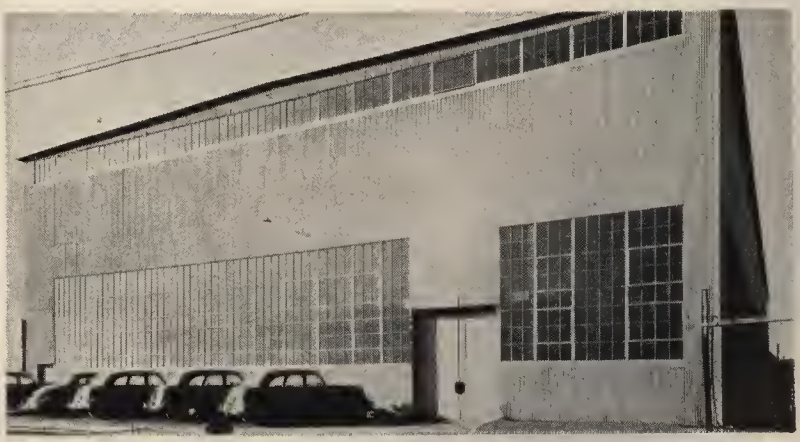
RIDGE CAP



CORNER FLASHING



DOOR JAMB DETAIL



• *Above:* Q-panels produced this attractive insulated plant building.

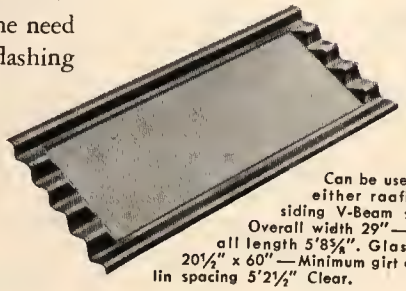
• *Above right:* Government, municipal, and private hangars all over the world are built with Robertson products.

• *Right:* Standard corrugated siding sheet used in a modern, windowless, controlled-condition building.

... for economical daylighting .. use SHEETLITES

Robertson Sheetlites are equally adaptable for roof or sidewall use, and can be easily and quickly removed and installed at another location. They are made in standard sheet width and can replace, or be replaced with a standard Corrugated or V-Beam sheet.

Robertson Sheetlites are designed to provide economical daylighting in buildings where the working plane does not require a light intensity of more than 15 foot candles. They can be installed in old or new buildings where either Robertson Protected Metal or Galbestos is the covering material. Made in V-Beam and Standard Corrugation types, their heavy aluminum frame provides positive counter-flashing, and eliminates the need for crickets or additional flashing of any kind.



Can be used with either roofing or siding V-Beam sheets. Overall width 29"—Overall length 5'8⅜". Glass size 20½" x 60"—Minimum girt or purlin spacing 5'2½" Clear.

Made for Corrugated Sidewall installation only, the operating Sheetlite has top-hung movable glass set in aluminum frame.

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1

FLASHINGS

by

CHENEY

CHENEY FLASHING CO.

A COMPLETE LINE OF FLASHINGS

Products:

CHENEY FLASHING, 16 oz. copper; CHENEY FLASHING, 10 oz. copper; 3-WAY FLASHING, 16 oz. copper; CHENEY FLASHING REGLET, 16 oz. copper; ALUMICOR, 28 gauge aluminum; ALUMICOR HEAVY, 22 gauge aluminum; ALUMICOR THRU-WALL FLASHING, 22 gauge aluminum.

CHENEY FLASHING

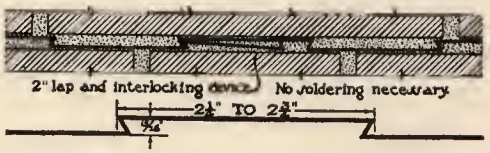
Three-Way Bond, 16 oz. and 10 oz. Copper

The Standard Thru-Wall Flashing used successfully for almost a decade in the Nation's important buildings.

SPECIFICATIONS:

CHENEY FLASHING (Private Work) Thru-Wall Flashing shall be provided below parapet copings, for counter-flashing in masonry parapets, where low roofs abut the superstructure, wherever flashing is set between two courses of masonry, and elsewhere as indicated on drawings. Thru-Wall Flashings shall be placed in the wall with mortar below and on top of flashing, so that a mechanical bond is obtained both vertically and horizontally. These flashings shall be CHENEY FLASHINGS (16 oz. copper) and shall be furnished and installed according to the standard specifications of CHENEY FLASHING CO., Trenton, N. J.

CHENEY FLASHING (Public Work) Thru-Wall Flashing; (16 oz. copper) shall be provided below parapet copings, for counter-flashing in masonry parapets, where low roofs abut the superstructure, wherever flashing is set between two courses of masonry, and elsewhere as indicated on drawings. Thru-Wall Flashings shall be placed in the wall with mortar below and on top of flashing, so that a mechanical bond is obtained Flashings shall be formed into dovetailed-shaped, flat corrugations extending transversely of the sheet and not over 3 inches apart, which shall provide a mechanical keybond in the mortar bed in three directions (longitudinally, transversely and vertically). Crimped copper or deformed sheets which provide bond only in horizontal direction will not be accepted.



3-WAY FLASHING

MADE OF 16 oz. AND 10 oz. COPPER

Packed in individual coils of about 100 lbs. each. In all even widths from 6" to 20", and in sheets 22" to 36" wide.

- Nationwide distribution and large production have brought forth a new Thru-Wall Flashing superior in every way and lower in cost than any of the inferior two-way copper flashings.
- Made of 16 oz. copper, bonds in all directions, vertical as well as horizontal, and has weep hole drainage.
- 3-Way Flashing meets all Federal specifications for Thru-Wall Flashing.
- Produced in continuous coils of about 100 lbs. each; means faster installation, fewer end laps and lower total cost.

SPECIFICATIONS:

3-WAY FLASHING (Private Work) Thru-Wall Flashing shall be provided below parapet copings, for counter-flashing in masonry parapets, where low roofs abut the superstructure, wherever flashing is set between two courses of masonry, and elsewhere as indicated on drawings. Thru-Wall Flashing shall be placed in wall with mortar below and on top of flashing, so that a mechanical bond is obtained both vertically and horizontally. The flashings shall be 3-Way Flashings (16 oz. copper) and shall be furnished and installed according to the standard specifications of CHENEY FLASHING CO., Trenton, N. J.

3-WAY FLASHING (Public Work) Thru-Wall Flashing (16 oz. copper) shall be provided below parapet copings, for counter-flashing in masonry parapets, where low roofs abut the superstructure, wherever flashing is set between two courses of masonry, and elsewhere as indicated on drawings. Thru-Wall Flashing shall be placed in wall with mortar below and on top of flashing, so that a mechanical bond is obtained both vertically and horizontally. Flashings shall be formed into dovetailed-shaped flat corrugations or undercut saw-tooth ribs, extending transversely of the sheet and not more than 3" apart.

Trenton, New Jersey . CHENEY

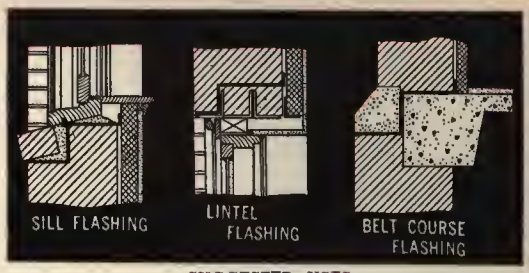
STOCKED BY DISTRIBUTORS EVERYWHERE

ALUMICOR

All-Purpose, Low-Priced FLASHING

MADE OF ALUMINUM

FOR SPANDRELS, HEADS AND SILLS IN MASONRY AND GENERAL ALL-AROUND USE IN FRAME CONSTRUCTION



SUGGESTED USES

- Cannot rust or corrode.
- Hand formable on the job, eliminating all shop labor.
- Has a pleasing gray surface that does not stain and never requires painting.
- Soft and ductile, easy working, yet tough and strong.
- Withstands coal or oil burning fumes, and is unaffected by salt air conditions.
- No electrolysis when in contact with steel.
- The lowest priced, permanent, all-around Flashing on the market.

ALUMICOR is made of 28 gauge (B & S) aluminum heated to high temperatures and combined under pressure with special pitches, pulverized slate and mica under the Cheney Process, so that the aluminum core is completely protected by a rubber-like material that will not run at high temperatures, nor crack or peel at very low temperatures.

SPECIFICATIONS:

FLASHING: For spandrels, lintels, sills and wherever concealed flashing is indicated on drawings, install ALUMICOR made of 28 gauge aluminum, factory processed under high temperatures with a compound of special pitches, pulverized slate and mica, which shall thoroughly bond to the metal, and which will not run at temperatures of 230°F. nor crack or peel at 32°F. Weight of compound to be not less than 10 lbs. per 100 square feet.

Made in coils 100 feet long, and in all even widths up to 36". Weight about 27 lbs. per 100 square feet.

ALUMICOR HEAVY

FOR GRAVEL STOPS, VALLEYS, FLASHINGS, DUCTS AND ALL GENERAL SHEET METAL WORK

Same as regular ALUMICOR except made of 22 gauge (B & S) aluminum. Twenty-five percent thicker, yet costs 40% less than 16 oz. sheet copper. Made in coils 100 ft. long and only in 24", 30" and 36" widths. Weight about 45 lbs. per 100 square feet.

SPECIFICATIONS:

SHEET METAL: Except as otherwise noted, install 16 oz. copper or ALUMICOR HEAVY, made of 22 gauge aluminum, factory processed under high temperatures with a compound of special pitches, pulverized slate and mica, which shall thoroughly bond to the metal, and which will not run at temperatures of 230°F. nor crack or peel at 32°F. Weight of compound to be not less than 10 lbs. per 100 square feet.

ALUMICOR THRU-WALL FLASHING

Three-Way Bond, 22 Gauge Aluminum

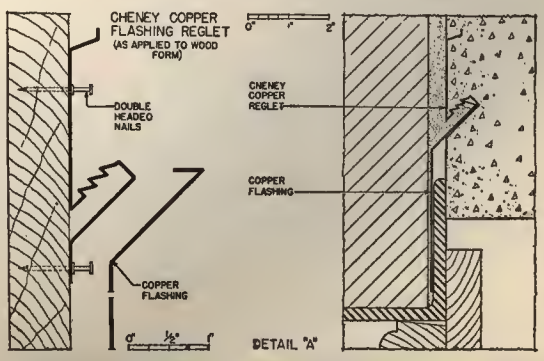
Exactly the same as 3-WAY FLASHING except made of 22 gauge (B & S) aluminum heated to high temperature, and combined under pressure with special pitches, pulverized slate and mica under the CHENEY PROCESS, so that the aluminum core is completely protected by a rubber-like material that will not run at high temperatures, nor crack or peel at very low temperatures. Corrosion and rust-proof.

SPECIFICATIONS: Use regular 3-WAY FLASHING specifications, substituting 22 gauge processed aluminum in place of 16 oz. copper.

CHENEY REGLET

16 oz. Copper

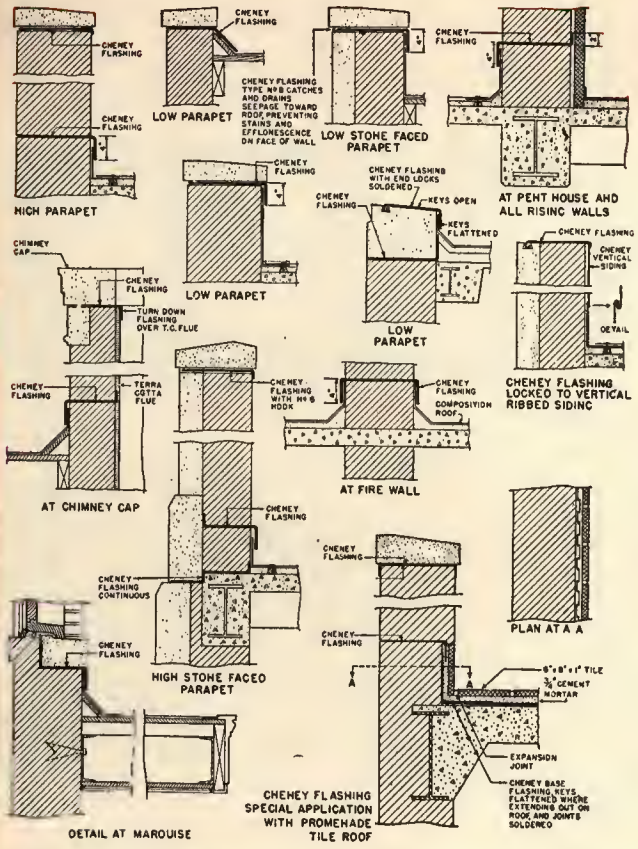
For forming reglets in concrete parapets and spandrel beams. Made in 5 ft. and 6 ft. lengths, and complete with Celotex filler and double head nails.



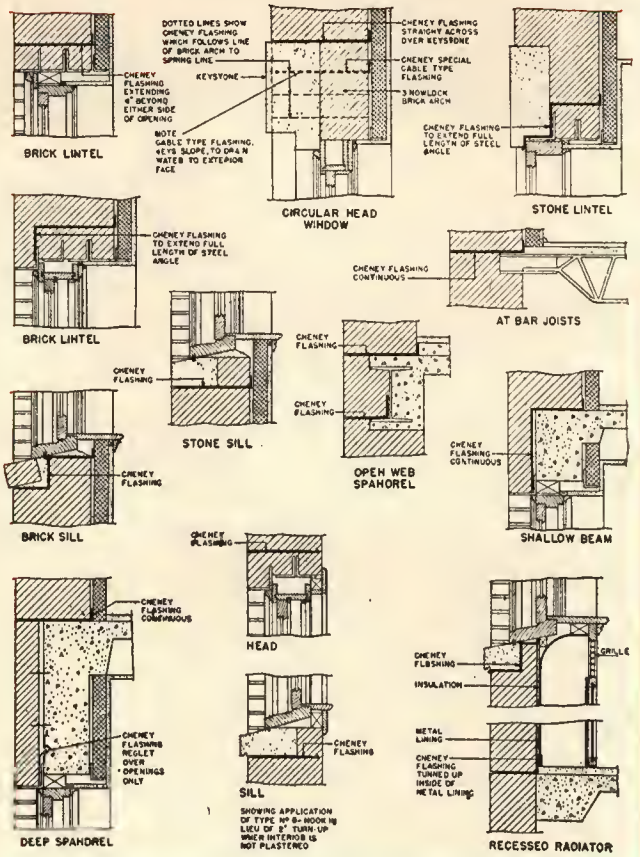
SPECIFICATIONS:

REGLETS: Shall be made of 16 oz. copper with a 45° slot 1⅛" deep and with ¼" opening for insertion of cap flashing.

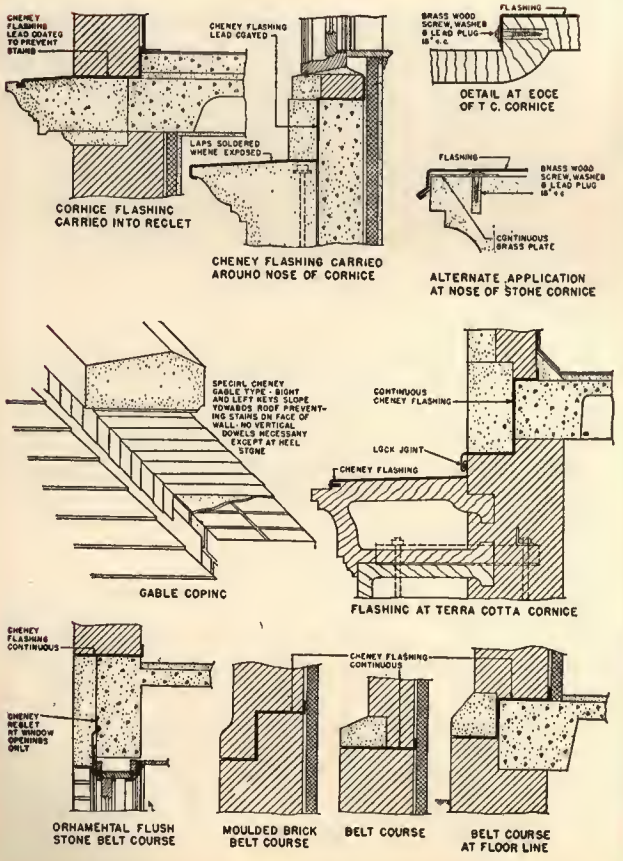
DETAILS—CHENEY FLASHINGS



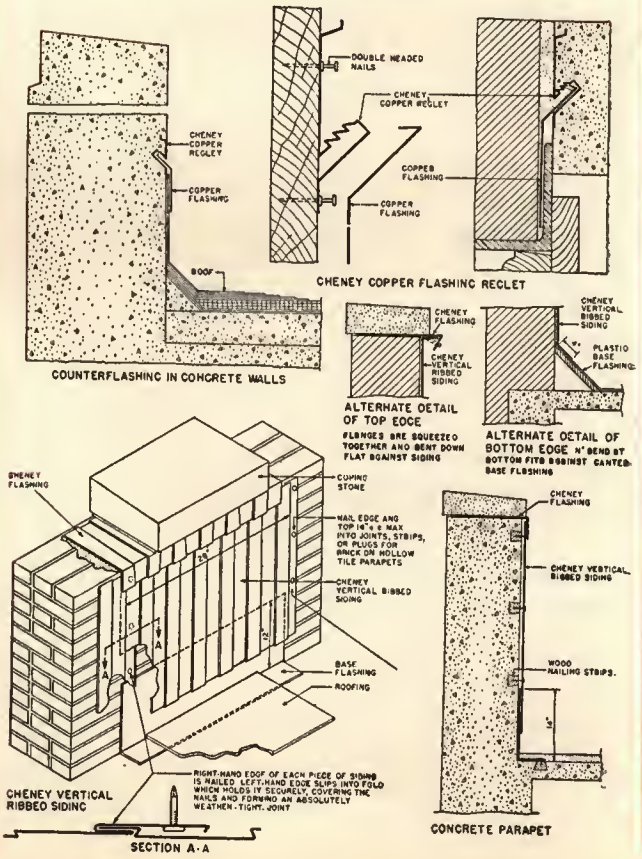
DETAILS—CHENEY FLASHINGS



DETAILS—CHENEY FLASHINGS



DETAILS—CHENEY FLASHINGS



FITRITE

SNOW GUARDS
ROOF STRAINERS
LEADER BANDS AND STRAPS
SKYLIGHT GEARING

8d
2

VITAL PROTECTION FOR STEEP SLOPING ROOFS OF ALL TYPES OF MATERIALS

Steep Roofs of all kinds sloping toward spaces where pedestrians may pass below them should have adequate snow guard protection. Snow slides are dangerous to life and are apt to cause damage to shrubbery and gutters. This can be prevented with "Fitrite" and "Protector" Pipe Snow Guards. The proper snow guard for each type of sloping roof is described on the following pages.

Fitrite Snow Guards on Spanish Tile Roof

Fitrite Snow Guards on Slate Roof

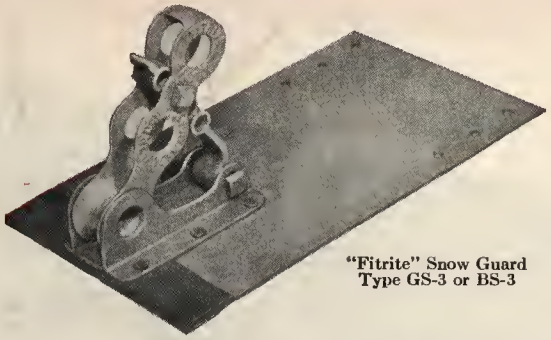
DAVID LEVOW

308 West 20th Street, New York 11, N. Y.

ADJUSTABLE PIPE SNOW GUARDS FOR ALL TYPES

"FITRITE" SNOW GUARD for Large Slate Roofs . . . 3 Pipes

These snow guards will take care of roofs up to 25′ rafters . . . for longer lengths use additional rows of snow guards not over 25′ apart and parallel with the eaves.



"Fitrite" Snow Guard Type GS-3 or BS-3

Application and Installation . . . Adjustable to any pitch. Pipes are parallel to but set back one or two courses from edge of caves or gutter. Brackets set from 5′ to 6′ apart and base plate is fastened to deck with #14 wood screws. The base plate takes the place of a slate and the next row of slate goes over the plate. Special sheet lead shield on under side of bottom plate prevents cracking of slate where plate comes in contact with the slate.

FOR GALVANIZED IRON PIPE . . . Specify "FITRITE" TYPE GS-3 . . . With 3 galvanized iron pipes and galvanized malleable iron brackets.

FOR BRASS PIPE . . . Specify "FITRITE" TYPE BS-3 . . . With 3 brass pipes and cast bronze brackets.

PIPE SIZES . . . 3 pipes of (galvanized iron) (brass) ¾″ I.P.S. (1.05″ o.d.)

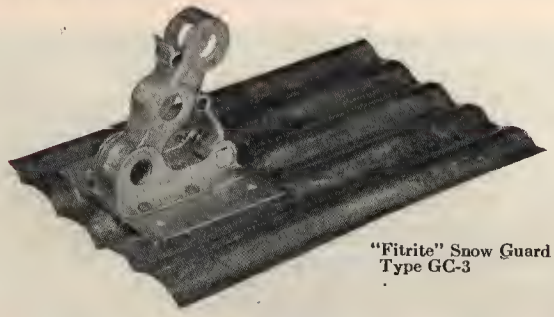
A Few Recent Installations of "Fitrite" Adjustable Pipe Snow Guards on Metal or Slate Roofs

Building, Location and Architect			
*Hotel Pennsylvania, New York City	McKimm, Mead & White	St. Michael's Church, Amsterdam, N.Y.	Morgan & Millaman
*Metropolitan Life Insurance Co. Sanitarium, Mt. McGregor, N. Y.	D. Everett Waid	Roosevelt High School, Yonkers, N.Y.	C. Howard Chamberlain
U. S. Post Office, Brooklyn, N.Y.	U. S. Government Architect	Museum of Natural History, New York City	Trowbridge & Livingston
*Temple Emanu-El, Fifth Avenue, New York City	Robert D. Kohn	U. S. Government Theatre, Mitchel Field, Long Island, N. Y.	U. S. Government Architect
St. Joseph School, Maplewood, N.J.	McKenna & Irving	War Department Theatre, Fort Riley, Kan.	U. S. Government Architect
Ridgewood High School, Ridgewood, N.J.	Fanning & Shaw	Veterans' Hospital, Oteen, N.C.	U. S. Government Architect

*Metal Roof

"FITRITE" SNOW GUARD—For Corrugated Roofing . . . 3 Pipes

These snow guards will take care of roofs up to 25′ rafters . . . for longer lengths use additional rows of snow guards set not over 25′ apart and parallel with the eaves.



"Fitrite" Snow Guard Type GC-3

SIZE OF PLATE—The snow guard has a base plate of 7½″ wide and 7″ high which rests on top of 3 corrugations of the roofing and is bolted thereto by four 5/16″ bolts spaced 5¼″ o.c.

Application and Installation . . . Adjustable to any pitch. Installed with pipes parallel to the eaves. This snow guard has been used with considerable success on several mills of the Bethlehem Steel Company, Sparrows Point, Md.

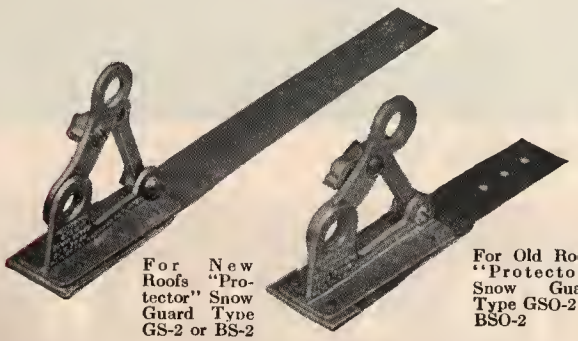
FOR GALVANIZED IRON PIPE . . . Specify "FITRITE" TYPE GC-3 Snow Guard with 3 galvanized iron pipes and galvanized malleable iron castings.

PIPE SIZES . . . 3 pipes of (galvanized iron) ¾″ I.P.S. (1.05″ o.d.)

"PROTECTOR" SNOW GUARD for Small Slate Roofs . . . 2 Pipes

Designed for residential or other small buildings with roofs having rafters not over 18′ long.

Inconspicuous and Efficient



For New Roofs "Protector" Snow Guard Type GS-2 or BS-2

For Old Roofs "Protector" Snow Guard Type GSO-2 or BSO-2

For typical residential installation of "Protector" Snow Guards see front cover.

For New Roofs . . . "Protector" Snow Guards with 24″ long bracket plates, 2″ wide by 1/16″ thick with lead shields and spaced 5′ to 6′ apart. Bracket plate is nailed directly to roof boards. Next row of slate goes over the plate.

FOR GALVANIZED PIPES . . . Specify "Protector" TYPE GS-2 . . . With 2 galvanized iron pipes ½″ I.P.S. (.84″ o.d.) and galvanized malleable iron brackets.

FOR BRASS PIPES . . . Specify "PROTECTOR" TYPE BS-2 . . . With 2 brass pipes ½″ I.P.S. (.84″ o.d.) and cast bronze brackets.

For Old Roofs . . . "Protector" Snow Guards with 12″ long plate spaced 5′ to 6′ apart. Push plate between slates, nailing at joint of slates, through holes drilled in lower slate. Insert copper or galvanized flashing to cover nail heads.

FOR GALVANIZED PIPES . . . Specify "PROTECTOR" TYPE GSO-2 . . . With 2 galvanized iron pipes ½″ I.P.S. (.84″ o.d.) and galvanized malleable iron brackets.

FOR BRASS PIPES . . . Specify "PROTECTOR" TYPE BSO-2 Snow Guard . . . With 2 brass pipes ½″ I.P.S. (.84″ o.d.) and cast bronze brackets.

"FITRITE" SNOW GUARDS also made for ROMAN, MISSION or any other tile or shingles

"FITRITE" SNOW GUARD for Spanish Tile Roofs . . . 3 Pipes

These snow guards will take care of roofs up to 25′ rafters . . . for longer lengths use additional rows of snow guards set not over 25′ apart and parallel with the eaves.

"Fitrit" Snow Guard Type GT-3, IBT-3 or BT-3

This snow guard is designed especially for use with Spanish tile. The bottom casting is made the same shape as the tile it replaces and is set 5′ to 6′ apart.

For illustration of "Fitrite" Snow Guard on Spanish Tile Roof see front cover.

FOR GALVANIZED IRON PIPE . . . Specify "FITRITE" TYPE GT-3. The bottom casting is made in gray iron, painted red. The top casting is made of galvanized malleable iron for three (3) pipes.

FOR BRASS PIPE . . . Specify "FITRITE" TYPE IBT-3. Made with bottom castings of gray iron, painted red and top casting bronze for three (3) pipes.

FOR BRASS PIPE . . . Specify "FITRITE" TYPE BT-3. Made with bronze castings throughout for three (3) pipes.

PIPE SIZES . . . Either galvanized iron or brass pipes shall be ¾″ I.P.S. (1.05″ o.d.)

"FITRITE" SNOW GUARD for Metal and Composition Roofs . . . 3 Pipes

These snow guards will take care of roofs up to 25′ rafters . . . for longer lengths use additional rows of snow guards set not over 25′ apart and parallel with the eaves.

"Fitrite" Snow Guard Types GM-3 or BM-3

Types GM-3 or BM-3

For Standing Seam or Flat Seam Metal and Composition Roofs. Base is one-piece 6″ x 10″ casting of aluminum alloy or bronze.

FOR GALVANIZED IRON PIPES . . . Specify "FITRITE" TYPE GM-3 Snow Guard with 3 galvanized iron pipes and aluminum alloy cast base.

FOR BRASS PIPE . . . Specify "FITRITE" TYPE BM-3 with 3 brass pipes and solid bronze base.

Types GB-3 or BB-3

For Batten Roofs . . . Same types as above but made with base saddle casting to fit over batten.

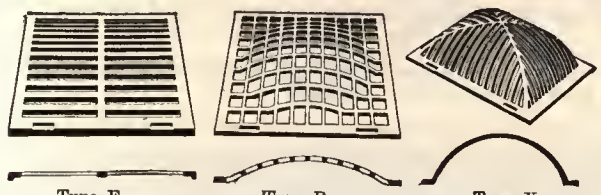
FOR GALVANIZED IRON PIPE . . . Specify "FITRITE" TYPE GB-3 Snow Guard with 3 galvanized iron pipes and aluminum alloy cast base.

FOR BRASS PIPE . . . Specify "FITRITE" TYPE BB-3 with 3 brass pipes and solid bronze base.

"Fitrite" Snow Guard Types GB-3 or BB-3

"FITRITE" ROOF STRAINERS

FOR FLAT ROOFS Having Inside Cast Iron Leaders



Type F Showing Cross Section

Type R Showing Cross Section 1″ high

Type X Showing Cross Section 3¼″ high

Type F. Perfectly flat. Extensively used for tile roofs and roof gardens requiring freedom from all obstruction; also for swimming pools.

Type R. The slight crown (1″ high) does not seriously obstruct the roof, yet the construction is such that debris slides off easily. Especially recommended for flat tile or slag roofs having inside leaders at center of roof.

Type X. Recommended where drainage efficiency is the prime consideration. The extra high crown (3¼″) and narrow slits effectively keep out gravel, sticks, etc. Type X is especially desirable where leaders are at edge of roof.

Materials. All types made in solid bronze.
"Fitrite" Bronze Strainers about 3/16″ thick will not rust, and are practically unbreakable . . . will easily support the weight of three husky men. Each strainer has two hinge holes, allowing easy attachment by copper strip to leader box.

Strainer Sizes

Size	Overall Size, Inches	Type
12″	11¾ x 11¾	F, R and X
10″	9¾ x 9¾	F, R and X
8″	8 x 8	F, R and X
6″	6 x 6	F and R

BEEHIVE ROOF STRAINERS

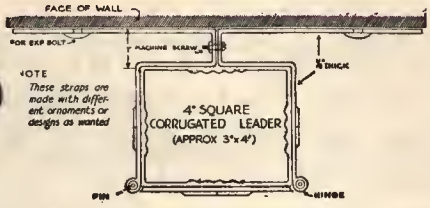
For Outside Leaders

Material and Sizes . . . Solid bronze 3, 4, 5, 6, 7 and 8″ diameter, also 2″ x 3″ and 3″ x 4″ square.

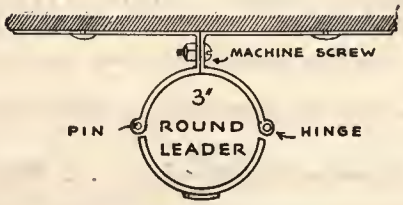
Practically unbreakable. Will last for the life of the building.

LEADER BANDS and STRAPS

"FITRITE" HINGED BRONZE LEADER BANDS



Special Church Design

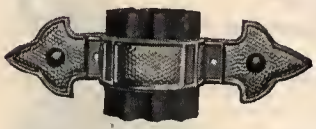


Sizes . . . Made for 3″ and 4″ round corrugated pipe. Also for 2″ x 3″, 3″ x 4″ and 4″ x 5″ square corrugated pipe and any special size to order. Bands can he furnished with cross, initials or other ornamentations, if desired.

Installations . . . To he fastened to wall with four expansion holts. (Holes in straps are properly spaced for hrick joints.) When installed, pipe remains 1″ from face of huilding.

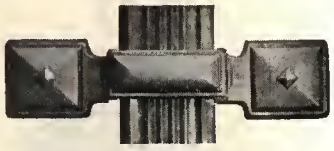
Features . . . Right side of hand is permanently hinged. Left side has loose pin which permits removing leader for replacement without taking band from wall. Band is so constructed that machine screw can be adjusted to take care of variations in size of pipe and assures leader heing held firmly in position.

ONE PIECE COPPER OR ZINC LEADER STRAPS (for medium cost work)



"FITRITE" STYLE "L" (Low)
2″—3″—4″ Used on round

"FITRITE" STYLE "L" (Low)
2″—3″—4″ Used on Square Corr.



"RIVAL" STYLE "B"
3″ and 4″ for Square Corr. only

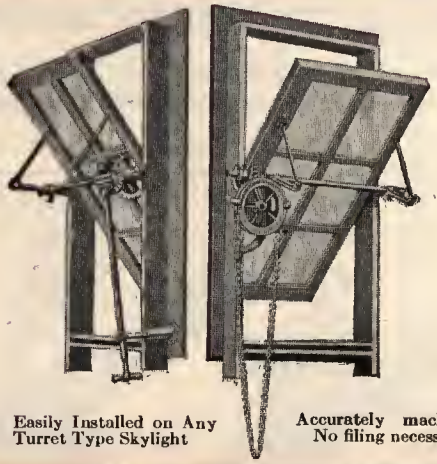
Style "L" (Low)

STYLE "L" is made of heavy gauge metal strong enough to hold conductor without the use of hooks. Can he used for plain round, and round or square corrugated pipe as shown.

Style "B"

STYLE "B" is made of 16 oz. copper or 11 gauge zinc. Can he used with or without hooks. For square corrugated pipe only.

"FITRITE" SKYLIGHT GEARING



Easily Installed on Any Turret Type Skylight

Accurately machined. No filing necessary

"Fitrite" Skylight Gearing has special oval pipe holes on arms and lifting gear.

The result is a much firmer grip (contact at three points instead of one) and absolute freedom from rattling in any position.

Material . . . Made in best quality gray iron, and also in solid bronze, which is rustproof and harmonizes with copper skylights.

Sizes . . . Made for standard ½″ pipe size. Also furnished for ⅜″ and 1″ pipe sizes.

"Fitrite" Bronze Gearing is especially recommended:

1. For industrial buildings as it resists corrosion due to chemical fumes, acids, etc.
2. For laundries, kitchens or whcrever excessive moisture causes iron to rust away.

The slight extra cost of "Fitrite" Bronze Gearing assures a permanent trouble-free joh.

Chain gearing made only ½″ and 1″ in size.

DAVID LEVOW

308 WEST 20TH STREET, NEW YORK 11, N. Y.

MITCHELL-RAND

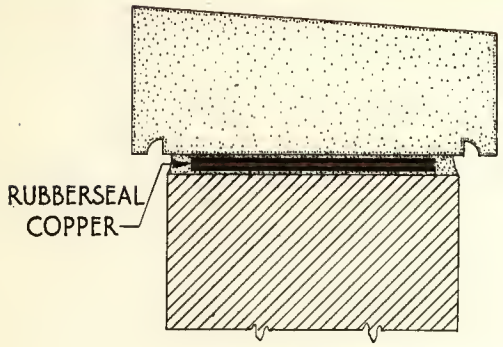
Rubberseal Copper

SPECIFICATIONS AND DETAILS DESCRIBING
THE USES OF RUBBERSEAL COPPER . . . .

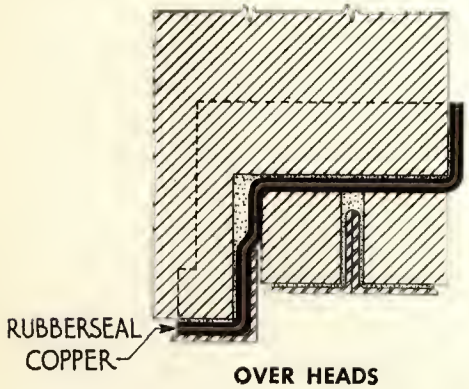
MITCHELL RAND MFG CORP

51 MURRAY STREET NEW YORK 7, N. Y.

RUBBERSEAL C
Economical Waterproofi



UNDER COPING



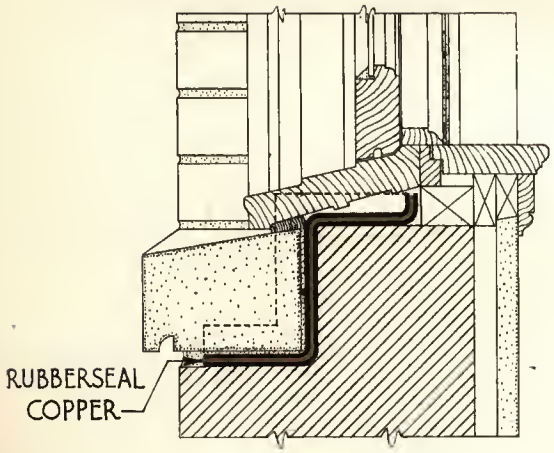
OVER HEADS

Mitchell-Rand Rubberseal Copper is composed of a central layer of Anaconda "Electro-Sheet" Copper in weights of 2, 3, 5 and 7 ounces per square foot, heavily coated on both sides with tightly adherent Rubberseal Compound.

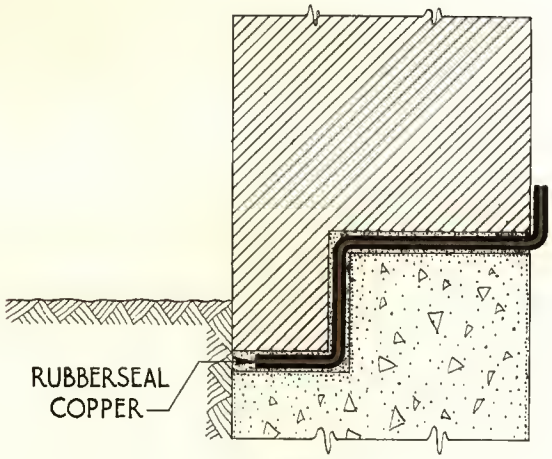
What is RUBBERSEAL COMPOUND?

RUBBERSEAL is a tough, rubbery, elastic bituminous compound. It does not contain rubber in any form, but is composed of high grade asphalts of varying melting points, plus other vital ingredients. Rubberseal Compound is unique among asphalt compounds in its combination of flexibility with firmness at normal installation temperatures. At freezing it is scarcely less flexible than at room temperature; and in the hottest summer sun it does not "run".

Rubberseal Compound is further unique among asphalt compounds in its ability to withstand acids and alkalis. Furthermore, it has no corrosive elements of its own. It may be placed in contact with any metal without fear of electrolytic action.



UNDER SILLS



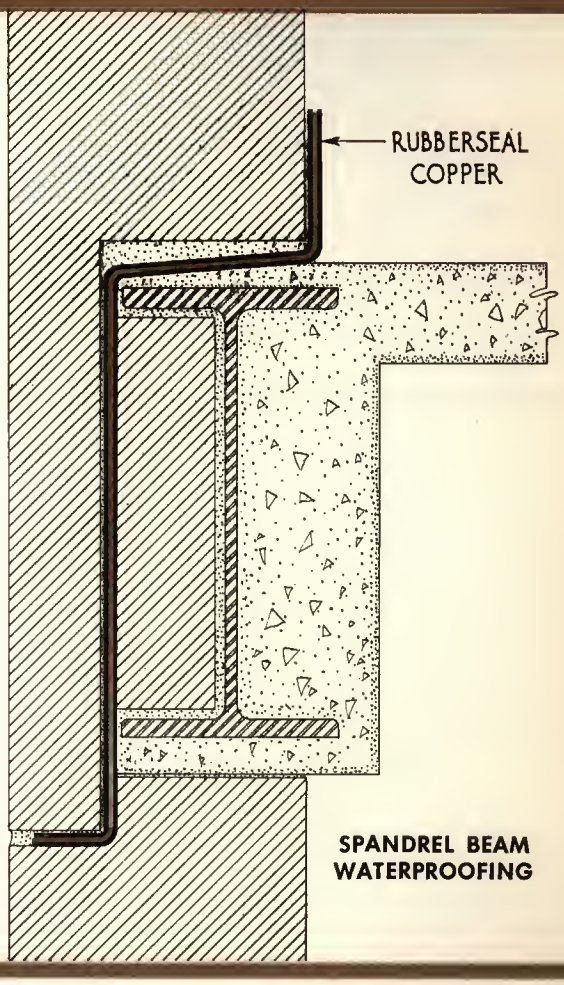
AT GRADE

PPER for Permanent, from Cellar to Roof

Another important feature of Rubberseal Compound is a self-sealing tendency which is not affected by age. When punctured, the surface of the compound tends to close in on itself. This action is independent of heat and pressure. At higher temperatures, of course, the self-sealing action is accelerated and no artificial aid is required. At lower temperatures the speed of sealing may be increased by application of cold adhesives. This self-sealing tendency is positive assurance against pin holes —real protection against leaks.

• • •

RUBBERSEAL COPPER, because of its low cost, durability and extreme flexibility, is thus ideal for various flashing purposes. The non-corrosive, elastic Rubberseal Compound—covering both sides of the copper—affords a natural bond where aggregate touches, plus chemical and physical protection to the metal itself. The copper provides additional strength and toughness, and sufficient "body" for efficient workability. 8,000,000 square feet have been installed without a single report of wall slippage.



SUGGESTED SPECIFICATIONS

I. MATERIAL: Shall be Mitchell-Rand Rubberseal Copper of the weight designated (two ounce, three ounce, five ounce, or seven ounce. These weights being understood to refer to the weight per square foot of uncoated copper.)

II. PREPARATION OF SURFACES: All surfaces shall be clean and dry before the installation of spandrel waterproofing. The masonry contractor shall provide a smooth cemented bed on top of the spandrel beams pitching out toward the exterior face of the wall.

III. SCOPE: All previously prepared surfaces of all steel spandrel beams and lintels in exterior walls above the first floor level and over finished basement areas, shall have the top and outside faces waterproofed with Rubberseal Copper, weight and characteristics as hereinbefore specified.

IV. INSTALLATION: The Rubberseal Copper shall start at least 3 inches back of the interior face of the exterior wall, carried out over the top of the beam and down the face of same to the second course of brick below the bottom flange, and out to within 1 inch of the exterior face of the wall.

The Rubberseal Copper shall be turned up on the inside face of the exterior wall at least 3 inches.

Where joints are necessary Rubberseal Copper shall be lapped at least 3 inches and cemented with a high grade asphalt mastic.

V. WHERE LINTELS ARE MORE THAN 12 INCHES BELOW THE BOTTOM OF SPANDREL BEAM: At all door and window heads the Rubberseal Copper shall be built into the wall so as to form a pan 3 inches deep running entirely through the wall and 6 inches beyond the jamb on each side of opening.

RECOMMENDED WEIGHTS

2-ounce and 3-ounce for spandrel waterproofing, window head and sill flashings, and cut-off at grade; 5-ounce under copings and for shower pans in Residential Construction; 7-ounce for shower pans in Industrial and Institutional Construction.

USES FOR RUBBERSEAL COPPER

Spandrel waterproofing • Flashings at copings and parapet walls • Window head and sill pans Waterproof cut-offs at foundations • One-piece shower pans • Bath and toilet room waterproofing

These are a few of the nationally known organizations whose buildings are waterproofed with M-R Rubberseal Copper:

American Gas & Electric Co.
American Telephone & Telegraph Co.
Bethlehem Steel Company
Carbide & Carbon Chemical Corp.
Corn Products Refining Co.
E. I. DuPont de Nemours
Ethyl Corporation
Fisher Body Corp.
General Electric Company
Hecker Products Company
Merck & Company
Monsanto Chemicals
Phillip Morris & Co., Ltd.
Seagram Distillers
Sears Roebuck & Co.
Standard Oil Co. of New Jersey

REPRESENTATIVES

Abilene.....	METAL GOODS CORPORATION	141 Cypress Street	Abilene 8983
Atlanta.....	HILL R. HUFFMAN, INC.	60 Fifth Street, N.E.	Atwood 5884
Baton Rouge...	METAL GOODS CORPORATION	1742 Pickett Avenue	Baton Rouge 4-4738
Beaumont.....	METAL GOODS CORPORATION	Box 1229	Beaumont 4-6212
Chicago.....	GEORGE W. CASE	732 N. Kenilworth Ave.	Euclid 5410
Cleveland.....	FRANK H. GRACE & CO.	1740 East 12th Street	Main 2515
Dallas.....	METAL GOODS CORPORATION	6211 Cedar Springs Road	Dixon 4-3925
Denver.....	METAL GOODS CORPORATION	817 - 17th Street	Main 9030
Detroit.....	HUNTER AND COMPANY	2842 West Grand Blvd.	Madison 3395
Houston.....	METAL GOODS CORPORATION	711 Milby Street	Beacon 3-8881
Indianapolis....	TANNER AND COMPANY	409 S. Pennsylvania Street	Lincoln 5471
Kansas City....	METAL GOODS CORPORATION	1300 Burlington	Norclay 3516
New Orleans...	METAL GOODS CORPORATION	432 Julia Street	Canal 7373
Oklahoma City.	METAL GOODS CORPORATION	1228 N.W. 28th Street	Okla. City 4-3009
Omaha.....	METAL GOODS CORPORATION	3515 N. 67th Street	Walnut 1112
Philadelphia...	JAMES L. COFFEY	7435 Elizabeth Road	Majestic 5-0370
St. Louis.....	METAL GOODS CORPORATION	5239 Brown Avenue	Goodfellow 1234
San Antonio....	METAL GOODS CORPORATION	709 Alamo Building	Cathedral 1891
Shreveport.....	METAL GOODS CORPORATION	Box 248—Cedar Grove Sta.	Shreveport 7-3582
Tulsa.....	METAL GOODS CORPORATION	302 North Boston	Tulsa 4-1175
Wichita.....	METAL GOODS CORPORATION	618 N. Parkwood Lane	Wichita 6-1184

MITCHELL RAND MFG CORP

51 MURRAY STREET NEW YORK 7, N. Y.

SANDELL

THROUGH-WALL FLASHINGS
EXPANSION JOINTS . . .
WATER STOPS . . . .

SANDELL THROUGH-WALL FLASHING

THE ESSENTIAL REQUIREMENTS OF A GOOD THROUGH-WALL FLASHING

(1) Simplicity of Design

The flashings should be as simple in design as possible to accomplish the desired results. Flashings which are complicated in design invite trouble because, being rarely installed as intended, they often cause serious leakage.

(2) Must Give Good Bond

Through-wall Flashing must bond with the masonry to function properly.

(3) Must Expand and Contract Equally with the Masonry

It must be of a material that has approximately the same coefficient of expansion and contraction as that of the masonry, thus preventing differences of movement under temperature changes, which break the bond between flashing and masonry.

(4) Must Be Pliable, Yet Have Rigidity

It must be pliable enough to conform with the surface on which it is installed, yet rigid enough to make a firm turn-up on the inside of the wall.

(5) Not Compressible

It must be of a material that will not be compressed under the weight of masonry.

(6) Must Not Bend at Sharp Angles

It must be of a material that will not bend too sharply. Sharp bends weaken the flashing. Rolled bends are desirable.

(7) Must Not Discolor Adjoining Masonry

It must be a material that will under no conditions discolor the masonry.

SANDELL THROUGH-WALL FLASHING MATERIALS

Are Made in the Following Types and Conform to All of the Above Essential Requirements

GENERAL CONSTRUCTION

Type S

Type S Through-Wall Flashing is composed of two layers of full seal, asphalt-saturated cotton fabric between which is compressed a substantial steel wire-mesh, filled and coated with a special plastic asphalt, free from solvents or foreign fillers, to form a composite, extremely tough, waterproof flashing, with substantially the same coefficient of expansion as that of masonry.

The gridlike surfaces provide an excellent mechanical bond with the mortar and the tacky surfaced fabric provides an additional adhesive bond not obtainable with metal.

It is thin, light in weight, flexible and sufficiently rigid to maintain its shape when bent or formed by hand.

Type S Flashing is easily handled in long lengths and requires no prefabrication.

Type SL

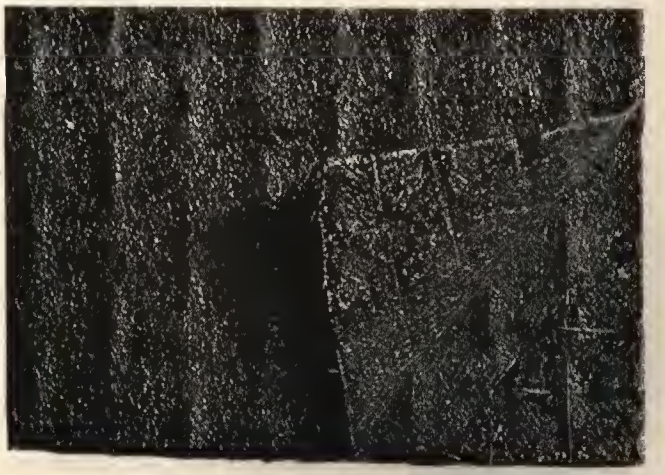
Type SL Flashing is similar in construction to Type S but is made from Sandell Asphalt Membrane instead of from woven cotton fabric. The same wire mesh is used and it has all of the advantages of Type S as regards bond, ease of handling, etc.

Type L

Type L is the same as Type SL except that Type L has a steel mesh of wider openings.

Asphalt Membrane

Sandell Asphalt Membrane was created by Sandell Engineers, especially for waterproofing and flashing purposes and is distinctly different from any other waterproofing fabric. It is neither a woven cloth or a felt but is, in fact, a sheet of pure asphalt reinforced with sufficient cotton fibres to enable it to be readily handled, the cotton fibres being thoroughly coated and protected by the asphalt.



General Construction of Sandell Through-Wall Flashing

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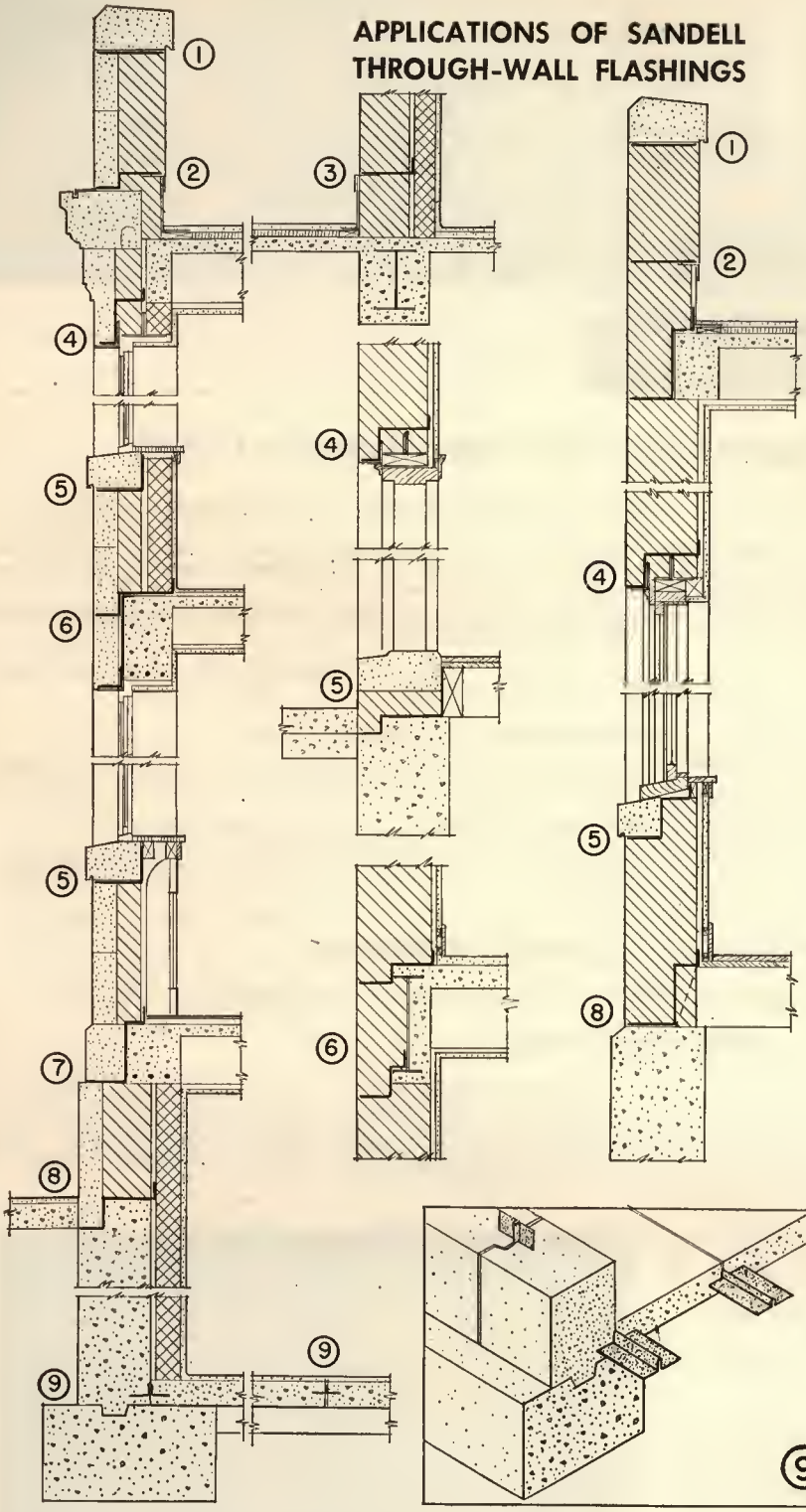
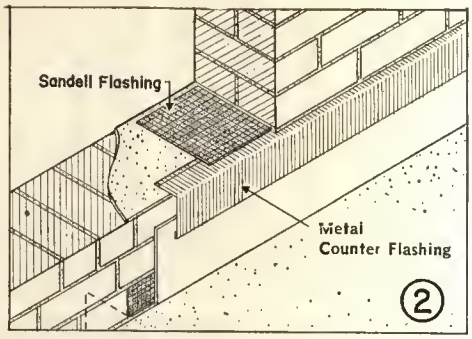
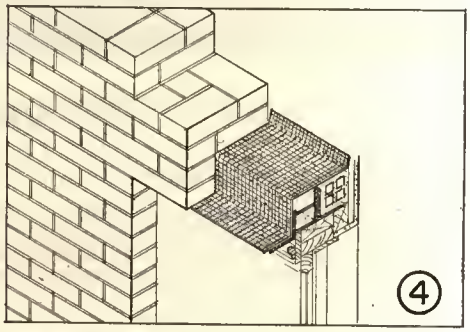
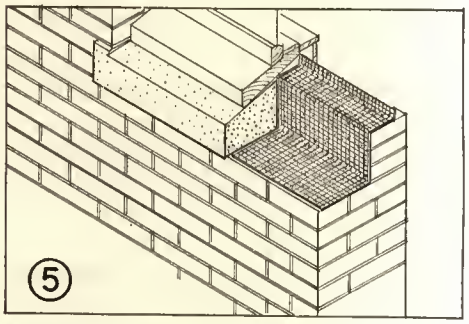
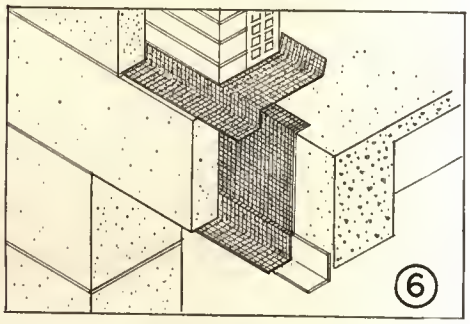
APPLICATIONS OF SANDELL THROUGH-WALL FLASHINGS

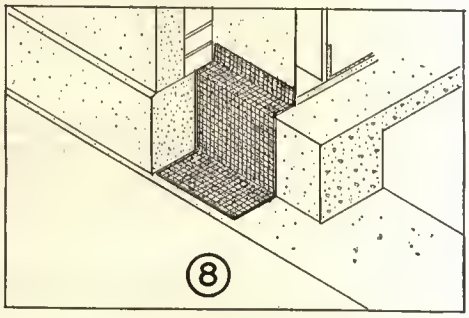


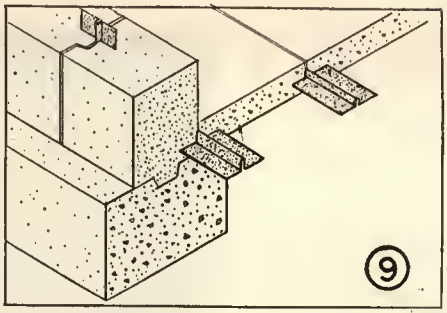












(1) Under Stone Copings—Sandell Through-Wall Flashing used directly under stone copings prevents any seepage into the wall below, due to shrinking of cement mortar joints and development of cracks.

(2) Used with Exposed Metal—A rolled edge should be formed on back edge of metal flashing and Sandell Through-Wall Flashing carried through the wall to assure a permanent bond and to stop seepage.

(3) At Penthouse and Setback Walls—All vertical walls above roof line should have Sandell Through-Wall Flashing carried through the wall at the level of the roof flashing.

(4) At Heads of Doors and Windows—Heads of doors and windows should have Sandell Through-Wall Flashing carried tbrough wall and to outside to carry off moisture which might otherwise work through.

(5) Under Sills of Doors and Windows—Complete pans of Sandell Through-Wall Flashing are easily formed and installed under all sills of doors and windows to save the wall decorations and to protect the wall construction below.

(6) At Spandrel Beams—Sandell Flashing should be carried through the wall as indicated. Two methods of flashing are shown in the sectional views. They protect the steel and prevent seepage over the heads of windows or at the ceiling.

(7) At Projecting Courses—Base or bond courses should have Sandell Through-Wall Flashing carried back of them—especially if course is of molded brick.

(8) Over Concrete Foundations—Sandell Through-Wall Flashing at this point completely isolates the foundation from the wall above, yet acts as a bond between them.

(9) At Basement Expansion Joints—Expansion joints as shown in the wall, between the wall and floor slab, and between adjacent sections of slab. The Sandell flashing is used as an expansion joint water-stop and prevents any seepage of water through the joints.

SANDELL EXPANSION JOINT WATER STOP

Essential requirements of expansion joint water stop

1. Material must be absolutely waterproof.

Sandell Type "S" Expansion Joint Water Stop has been tested by independent testing engineers up to a head of 137 feet of water (limit of the test) with no leakage or effect.

2. Material must bond rigidly to adjoining units.

The grid surface of Sandell Expansion Joint Water Stop cast in the concrete forms a watertight bond equal to the strength of the material. An embedment of 2¼" under test showed no apparent slippage or paths of water after 128' head (limit of test).

3. Bonded units must be free to move.

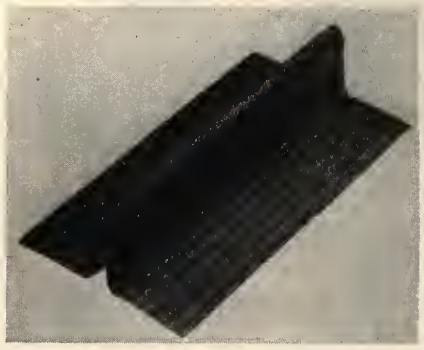
The expansion pleat allows the adjacent units to move without any stretching or sliding of the expansion joint material.

(Copies of test reports available on request.)

Sandell Expansion Joint Water Stop

Sandell Expansion Joint Water Stop as shown in cut is formed from Type S. It is used wherever a watertight joint is required between two units of concrete subject to movement due to expansion or settlement.

The grid surface of the material makes a watertight bond with the concrete which has withstood tests up to a hundred foot head of water.



DESCRIPTION OF MATERIAL

Sandell Type "S" Expansion Joint Water Stop is composed of two layers of full seal asphalt saturated cotton fabric between which is compressed a substantial woven steel wire mesh filled and coated with a plastic asphalt, free from solvents or foreign fillers, and the whole bonded under pressure into a sheet. This forms a composite, extremely tough, durable, waterproof material, with substantially the same coefficient of expansion as that of concrete or masonry.

USES AND ADVANTAGES

Sandell Expansion Joint Water Stop is designed for use wherever a watertight joint is required between two units of concrete or masonry subject to movement due to expansion, contraction, or settlement. This easily workable material is therefore recommended for foundation walls, floor slabs, roof slabs, retaining walls, tanks, dams, pits, and so forth. Many expansion joints, so called, are in reality spacers and act as water stops only when the concrete is expanding. We recommend their use where necessary with our material as shown. Sandell expansion joint installed at the time of construction and permanently bonded into the concrete eliminates leakage through joints and saves later makeshift waterproofing, repairs, and maintenance.

INSTALLATION

The sketches on the following page show typical installations which may be varied to fit special requirements of the job. The most popular width of material is 12 inch. This allows for 4 inches of the width of the material to be embedded in each of the adjoining units of concrete and 4 inches is allowed for the expansion pleat. Where the slabs are thin and lower pressures are expected a 9-inch width is sometimes used. The material should be installed in as long pieces as possible to avoid unnecessary splices. Where splices occur the material should be lapped at least 4 inches and carefully sealed with asphalt mastic; or one end should be opened, the other end inserted and sealed in with asphalt mastic. Attention is called to the preformed units shown on the opposite page. These units are made up in our factory and are used where the water stop changes direction. These preformed units simplify the installation and assure the proper function of the water stop at these critical points. In ordering them the size of the expansion pleat must be given.

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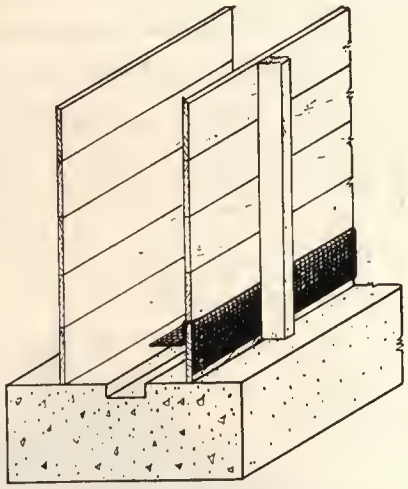


FIG. 1

SHOWING FOOTING AND SANDELL WATER STOP SET IN FORM OF FOUNDATION WALL BEFORE CONCRETE IS POURED

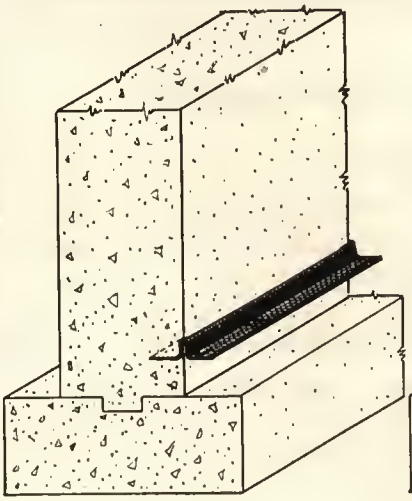


FIG. 2

SHOWING CONCRETE WALL AFTER IT HAS BEEN STRIPPED OF FORM WORK AND SANDELL WATER STOP BENT INTO POSITION TO RECEIVE FLOOR SLAB

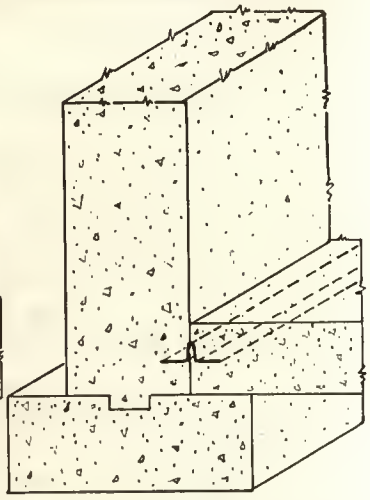


FIG. 3

SHOWING FLOOR SLAB IN PLACE AND SANDELL WATER STOP SECURELY EMBEDDED IN FLOOR SLAB AND FOUNDATION WALL

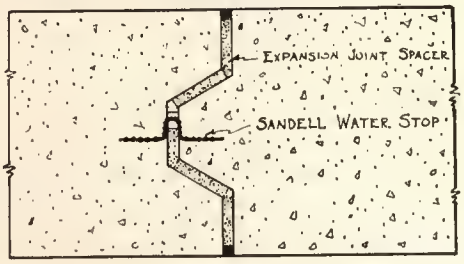


FIG. 4

VERTICAL WALL SECTION USING SANDELL WATER STOP WITH EXPANSION JOINT SPACER STRIP

NOTE:—
WHERE CONCRETE UNITS ARE SUBJECTED TO RISES IN TEMPERATURE SUCH AS CAUSED BY THE HEAT OF THE SUN ON CONCRETE ROAD SLABS AND EXPOSED RETAINING WALLS, IT IS NECESSARY TO USE AN EXPANSION JOINT SPACER STRIP AS SHOWN IN FIGS 4, 5, & 6

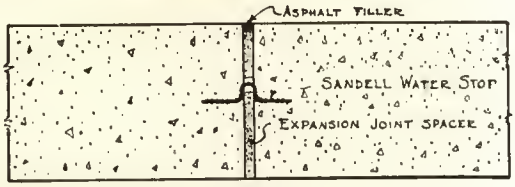


FIG. 6

SECTION SHOWING JOINT IN CONCRETE SLAB USING SANDELL WATER STOP IN CONJUNCTION WITH EXPANSION JOINT SPACER STRIP

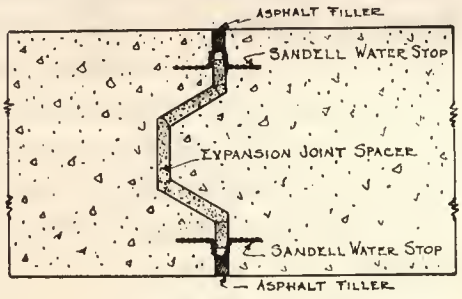
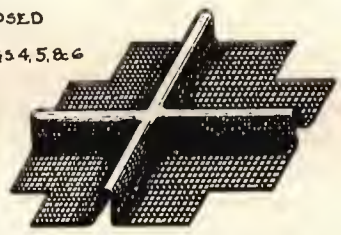


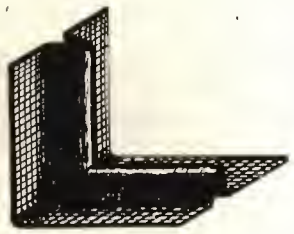
FIG 5

VERTICAL WALL SECTION USING TWO WATER STOPS

PREFORMED UNITS

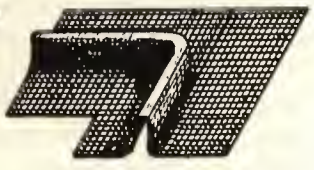


RIGHT ANGLED CROSSOVER



90 DEGREE HORIZONTAL & VERTICAL

90 DEGREE TEE



90 DEGREE CORNER

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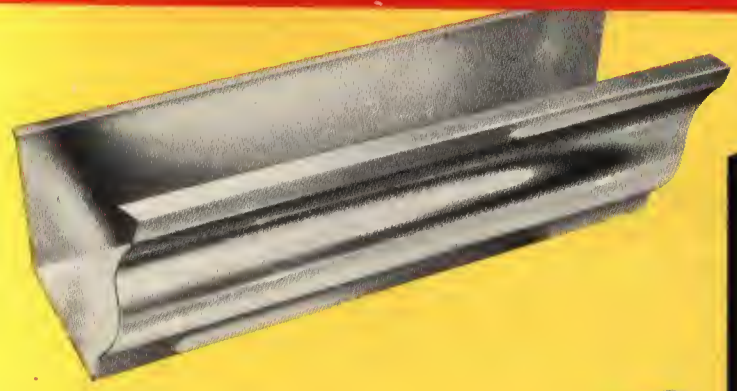
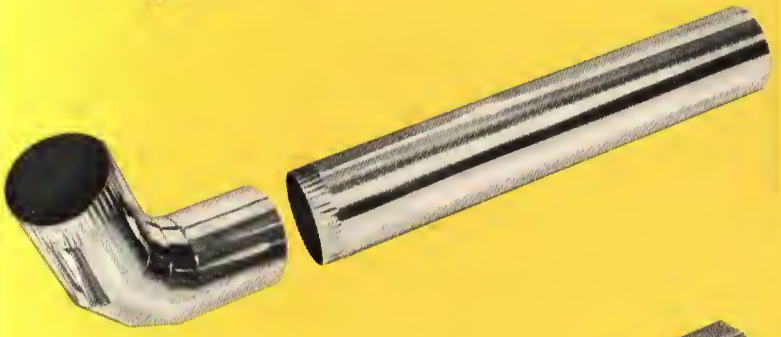
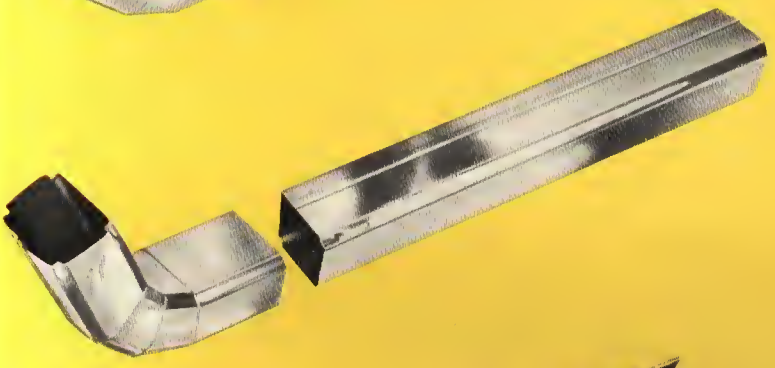
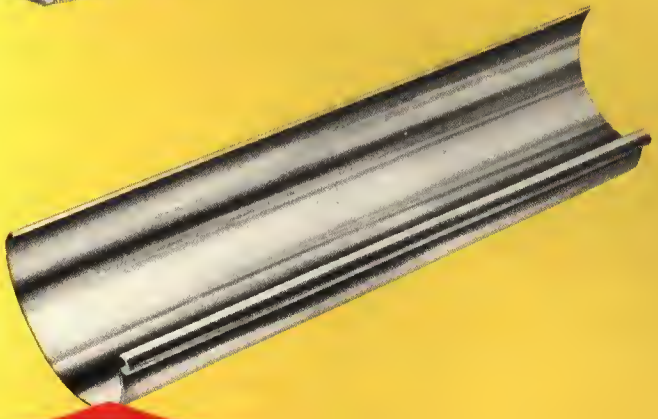
5

Stainless Steel









FOR ROOF DRAINAGE SYSTEMS

- CONDUCTOR PIPE
- GUTTER
- DOWNSPOUT
- ACCESSORIES
- FLASHING
- RIDGE ROLL

SHARONSTEEL

SHARON STEEL CORPORATION

Sharon Pennsylvania

how to design and specify SHARONSTEEL

When a home builder specifies his roof drainage system to be made of Sharon Stainless Steel, he seeks the same built-in quality in gutters, downspouting, flashing and accessories that he enjoys in his automobile, refrigerator, cutlery and all other "made of steel" articles he depends upon for long service and enduring style.

STRENGTH TO DO THE JOB

Roof drainage systems of Sharon Stainless Steel Type 301 can withstand heavier accumulations of ice, snow and air borne debris without sagging. This superior strength is best measured in "yield" terms, or that load which the material will sustain without permanent deformation. The following table shows average yield strength of the more common materials used on roof drainage systems. (Note the almost double superiority of Sharon Stainless.)

Material	Yield Strength per sq. in.
Sharon Stainless Type 301	40,000
Galvanized Iron	28,000
Cold Rolled Copper or Strip (5-6% cold reduced)	20,000
Soft Copper Sheet or Strip	10,000

ABRASION RESISTANCE

Roof gravel, dirt, leaves or other abrasive debris washing over softer metals often wear elbows and valleys, resulting in leakage and system failure. The dense, hard surface of Sharon Stainless resists this abrasive action.

CORROSION RESISTANCE

Sharon Stainless Type 301 is virtually immune to atmospheric corrosion. Stainless Steel resists the galvanic action caused by leaves or other debris. Stainless is a solid homogenous metal. It will not chip, peel, or bleed off to stain surrounding areas. Patina type corrosion will *not* form on stainless.

USE SHARON STAINLESS STEEL FOR ROOF

roof drainage systems . . .

EXPANSION CHARACTERISTICS

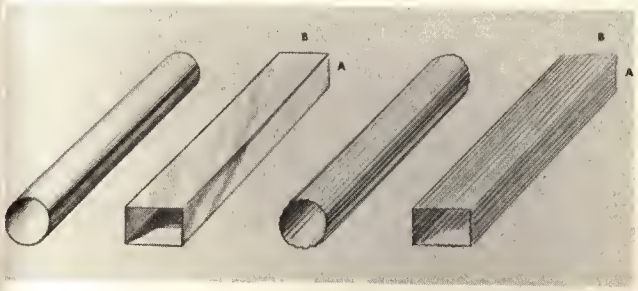
Thermal stresses caused by severe temperature changes have little effect on Sharon Stainless Steel, Type 301. Investigations indicate that soft copper may fail in box gutter linings because of its inability to properly transmit thermal stresses to expansion joints. Tests prove that only extensive reinforcement, or substitution of costly heavy weight cold rolled copper will make a copper system acceptably immune to this failure.

Copper bleeds and corrodes, causing discoloration of the building.

Stainless steel — for its permanence and beauty — was the material chosen for the Chrysler building.

RECOMMENDED STANDARD DIMENSIONS OF STAINLESS STEEL RECTANGULAR AND ROUND DOWNSPOUTING

List Size	Length	Corrug.	Plain	Side A	Side B
(Rectangular)					
2″ (1 x 2)	10′	yes	yes	1⅞″	2⅜″
3″ (2 x 3)	10′	yes	yes	2¼″	3″
4″ (3 x 4)	10′	yes	yes	2¾″	4-3/16″
5″ (4 x 5)	10′	yes	yes	3⅝″	5-1/6″
(Round)					
2″	10′	yes	yes	.....	.....
3″	10′	yes	yes	.....	.....
4″	10′	yes	yes	.....	.....
5″	10′	yes	yes	.....	.....
6″	10′	yes	yes	.....	.....



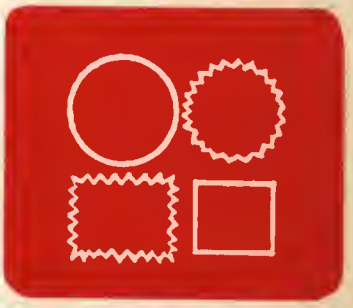
RECOMMENDED STANDARD FORMS

Gutters:

Standard types include single bead lap joint, single bead slip joint (size 4″ to 10″ — 10′ lengths); double bead slip joint may be ordered to specification. For complete details on gutters, refer to page 8.

Downspouts:

Four types of Sharon Stainless downspouts are recommended: round plain, round corrugated, rectangular plain and rectangular corrugated, cut to 10′ length. Longer sections may be fabricated to specification.



Elbows and Shoes:

Elbows and shoes of Sharon stainless—2″, 3″, 4″, 5″ and 6″ round or rectangular downspouts, either plain or corrugated. Elbows —45°, 60°, and 90° angles: Shoes—75° angles only.

Downspout Heads:

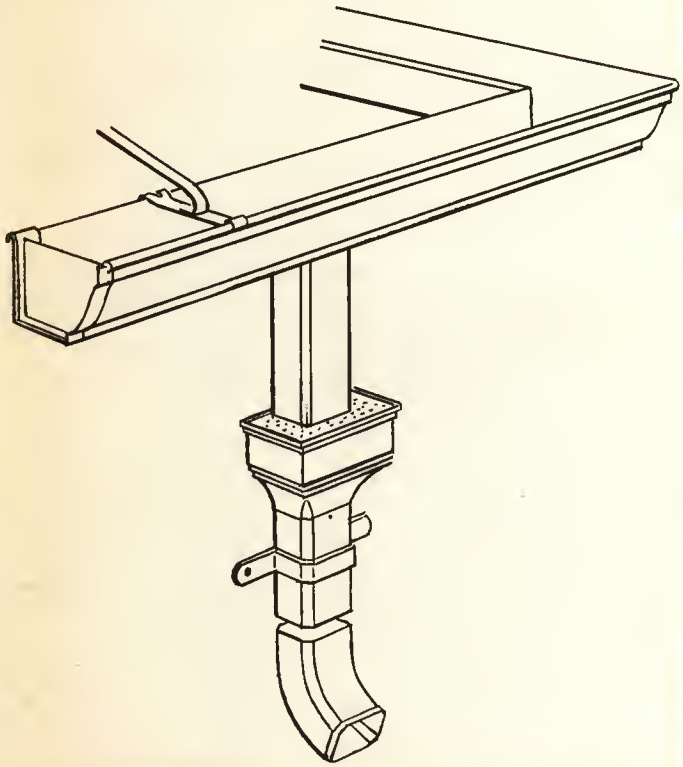
A line of standard design downspout heads is usually available from your fabricator. Special leader heads may be manufactured to suit architect or customer.

Mitres and Ends:

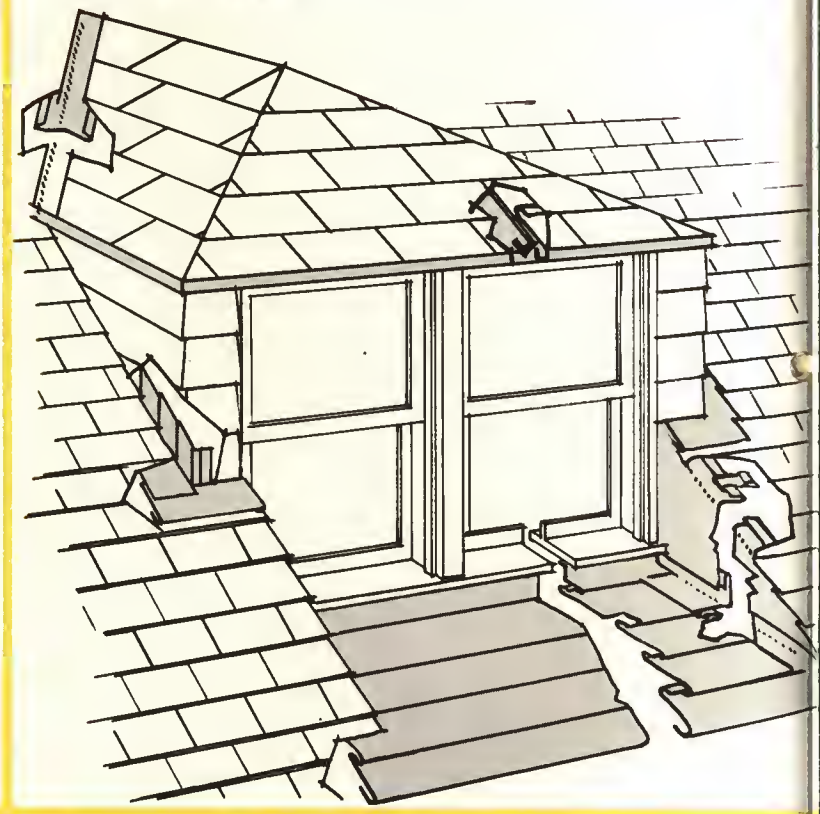
Mitres and ends are usually available to fit all standard round and rectangular gutters. An adequate flange is allowed for soldering to gutters. End caps (lap and slip joint type) are supplied for most single and double bead gutters. "Specials" may be made to order.

typical specification details for

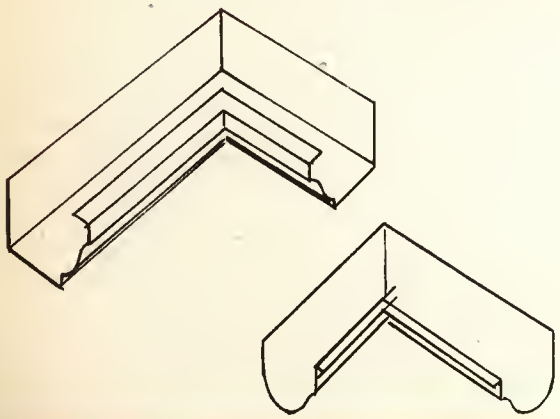
STAINLESS STEEL GUTTER, LEADER AND ACCESSORIES



STAINLESS STEEL FLASHING for Dormer Window and Recess



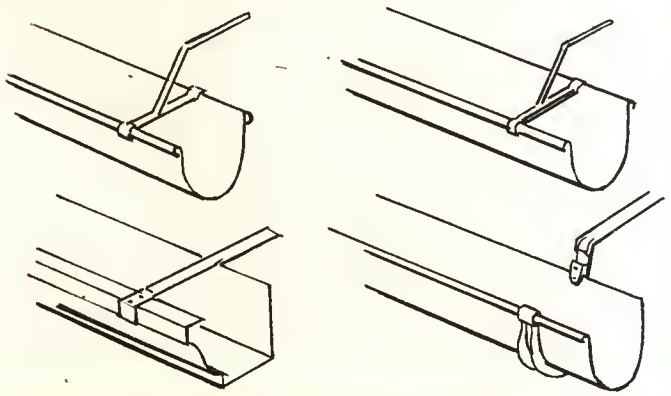
STAINLESS STEEL MITRES (for Inside and Outside Gutters)



STAINLESS STEEL STRAP HANGERS

For single and double bead gutters—Single bead gutters should have strap hanger that helps support gutter.

Spacing or hangers should not be over 36".



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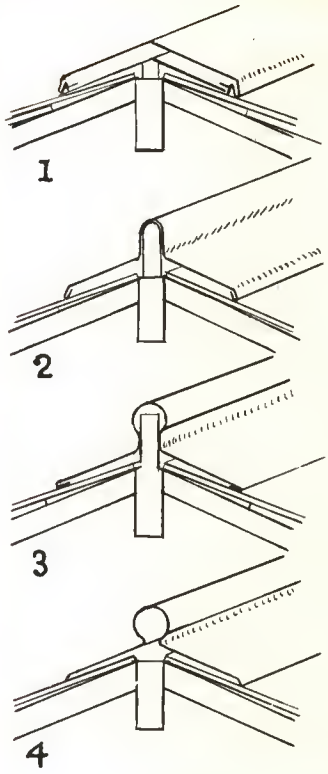
SHARONSTEEL *roof drainage systems .*



STAINLESS STEEL RIDGE ROLLS

Fig. 1 shows low ridge-flashing without a projection roll. Flashing is nailed to ridge boards with stainless steel nails. Flashing 1″ extension is bent down to roof to shed water and cover nail heads.

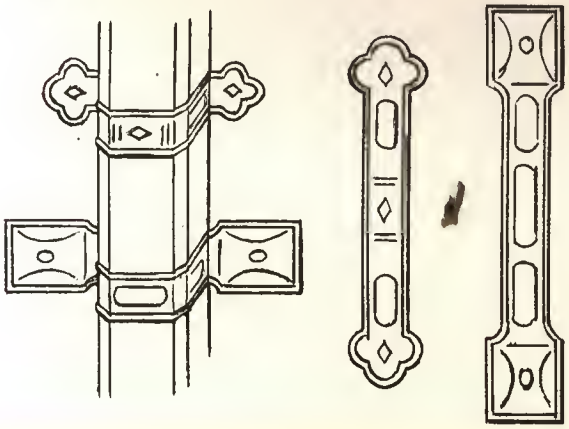
Fig. 2 requires specially shaped ridge-piece for flashing roll. Roll is secured by screws in side apron, if more than 4″ wide, should be stiffened against wind by 3/16″ x 1″ stainless steel clamps, or straps, about 30″ apart.

Fig. 3 does not require a special ridge-piece. An excellent way of securing a large ridge roll as board keeps metal in place and stainless steel screws can be fastened to ridge-board, making it unnecessary to drill shingles or slates.

Fig. 4 shows ridge roll used without ridge board. Roll is fastened with stainless steel screws set through washers — with over-sized holes — into holes drilled in the shingles.

STAINLESS STEEL LEADER STRAPS

Stainless Steel Leader Straps shown as supplied and as applied to leader. Same straps can be used with round and corrugated leaders.



Typical Stainless steel roof drainage systems used in home construction.

DRAINAGE SYSTEMS

installation tips for SHARONSTEEL

Forming Stainless Steel Box Gutters

Roll Forming Stainless Steel

1. Protect stainless steel during construction from damage that might result from walking on it, leaning ladders against it, etc.

2. Make the same expansion and contraction allowances as for copper or galvanized iron, less than for aluminum or duralumin.

3. See that all surfaces are flush and that all nail heads are set. Install gutter, roofing, flashing, etc., on dry felt, paper or other suitable material.

4. Protect the surface at all times to prevent scratches or "dings." Keep all work surfaces and tools as clean as possible.

5. Use stainless steel hangers, cleats, nails, hooks and strainers wherever

USE SHARON STAINLESS STEEL FOR ROOF

possible. Should stainless steel fittings not be available, lead-covered bronze will give proper color effect and will prevent contact corrosion. *Do not use ordinary steel nails or fittings.*

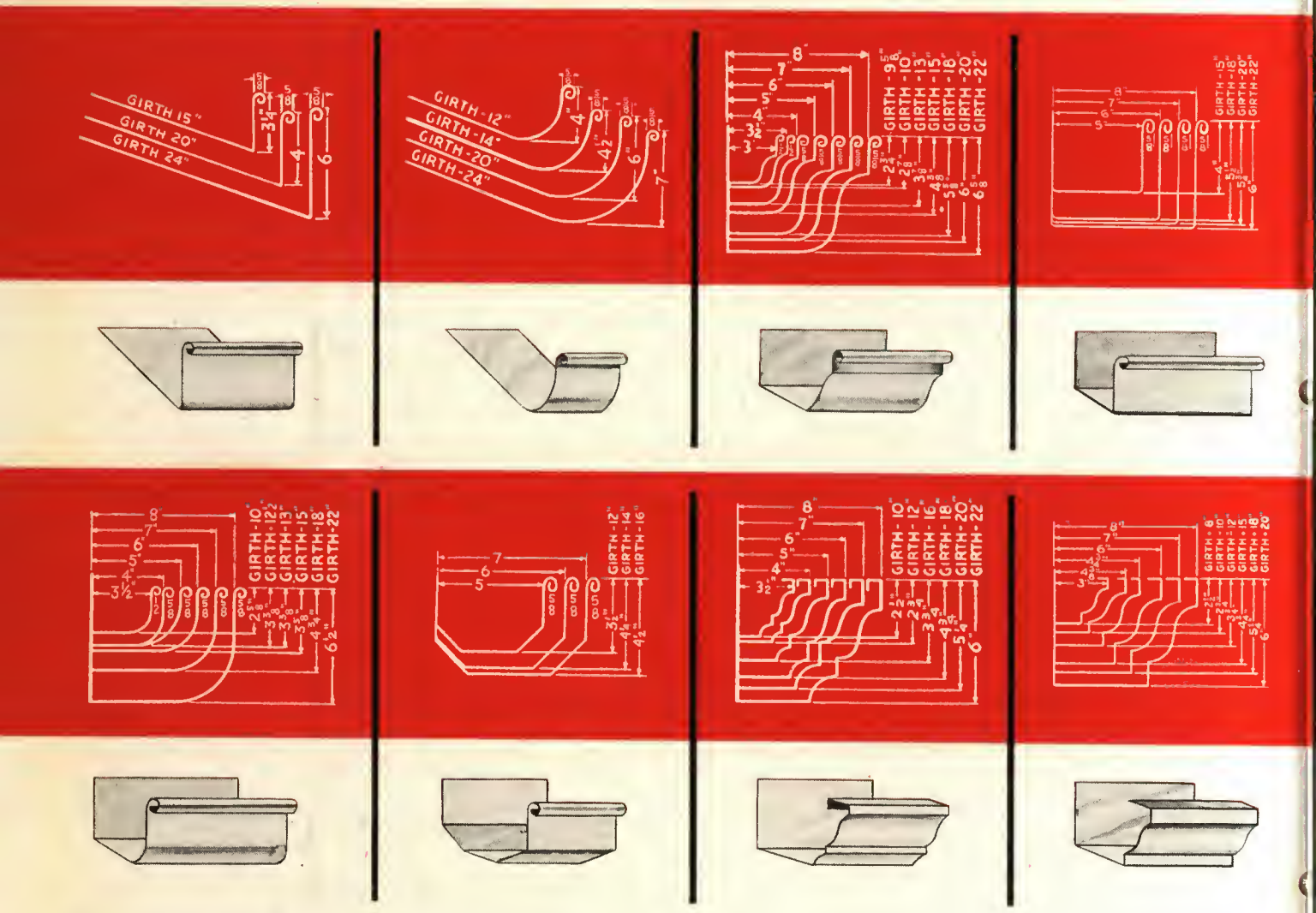
6. Solder with a high-grade solder having a tin-content of 50 to 70%. Flux with special stainless steel flux, raw hydrochloric acid, or a flux containing one-half uncut muriatic acid and one-half cut acid. Best results are obtained by using a soldering iron that is a bit hotter than that used on galvanized iron. All traces of acid or flux *must* be removed immediately after soldering.

7. After installation soldering, wash all joints with a washing soda solution and rinse thoroughly with clean water.

8. Upon completion of the job, clean the whole installation, being careful to remove all traces of dirt or flux. Use a non-scouring cleansing agent and *fibre* brushes. *Do not use steel brushes* other than stainless steel. Proper cleansing after installation may mean the difference between a satisfactory or an unsatisfactory job. Rinse thoroughly with clean water to remove all traces of cleansing agent.

Soldering Stainless Steel Downspout

STOCK GUTTER STYLES AND SIZES



HOW TO ORDER SHARON STAINLESS

Care should always be taken to specify the correct type of Sharon Stainless. Architects and builders should instruct fabricators or sheet metal shops in this detail. The following may be used as a simple ordering rule:

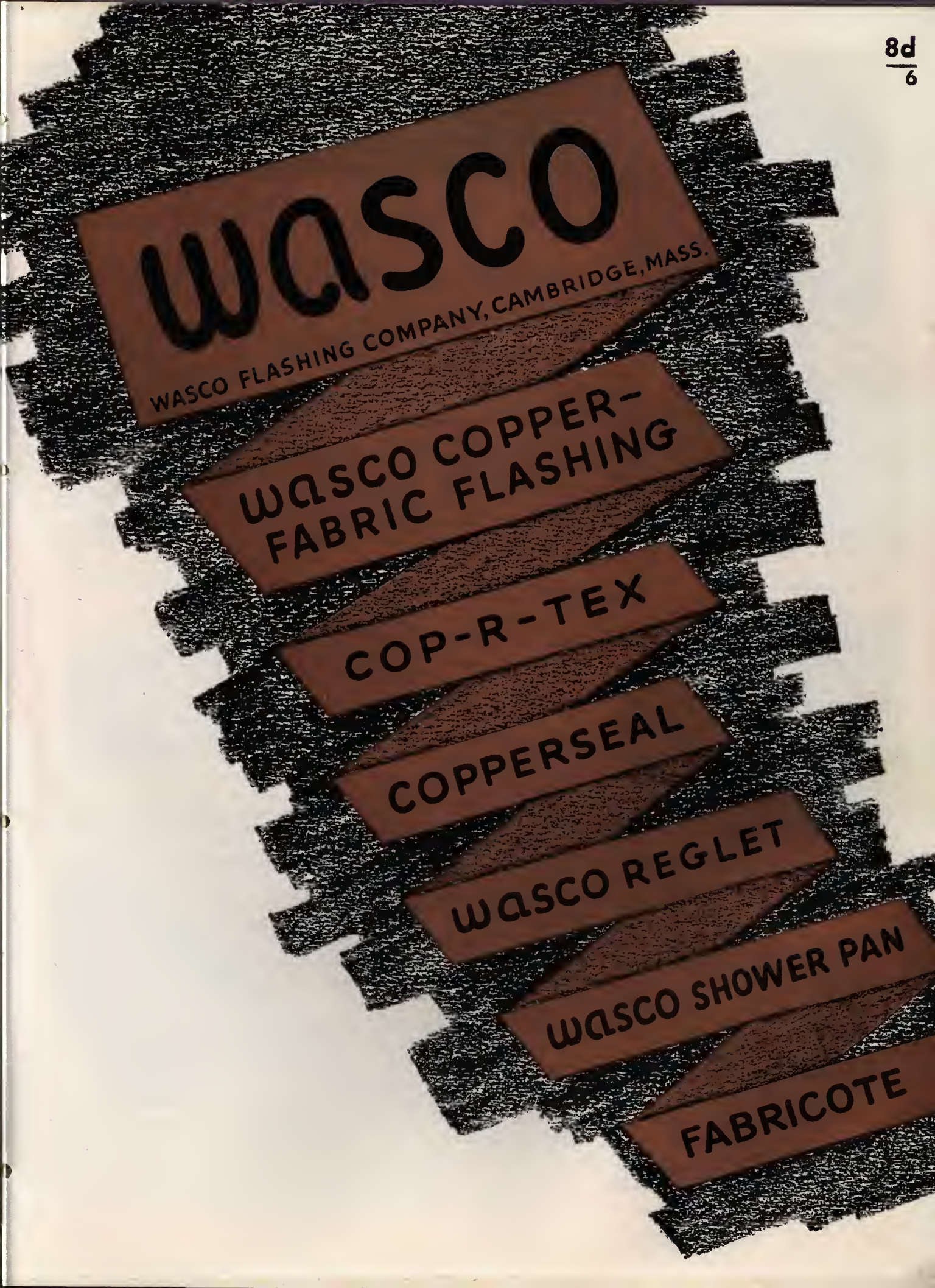
"All sheet metal work for roof drainage systems shall be of .015" thick, type 301, cold rolled Sharon stainless steel in a soft temper."

For full details and cost comparisons of Sharon Stainless systems, fill out the attached reply card and drop it into today's mail. There is no obligation and the facts will prove that you will be ahead with a roof drainage system made of Sharon Stainless Steel.

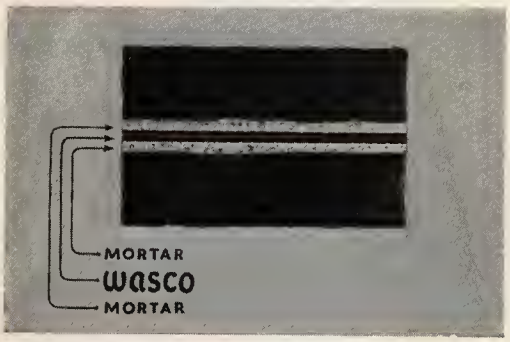
SHARON STEEL CORPORATION *Sharon, Pennsylvania*

PRODUCTS OF SHARON STEEL CORPORATION AND SUBSIDIARIES: THE NILES ROLLING MILL COMPANY, NILES, OHIO; DETROIT TUBE AND STEEL COMPANY, DETROIT, MICHIGAN; BRAINARD STEEL COMPANY, WARREN, OHIO; SHARONSTEEL PRODUCTS COMPANY, DETROIT, MICHIGAN, AND FARRELL, PENNSYLVANIA; CARPENTERTOWN COAL & COKE CO., MT. PLEASANT, PENNA.; FAIRMOUNT COKE WORKS, FAIRMOUNT, W. VA.; MORGANTOWN COKE WORKS, MORGANTOWN, W. VA. Hot and Cold Rolled Stainless Strip Steel—Alloy Strip Steel—High Carbon Strip Steel—Galvanite Special Coated Products—Cooperage Hoop—Detroit Seamless Steel Tubing—Seamless Steel Tubing in Alloy and Carbon Grades for Mechanical, Pressure and Aircraft Applications—Electrical Steel Sheets—Hot Rolled Annealed and Deoxidized Sheets—Galvanized Sheets—Enameling Grade Steel—Welded Tubing—Galvanized and Fabricated Steel Strip—Steel Strapping, Tools and Accessories.

DISTRICT SALES OFFICES: Chicago, Ill., Cincinnati, O., Cleveland, O., Dayton, O., Detroit, Mich., Indianapolis, Ind., Milwaukee, Wis., New York, N. Y., Philadelphia, Pa., Rochester, N. Y., Los Angeles, Calif., San Francisco, Calif., St. Louis, Mo., Montreal, Que., Toronto, Ont.


wasco
WASCO FLASHING COMPANY, CAMBRIDGE, MASS.
WASCO COPPER-FABRIC FLASHING
COP-R-TEX
COPPERSEAL
WASCO REGLET
WASCO SHOWER PAN
FABRICOTE

FLEXIBLE: Wasco is flexible, easily conforms to any desired shape.



BONDS: The lath-like surface of Wasco forms a tight bond with mortar.

PERMANENT: Wasco affords all the time-defying characteristics of copper protected and insulated between asphalt-impregnated fabric.

PACKING: Shipped in rolls.

wasco COPPER-FABRIC FLASHING

The Flashing that Combines Copper and Fabric in 1 Material

Wasco Copper-Fabric Flashing affords the unequalled impermeability of heavy sheet copper, plus its age-resistance, in a readily workable and very economical form for all flashing purposes. Wasco is delivered to you cut to exact sizes specified in any even width up to 36 inches and in any length desired. There is no waste. Wasco is flexible, far more easily shaped than ordinary copper flashing. The corrugated surface of the fabric provides a lath-like construction which makes a tight and impenetrable bond with mortar and allows for expansion and contraction. Where splicing is necessary, Wasco gives six interlocking layers to assure a watertight joint. Wasco is actually superior to plain copper, because in Wasco the electro-sheet copper is completely protected on both sides by the two layers of mastic-impregnated fabric which act as an insulator and prevent electrolysis.

MODEL SPECIFICATIONS

MATERIALS—Shall be Wasco Copper-Fabric Flashing, consisting of a full sheet of electro-sheet copper weighing (specify whether 2, 3, 5 or 7 ounce copper) per square foot, bonded to and between two layers of a coarsely woven asphalt saturated cotton fabric by means of asphalt mastic, and the entire assemblage grooved by a series of grooves running the full width of the sheet.

APPLICATION—On all horizontal masonry surfaces the flashing shall be laid in a fresh bed of mortar or a trowel coat of mastic, while other surfaces receiving the flashing shall be thoroughly dry, free from loose materials, reasonably smooth and shall be sufficiently spotted with Plastic Cement to hold it in place until the masonry is set. Top surface of flashing should receive a brush coat of mastic. Joints shall be made by splicing—that is, splitting the two top plies, lapping four inches and coating the contacting surfaces with Plastic Cement.

SPANDRELS—Flashing shall start from the outside toe of the shelf angle, go up the face of the beam and then through the wall turning up on the inside not less than 2".

COPINGS—Flashing shall be set into a full bed of fresh mortar above and below and shall come within ¼" of the exterior and interior faces of the wall.

THRU-WALL—Flashing shall start ¼" from the outside face of the wall, then through the wall, turning up at the inside not less than 2".

HEADS AND SILLS—Flashing shall start ¼" from outside face of wall then through the wall turning up at the inside not less than 2". Head flashings shall be carried 6" beyond both ends of the steel lintel, and both these and the sill flashings shall be turned up at the sides forming a pan.

COP-R-TEX by WASCO

FOR ALL CONCEALED FLASHING

Cop-R-Tex is pure electro-sheet copper bonded to and protected by a layer of reinforced, waterproof Kraft paper creped for maximum pliancy.

Use Cop-R-Tex for all concealed flashing such as heads and sills, between floors and under linoleum for dampproofing, between boarding and siding, on roofs as a base for slate, tile, shingles, etc., for lining attic walls and ceilings to prevent heat loss, and at grade construction as an effective guard against termites. Use Cop-R-Tex for all concealed flashing where water seepage may occur.

Cop-R-Tex is pure electro-sheet copper weighing 1, 2 or 3 ounces per square foot, bonded on one side with re-inforced, waterproof Kraft paper which has been creped to allow for expansion and contraction and to facilitate forming and shaping. It possesses all the protective properties of heavy sheet copper yet far more economical and more readily formed.

Cop-R-Tex is available in rolls 60 inches wide by 60 feet long, slit to any desired width at no extra cost.

COPPERSEAL by WASCO

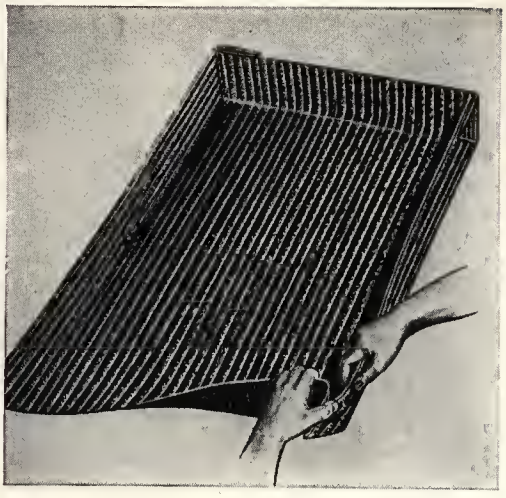
ALL-PURPOSE COATED COPPER FLASHING

Copperseal is pure electro-sheet copper which has been coated on both sides with a tough, bituminous coating that effectively protects the copper from all physical and chemical influences and insulates it from electrolysis.

Copperseal is the ideal all-purpose flashing wherever all the advantages of heavy sheet copper are desired, yet where price is a factor. Copperseal is pure electro-sheet copper which has been coated on both sides with a tough, resilient layer of bituminous composition. Thus while affording the lasting qualities and the non-porous properties of copper, the chemically inert Copperseal coating provides complete protection to the copper from physical damage, chemical reaction and electrolysis. Whenever damaged, Copperseal tends to seal itself, a particularly important feature in all flashing applications where it is necessary to pierce the flashing. Copperseal is available in 2, 3, 5 or 7 ounce copper content per square foot, in rolls 60 inches wide and 25 feet long.

wasco

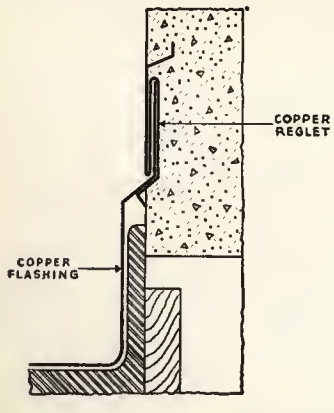
SHOWER PAN



NO CUTTING NO WASTE NO SOLDERING

Wasco Shower Pans come to you in one continuous piece, cut to your exact specifications. There is nothing to cut. There is no waste. There is no soldering. Merely turn up the sides, crease the corners, cut the drain hole, and you have a superior Shower Pan which is easily and quickly installed.

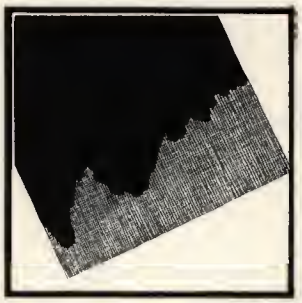
wasco REGLET



SPECIFICATIONS—Furnish and install over all exterior door and window openings in all concrete spandrels at a point not more than 1" above top of vertical leg of angle Wasco Copper Reglet. This contractor shall attach Wasco Copper Reglet to the concrete forms of spandrel beams at the time these are erected by others, and shall cooperate with contractor for this work, installing reglet before forms are put into place. Reglet shall be attached to inside of wood forms with copper nails. Reglet shall extend 4" beyond each end of opening and shall be made of 16 ounce copper. Vertical slot in reglet to be 1⅛" deep and with 1/16" opening, which provides friction locking when copper counter flashing is inserted.

FABRICOTE by wasco

THE ALL-PURPOSE WATERPROOFING FABRIC



Fabricote is a rugged cotton fabric that is saturated and heavily coated on both sides with a tough, resilient layer of special bituminous composition. Because of its unusual lasting and protective qualities, it is the ideal all-purpose waterproof membrane for preventing water seepage in many kinds of construction work. Flexible, easily shaped, economical. Use Fabricote for spandrel flashings, general waterproofing purposes, and to protect metals from corrosion, etc. Fabricote is available in rolls 36" wide and 50 ft. long.

WASCO REPRESENTATIVES

ATLANTA, GA. — L. J. Bombardier
152 Nassau, N. W. — Phone WA. 3904

BILLINGS, MONT. — Logan-Leytham Co.
1920 Fourth Avenue, N. — Phone 8055

BUFFALO, N. Y. — Robert B. Devine
3390 Bailey Avenue — Phone Pa. 1361

CHARLOTTE, N. C. — R. G. Ross & Co.
415 Clement Ave. — Phone 4-7294

CHICAGO, ILL. — Harold A. Schweig & Co.
612 N. Michigan Ave. — Phone De. 7-7783

CINCINNATI, OHIO — Wm. S. Ibold & Co.
626 Broadway — Phone Ch. 2440 — Pa. 3951

CLEVELAND, OHIO — Harry A. DuBroy
1900 Euclid Bldg. — Phone Ch. 3179

DETROIT, MICH. — Ray T. Lyons Co.
2457 Woodward Ave. — Phone Cherry 7418

FORT SMITH, ARK. — Mayo Building Spec. Co.
711 South A Street — Phone 8036

KANSAS CITY, MO. — A. C. Terrell Co.
212 Produce Exchange Bldg. — Phone Harrison 1776

KNOXVILLE, TENN. — Chandler & Co., Inc.
428 W. Depot Ave. — Phone 3-6141

*LOS ANGELES, CALIF. — A. E. Barnes, Jr.
672 So. Lafayette Park Place — Phone Exposition 0146

NASHVILLE, TENN. — Alvin O. Carroll
2229 Bandywood Rd. — Phone 9-0615

NEW ORLEANS, LA. — A. B. Sandoz
429 Carondelet St. — Phone Reymond 2384

NEW YORK, N. Y. — Kenneth Hargreaves & Co.
155 E. 42nd St. — Phone Murray Hill 9-4957

PHILADELPHIA, PA. — M. G. Silverman
1419 Robbins Ave. — Phone DE 6-5138

RICHMOND, VA. — B. A. Bowers
507 E. Franklin St. — Phone 2-3438

*SAN FRANCISCO, CALIF. — Pacific Sales and Equipment Co.
1245 22nd St. — Phone Atwater 2-7055

*SEATTLE, WASH. — J. A. Ritchie
4104 Arcade Bldg. — Phone Main 6626

SIOUX CITY, IOWA — Builders Wholesale Supply Co.
208 Court St. — Phone 8-5588

ST. LOUIS, MO. — August Court Co.
498 Arcade Bldg. — Chestnut 1622

**Includes Wasco Warehouse Facilities*

WASCO FLASHING COMPANY
Fawcett Street
Cambridge, Massachusetts

waterproofing and dampproofing

section 9

materials and treatments a

building paper c

ADENSITE

1922

1949

PRODUCTS

Adensite Liquid Integral Water-repellent and Hardener

Adaflint Applied Hardener

Clerseal Colorless Masonry Coating

PurTone Cement Colors for Colored Floors

●

ADENSITE CO., INC.
37-19 23rd St.
Long Island City 1, N. Y.

SPECIFICATIONS

For Hard Water-resisting Concrete

ADENSITE

liquid integral water-repellent and hardener

lubricates — cures — densifies

USES

Water-repellent—Concrete Walls and Floors below grade in mass concrete . . . Cement Plaster Coat . . . Mortar for Brick Masonry . . . Stucco.

Floor Hardener — Hardening and Non-dusting cement floors.

Damp-resisting—Brick Masonry . . . Concrete Blocks . . . Cinder Blocks . . . Stucco.

Non-Freeze—Keeps cement active at low temperatures and prevents freezing at 18° F.

High Early Strength—Adensite gauge roads, walks and floors will withstand heavy trucking 10 hours after laying.

Authoritative Tests—Upon request, we shall be pleased to furnish the architect with authoritative test data on Adensite, compiled from testing laboratory results and research work carried out at the U. S. Bureau of Standards for the A.S.T.M.

Guarantee—Adensite is guaranteed to produce positive results by the manufacturers, the ADENSITE CO., INC.

Service—Our field men visit construction operations while Adensite is in use.

ADENSITE SPECIFICATIONS

Water-resisting Mass Concrete—All concrete for Foundation, Walls, Areas, Pits and other sections below grade which require a water-repellent shall be gauged with Adensite in the proportion of 1½ gallons to the cubic yard of concrete.

Water-resisting Floor Finish—Shall be 1 inch in thickness composed of 1 part portland cement, 2 parts sand gauged with Adensite in the proportion of 1 gallon to 100 square feet.

Water-resisting Plaster—Wall coating to be applied in 2 coats ⅜ inch thick composed of 1 part cement, 2 parts sand gauged with Adensite in the proportion of 1 gallon to 120 square feet properly coved and bonded to the floor.

Water-resisting Brick Masonry—The mortar to all brick masonry shall be composed of one part Portland cement and three parts clean sand, gauged with water containing Adensite. Adensite renders the mortar fat and workable, eliminating dragging and riding of brick. Adensite used in regular proportion lowers freezing point of mortar to 18° F.

Water-resisting Portland Cement Stucco—The mix shall be composed of one part Portland cement and three parts clean sand gauged with water to which Adensite has been added. On Masonry Walls, the stucco shall be applied in three coats, each coat not less than one-quarter inch or more than three-eighths inch in thickness. The whole finishing three-quarter inch thick beyond the normal masonry line. On Lath, the stucco shall be applied in three coats, each coat not less than one-quarter inch or more than three-eighths inch in thickness. The whole finishing three-quarter inch over the lath face.

Floor Hardening—For the treatment of floors subject to heavy wear, water or oil conditions. Upon the plain concrete floor slabs shall be laid a 1-inch topping of one part cement and two parts clean sand gauged with Adensite in the proportion of 1 gallon to 100 square feet.

The Gauging Liquid—Gauging Liquid may be prepared by putting four gallons of Adensite in a fifty-two gallon barrel and adding water (no stirring required). The above applies to Mass Concrete, Cement Plaster, Portland Cement Stucco, and Floor Work. For Brick Masonry, put three gallons of Adensite into a fifty gallon barrel and add water. If the water is fed direct to the mixer, the water should be let in drum and one quart of Adensite added for each bag of cement in the mix before the dry mix is dumped in. For every one bag batch use between three and four gallons of the prepared liquid. The proportion of Adensite to water is averagely 1 gal. Adensite to 15 gallons water. Much less water is required where Adensite is employed than where plain water only is used. Adensite increases the flowability of mortar 14%.

Joints Between Various Pourings—Shall be thoroughly grouted with Adensite Grout.

Adensite Grout—Add one part of Adensite to three parts water and enough cement to give mixture a creamy consistency.

Protection of Green Work—To protect green work against action of water the pump shall be kept in operation twenty-four hours after pouring or troweling of work.

WITH ADENSITE YOU DO IT RIGHT

For Bonding New to Old Concrete—All surfaces before application of new work shall be thoroughly roughed, cleaned and dampened with Adensite Grout to insure perfect bond. For Floors, when slab is over forty-eight hours old, before topping is stretched, it shall be given a coating of Adensite Grout. When slab is over seven days old, before topping is stretched, it shall be roughened with pick or chisel, cleaned and given a coat of Adensite Grout.

DAMP-RESISTING

Coatings for Brick Masonry, Concrete Blocks, Cinder Blocks and Stucco.

Stir ½ bag of Portland Cement into a solution composed of one gallon Adensite and three gallons water. Apply with a brush in two coats. One coat will cover 600 square feet. Adensite Coating, becoming part of the wall and preventing the passage of moisture where only dampness and moisture are to be encountered. A beautiful white effect can be obtained by using a white Portland cement (unwaterproofed) instead of a gray Portland.

To Prevent Freezing—Adensite used in regular proportion for water-resisting—one quart to one bag of cement will prevent freezing at 18° F. Important—Every admixture that prevents freezing is not good for concrete.

Make Sure With Adensite—Adensite strengthens concrete and is harmless to reinforcing.

HOTSHOTS

Hotshots for stopping a leak coming directly through a wall can be made with cement and pure Adensite, worked in the hands like putty. When chemical heat becomes apparent (in about 1 or 2 minutes) plug leak and hold until set (about 3 minutes).

CURING

Adensite cures concrete. Tests at U. S. Bureau of Standards show as high strength in Adensite gauged specimens under out-door curing as plain water gauged specimens under damp storage curing.

COLORED CEMENT FLOORS

made with PurTone color and Adensite

PurTone color is a pure mineral product in powdered form that combines properly with Portland cement. Adensite is a liquid integral hardener that renders a floor adamant-like and free of dust, rut or flake. It intensifies the color value.

SPECIFICATIONS UPON REQUEST.

CLERSEAL

the colorless liquid for masonry walls above grade

Clerseal stops the leakage of moisture through masonry walls above grade, without changing the appearance of the surface.

Brick masonry treated with Clerseal will not develop efflorescence.

Clerseal penetrates the masonry by changing the capillary attraction in brick, stone and mortar so that water is actively repelled.

Clerseal becomes a part of the masonry, without clogging the pores: leaves no outside skin to break, wear through or disintegrate.

There is no paraffin or wax in Clerseal.

Brick walls treated with Clerseal are sealed against leakage from heavy storms.

Clerseal prevents frost cracks and unsightly blotches in stucco.

Clerseal can be applied with a brush or spray.

ADAFLINT

hardens old and new concrete floors

Adaflint, a highly concentrated surface hardener, is composed of mineral salts in crystal form which dissolve readily in cold water.

Adaflint finish is not affected by weather conditions and it is as efficient outdoors as under cover.

SPECIFICATIONS UPON REQUEST.

SERVING THE INDUSTRY FOR OVER A QUARTER OF A CENTURY

ADENSITE CO., INC.

The Finest Buildings in the World

New York Central Bldg., N.Y.C.

Marshall Field Bldg., N.Y.C.

Mayflower Hotel, Wash., D.C.

Independence Hall, Philadelphia

National Airport, Washington, D.C.

Bermudiana Hotel, Hamilton, Bermuda

Subway Structure, Oslo, Norway

Passaic County Sanatarium, Passaic, N.J.

New York Life Insurance Building, N.Y.C.

Robert Simpson Co. Ltd. Dept. Store, Toronto

Standard Oil Hydrogenation Plant, Bayway, N.J.

Brooklyn and Philadelphia Navy Yards

ADENSITE

is invariably used where the highest standards are to be met

"ANTI-HYDRO"

FOR DURABLE CONCRETE

SPECIFY "GUARANTEE"

FOR DURABLE RESULTS

Five Year Maintenance Guarantee Furnished on Waterproof Concrete, Dampproof Masonry and Non-dusting Concrete Floor Surface at a Nominal Charge for Field Inspector During Installation of the Anti-Hydro.

See Page 3 for Suggested Copy of Guarantee Paragraph

PRODUCTS

ANTI-HYDRO
Liquid Durability Agent to Integrally Harden, Waterproof and Internally Cure Concrete and Mortars
Dampproofs Masonry Above Grade.

ARMORTOP
Applied Liquid Compound to Produce Hard and Non-dusting Concrete Floor Surface.

ARIDCLEAR
Transparent Dampproofing for Exposed Masonry Walls Above Grade.

AMURSEAL
Asphaltic Paint for Masonry Walls Below Grade and Stone Backing
Above Grade.

ARIDTITE
Asphaltic Liquid Bond for Interior of Masonry Walls Above Grade.

ANTI-HYDRO CALKING COMPOUND
For Calking Windows and Doors and for Pointing Masonry.

ACCELLO
Anti-freeze and Accelerator for Cement Mixtures.

ADMIXTURE
Admixture for Increasing Plasticity and Durability of Concrete.

ANTI-HYDRO WATERPROOFING CO.
265-277 BADGER AVENUE, NEWARK 8, N. J.

ANTI-HYDRO for Integral Waterproofing

"ANTI-HYDRO"
FOR DURABLE CONCRETE

General Description

"Anti-Hydro" is a liquid compound which reacts chemically with portland cement. "Anti-Hydro" causes a larger percentage of the cement to hydrate than possible with water alone, and speeds the curing of cement. The result is dense, hard, waterproof concrete or cement masonry of increased compressive and tensile strength, impervious to water, moisture, frost, oils, sugar solutions, alkalis or sea water and resistant to many acids.

Functions of Anti-Hydro

(1) Waterproofs concrete and mortar.
(2) Increases plasticity and workability.
(3) Produces durable concrete against weather.
(4) As a cement paint, dampproofs and decorates above grade.
(5) Increases and speeds compressive and tensile strength of mortars and concrete.
(6) Hardens, cures and makes non-dusting cement floor toppings and monolithic floor slabs.
(7) Prevents corrosion of steel reinforcing.
(8) Lowers the freezing point of concrete.
(9) Creates perfect bond between successive pourings of mortar or concrete.

Reports by Testing Laboratories

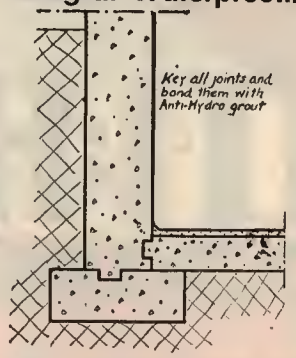
Reports of comparative tests made at the following laboratories are available:

National Bureau of Standards; California Institute of Technology; Case School of Applied Science; Columbia University; E. L. Conwell & Co.; Georgia School of Technology; David Kirkaldy Laboratories, London, England; Raymond G. Osborne Laboratories; H. C. Nutting Co.; Pittsburgh Testing Laboratories; University of Michigan; U. S. Engineers.

Hot Weather Caution: Cement finished and other concrete surfaces exposed to the direct rays of the sun at atmospheric temperatures above 85° F. should be finished promptly after placing. As an added precaution keep surface dampened for 24 hours.

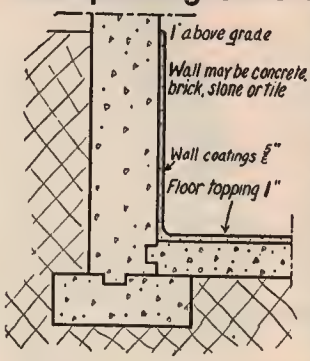
ANTI-HYDRO SPECIFICATIONS

Integral Waterproofing of Mass Concrete



For 1:2:4 concrete not over 5½ gals. of water per bag of cement shall be used for gauging and 1 qt. of "Anti-Hydro" shall be added to the mixture with or immediately after the water. Not less than 1½ gals. of "Anti-Hydro" shall be used per cubic yard of concrete. Concrete shall be well spaded when placed. All water must be pumped or drained away from the forms during pouring and for 24 hours thereafter. All joints shall be keyed and bonded with "Anti-Hydro" grout. All ties or spreaders shall be cut back, grouted and sealed with "Anti-Hydro" cement mortar. (See Bonding paragraph.)

Waterproofing Cement Wall Coatings



Below Grade—Wall coatings of cement plaster shall be of 1:2 mix and gauged by the addition to the water of 1 gal. of "Anti-Hydro" per barrel (4 bags) of cement. They shall be applied in 2 coats (scratch and finish), shall be ⅝ in. thick from the floor level to at least 1 ft. above grade, and shall be coved at base and bonded to floor and underlying masonry. (See Bonding paragraph.)

Above Grade—Wall coatings shall be mixed and bonded as above, and applied in a single coat, ⅜ in. thick. If followed by a gypsum, lime or insulating plaster or stucco coat, the waterproof coating shall be floated and scratched in two directions after initial set.

Bonding Old and New Concrete

To assure perfect bond to abutting masonry or concrete, all old surfaces shall be roughened thoroughly, cleaned, dampened and slushed. The slush shall be made by gradually stirring ½ to ⅔ bag of portland cement into a solution of 1 gal. of "Anti-Hydro" in 3 gals. of water until a thick, creamy consistency is obtained. After applying this slush to the prepared surface, the concrete or mortar shall be placed *while the slush is still wet.*

Internal Curing for Concrete

All concrete, unless otherwise noted on plans and specifications, shall be internally cured by the addition to the mix of "Anti-Hydro" manufactured by the Anti-Hydro Waterproofing Co. Not less than 1½ gals. of "Anti-Hydro" shall be added per cubic yard of concrete. Use not over 5½ gals. of water per bag of cement for proper consistency.

ANTI-HYDRO QUANTITIES FOR PURPOSES OF ESTIMATING

Kind of work	Quantity Anti-Hydro per bbl. cement	Covering capacity
Waterproofing in mass 1:2:4 concrete	1 gal.	⅔ cu. yd. concrete
Waterproofing ⅝-in. plaster coat	1 gal.	100 to 125 sq. ft.
Waterproofing 1-in. floor topping	1 gal.	100 to 80 sq. ft.
Waterproofing stucco ⅞ in.	1 gal.	100 sq. ft.
Dampproofing brickwork ⅜-in. joint 1:3	1 gal.	1000 brick or 50 cu. ft.
Dampproofing in job mixed cement paint	8 gal.	2400 sq. ft.—3 coats
Dampproofing in ⅜-in. cement plaster	1 gal.	150 sq. ft.
Hardening cement floor 1-in. topping	1 gal.	100 to 80 sq. ft.
Hardening Monolithic Concrete Floors	1 gal.	⅔ cu. yd. concrete
Curing Concrete Internally	1 gal.	⅔ cu. yd. concrete

ANTI-HYDRO TABLE TO PREVENT MORTAR AND CONCRETE FROM FREEZING

For cold weather work, where no waterproofing is required be sure that sand and aggregate are free of ice.
Proportions of "Anti-Hydro" and water at outside temperatures of

40° to 28° F. use 1 part "Anti-Hydro" with 15 parts of water
28° to 25° F. use 1 part "Anti-Hydro" with 12 parts of water
25° to 15° F. use 1 part "Anti-Hydro" with 10 parts of water
15° F. or less mechanical heat is necessary

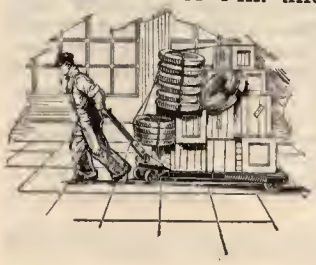
ANTI-HYDRO WATERPROOFING CO.

ANTI-HYDRO SPECIFICATIONS

Hardening, Waterproofing and Internally Curing Concrete Floors

For Monolithic Concrete Floor Slabs—All concrete floor slabs which are not to receive cement topping, shall be hardened, waterproofed, internally cured and rendered non-dusting by the addition to the concrete mix of not less than 1½ gals of "Anti-Hydro" per cubic yard of concrete. The concrete mix shall be 1:2:4; for slabs more than 4 in. thick, the stone or gravel shall not exceed 1 in. in diameter; for slabs less than 4 in. thick, the stone or gravel shall not exceed ½ in. in diameter. Finish with wood float and steel trowel; do not use driers for finish troweling.

For Granolithic Topping Over Concrete Slabs—1:2 mix shall be of 1-in. thickness and shall be hardened, internally cured and waterproofed by the addition of 1 gal. "Anti-Hydro" per barrel (4 bags) of cement. Proper consistency of the mortar will be obtained by gauging the mixture with not over 3½ gals. of water per bag of cement and 1 qt. of "Anti-Hydro" added with or immediately after the water. This procedure insures in one operation the double purpose of hardening and waterproofing cement surfaces exposed to wear. Unless the topping is laid while the slab is still green, the topping shall be bonded to underlying concrete according to bonding directions.



Colored Cement Floors—It frequently happens that for architectural purposes a cement floor with color other than gray is desired. Such colored, hard, non-dusting cement floors may be obtained if a dry mineral color is first uniformly mixed with the cement and then this combination of cement and color used instead of ordinary portland cement in the granolithic specifications listed above. In the case of a monolithic floor a considerable quantity of color would be needed. It is advisable therefore, to specify a granolithic finish wherever a colored floor is desired.

DAMPPROOF CEMENT PAINT

Recommended for dampproofing of masonry above grade; seals all pores and defective mortar joints. Always apply to a wet, clean surface. An inexpensive paint that completely covers and seals block walls where dampproof and decorative results are desired. Any color or desired effect may be specified.

Specification: To a solution of 1 gal. of "Anti-Hydro" and 3 gals. of water gradually stir from ½ to ⅔ bag of fresh portland cement and a half shovelful of screened sand to a creamy consistency. Apply in three coats, with a brush or spray, to the clean, damp masonry, free of whitewash or paint.

WATERPROOF CEMENT MASONRY MORTAR

Specification: The cement mortar used throughout all exterior masonry above grade, including parapets, shall be composed of 1 part portland cement and 3 parts clean, well graded sand, gauged with a solution of 1 part "Anti-Hydro" to each 15 parts of clean water. No lime is needed in this mortar. All brick or masonry units shall be thoroughly wet before laying (except in freezing weather) and bedded in mortar under the entire surface and laid with a shoved end joint. Push-lay all brick. The long and cross joints must be buttered through and each course must be thoroughly slushed. The back of the face brick, the abutting face of the back-up or the inside face of the exterior walls, as directed by the architect, shall be carefully pargeted with this same mortar. This pargeting must be carried completely around all header courses and shall, under no circumstances, be less than ⅜ in. in thickness.

CALKING LEAKS UNDER PRESSURE

"Anti-Hydro" undiluted, can be added to fresh portland cement to the consistency of a thick paste, for plugging leaks against water pressure in concrete or masonry. Ask for special instructions.

WATERPROOF CEMENT STUCCO

Stucco shall be 1 part portland cement, 3 parts clean, sharp sand, gauged with a solution of 1 part Anti-Hydro and 10 parts of water. Apply in 2 coats to a total thickness of ⅝ in. Float and scratch first coat in 2 directions. Float finish coat before texturing. For tinted finish add standard mineral color to the dry cement. For applied color follow Dampproof Cement Paint specifications.

MAINTENANCE GUARANTEES

GUARANTEE FOR *WATERPROOFING:—Contractor shall notify the Manufacturer not less than (3) working days before the said "Anti-Hydro" Waterproofing is to be installed in accordance with its specifications and the labor of installation shall be supervised by the Manufacturer. After such supervised installation is completed and final inspection made, the Manufacturer shall issue its guarantee for (5) years covering the **impermeability of the concrete in which its waterproofing has been used as above stated. Final payment shall not be made to the contractor until such a guarantee is delivered to the Architect.

GUARANTEE FOR HARD, NON-DUSTING CEMENT FLOORS—substitute *HARDENING OF CEMENT FLOORS—**hardening and non-dusting qualities of the floor. GUARANTEE FOR DAMPPROOFING OF CEMENT MASONRY MORTAR—substitute *DAMPPROOFING OF CEMENT MASONRY MORTAR—**dampproofing of masonry above grade.

OTHER ANTI-HYDRO PRODUCTS

ARMORTOP for Hardening and Non-dusting of Existing Concrete Floors

ARMORTOP
THE APPLIED HARDENER FOR CONCRETE

Description — Armortop is a liquid which, applied to new or old concrete surfaces, changes soft granular topping into a granite-like mass that resists most severe wear and abrasion without dusting. It saves removal and relaying old floors beginning to rut. The complete transformation can be accomplished in the evening after closing hours, by unskilled labor.

Armortop penetrates into the concrete and reacts chemically with the cement, binding the loose disintegrating particles of the dry concrete into a dense, hard mass without changing the appearance of the surface.

The covering capacity of Armortop varies with the density of the concrete. One gallon will completely harden from 70 to 150 sq. ft. of floor surface.

A concrete test slab showing the results of Armortop treatment will be sent on request.

Specifications — Upon the clean, dry floor apply a solution of 1 part Armortop and 1 part water in 2 or more coats, depending upon the density of the floor. Allow not less than 4 hours to elapse between applications.

How Shipped—Armortop is shipped in containers of 1 gal., 5 gal., 30 gal. and 55 gal.

ARIDCLEAR, a Transparent Dampproofing for Exterior Masonry Above Grade

ARIDCLEAR
THE TRANSPARENT DAMPPROOFING

Aridclear, a transparent dampproofing, prevents the penetration and absorption of rains into exposed masonry of brick, stone, stucco, or cement. One gallon dampproofs from 70 to 120 sq. ft.

Specifications—Cut out open joints and remove loose mortar. Point up with trowel using cement and sand mortar waterproofed with "Anti-Hydro." To the clean, dry masonry apply two saturating coats of Aridclear with brush or spray. Allow at least 12 hours between coats.

How Shipped—Aridclear is shipped in 1-gal., 5-gal., 30-gal., and 55-gal. containers.

AMURSEAL for Dampproofing Exterior Masonry Walls Below Grade

AMURSEAL
THE FOUNDATION COATING

Amurseal, a black liquid asphaltic paint, may be applied cold with spray or brush to the exterior of foundation walls or exposed concrete. Two coats give a solid, elastic film. Covering capacity approximately 80 sq. ft. per gallon, single coat; 50 sq. ft. per gallon, two coats.

How Shipped—Amurseal is shipped in drums of 5 gal., 30 gal. and 55 gal.

ARIDTITE for an Asphaltic and Plaster Bonding on Masonry Walls Above Grade

ARIDTITE
ASPHALTIC PLASTERBOND

A black liquid asphaltic paint and plaster bond applied cold to the inside surface of exterior walls above the ground in a single coat. Aridtite provides a bond for plaster.

Also used for coating unexposed sides of cut stone. Covering capacity, approximately 80 sq. ft. per gallon, single coat.

How Shipped—Aridtite is shipped in drums of 5 gal., 30 gal. and 55 gal.

ACCELLO, Concrete Accelerator and Anti-Freeze

Description—Accello, a standardized solution of calcium chloride, uniform in quality and strength, is used to accelerate the set of cement in concrete, mortar and floor finish in very cold weather, and to prevent freezing of portland cement mixtures at temperatures as low as 15° F. For temperatures from 32° F. to 15° F., use 1 part Accello to 10 parts water. 15° F. or less, mechanical heat is necessary.

How Shipped—Accello is shipped in 55-gal. barrels and 5-gal. drums.

ADMIXTURE, a finely divided silica admix, increases plasticity and durability of concrete.

ELASTIC CALKING COMPOUND

A non-staining compound for calking window and door frames, steel sash, flashings and gutters, and for pointing terra cotta, brick, stone and wood joints.

Made in *knife* and gun consistency, black or gray.

Directions—Window and Door Frames—Fill dry and clean openings around frames to within ½ in. of surface with oakum. Completely seal openings with "Anti-Hydro" Calking Compound.

Pointing Masonry—Point dry and clean joints with "Anti-Hydro" Calking Compound until flush with surface, using knife or tool.

How Shipped—1-gal., 5-gal., 30-gal. and 55-gal. containers.

DETAILED INFORMATION

Write for complete data and specifications for any work within the scope of "Anti-Hydro" products.

DEALERS EVERYWHERE CARRY STOCK

A complete stock of "Anti-Hydro" products is carried by dealers throughout the country.

The Services of Our Engineers Are Available at All Times

Telephone Bigelow 3-5440

ANTI-HYDRO WATERPROOFING CO.

Established 1904

265-277 BADGER AVENUE, NEWARK 8, N. J.

ANTI-HYDRO OF CANADA, LTD., 639-641 Farm Street, Montreal 22, Canada

THE AQUABAR COMPANY

Waterproofings, Dampproofings, Floor Hardeners, Masonry Coatings

"Known the World Over"

Perry Building, Philadelphia 2, Pa.

Representatives in all principal cities—Nearest dealer's name furnished on request

FORTY-EIGHT YEARS OF QUALITY AND SERVICE, 1901-1949

Nearly half a century is the test to which AQUABAR PRODUCTS have constantly been subjected. The methods described are the development of the best practice known to Engineering, which cover practically every field encountered in building construction and maintenance. Each product is the result of many years of research in our laboratories, being added to the AQUABAR line only after the most exhaustive tests have shown each to be the most efficient in its respective field. Architects' and Engineers' specifications, test data, testimonials, etc., furnished upon request without obligation.

AQUABAR PRODUCTS

Waterproofing, Etc.

Integral Compound No. 1 Waterproofing Paste
Aquatite Integral Liquid Waterproofing
Concentrated Integral Waterproofing Powder
Mortaron Shrinkproofing for Masonry Mortars (dispersing agent)
Clear Coat No. 2 Colorless Waterproofing Liquid
Aquatex Elastic Caulking Compound
Ferrocon Metallic Waterproofing
Duracrete Cement Dispersing Agent for Mass Concrete, etc.
Cementite Admixture for Workability (Powder)
Permakote No. 6 Waterproofing Paint
Aqua-Proof Mineral Masonry Coating (Powder)
Statite No. 3 Plaster Bond Dampproofing Paint
Marine Cement No. 3-A Foundation Coating
Semi-Mastic (trowel)

Membrane Curing

Kuraseal for Membrane Curing of Concrete (Transparent and Bituminous)

Floor Hardeners, Etc.

Duroplate (Sparkproof) Metallic Aggregate (plain and colored) for heavy duty floors
Durocon Metallic Hardener (plain and colored) for average duty floors
Durundum Aggregate for Concrete Floors (plain and colored)
Duro-Mix Integral Floor Hardener (liquid and powder)
Iron Clad Liquid Floor Hardener
Iron Clad Crystals 7B Floor Hardener
Ironco Bonding Iron and Non-Shrink Aggregate

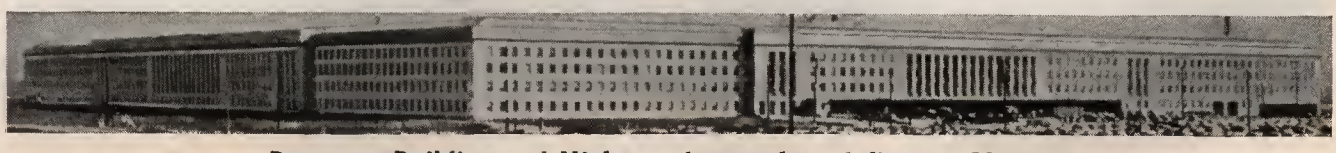
SELECTION TABLES—AQUABAR PRODUCTS

INTEGRAL WATERPROOFINGS

TRADE NAME	REQUIREMENT AND RESULT	DESCRIPTION AND SPECIFICATION
Aquatite Integral Liquid Waterproofing	Waterproofs, hardens, cures, increases and speeds compressive and tensile strength, plasticity and workability of all concrete mixes and cement mortar. Lowers freezing point. Produces durable concrete, permanent against water, weather and frost.	Use 1 gal. per cu. yd. mass concrete 1-2-4 mix for ordinary moisture conditions; where water pressure exists use 1½ gals. per cu. yd. (See detail specification page 4.)
Integral Compound No. 1	Waterproofs and lubricates with no increase of water without affecting tensile strength. Eliminates honeycomb by increased density.	A soft semi-paste, easily dissolved in water 1 to 50. Use ½ gal. per cu. yd. concrete for ordinary conditions. Where water pressure exists use ⅔ to 1 gal. per cu. yd. For cement mortar and stucco, dilute 1-25 parts of water. Use 1 gal. for 150-225 sq. ft. stucco (depending on wetness of mix) ¾-in. plaster coat.

WATERPROOFINGS, DAMPPROOFINGS, and MEMBRANE CURING

Clear Coat No. 2 Colorless Waterproofing (Standard) Extra Heavy for Exceptionally porous Surfaces	Penetrates pores and hair cracks, preserves and stainproofs cement, brick, stone masonry, limestone, concrete, stucco, terra cotta, etc. Renders same impervious to moisture, and driving rains permanently. Do not apply in temperature below 50° F.	Colorless transparent liquid. Does not change appearance of coated surface nor leave a film upon application. Penetrates. Becoming an integral part of the masonry. Apply by brush or spray. Use: 1 gal. per 125 sq. ft. 1 coat. 1 gal. per 80 sq. ft. 2 coats. (depending upon porosity)
Aquatex Elastic Caulking Compound	For caulking of window and door frames, pointing masonry, terra cotta joints and flashings of all kinds.	A special plastic material composed of weatherproof, waterproof and elastic bonding oils and gums, properly reinforced to fill permanently interstices and will remain elastic and unaffected by the weather. Grey or limestone, or other colors if required.
Permakote No. 6 Waterproof Coating	Liquid cement coating for waterproofing and dampproofing exterior masonry surfaces. Also used for interior surfaces of swimming pools, etc. Furnished in various colors.	Seals pores and haircracks and offers excellent wearing qualities. COVERING CAPACITY: Approx. 150 sq. ft. per gal. 1 coat. 100 sq. ft. per gal. 2 coats.
Ferrocon Metallic Waterproofing	Prevents absorption of moisture and seepage of water. For use on old and new structures.	Finely powdered iron mixed with sand, cement and water. 3 to 5 coats recommended for pressure. Add Ferrocon to water slowly, stirring constantly. Should be well rubbed in with rotary motion. Allow each coat to dry thoroughly, assuming rusty color. Never apply Ferrocon to dry surface. Use 10-15 lbs. per 100 sq. ft.
Statite No. 3 Plaster Bond	For dampproofing interior walls above grade before plastering.	Apply by brush or spray. Coverage—Approx. 1 gal. will cover 75 sq. ft. 1 coat; 50 sq. ft. 2 coats.
Marine Cement No. 3-A	Foundation coating for dampproofing exterior walls below grade and before placing earth fill.	Applied cold with large brush. Coverage—Approx. 1 gal. will cover 60 sq. ft. 1 coat; 40 sq. ft. 2 coats.



Pentagon Building and Highway Approaches, Arlington, Virginia

JOHN MCSHAIN, INC., DOYLE AND RUSSELL AND WISE CONTRACTING CO., INC., Contractors
Approx. 5 million sq. ft. concrete floor slabs and approx. 30 miles of highway approaches cured with KURASEAL.

SELECTION TABLES—AQUABAR PRODUCTS, WATERPROOFINGS, ETC. (Continued)

TRADE NAME	REQUIREMENT AND RESULT	DESCRIPTION AND SPECIFICATION
Mortaron (Dispersing Agent) Shrinkproofing for Masonry Mortars (Plain and Colored)	For leakproof masonry mortars. Produces ideal plastic mortar using 15% to 20% less water. Increases bond, plasticity, strength and adhesion of mortar and bricks or tile. Reduces shrinkage, efflorescence and water absorption.	Cement dispersing agent combined with puzzolanic plasticizer in powder form for all portland cement mixtures. Also supplied with water repellent stearate. Manufactured in colors for colored mortar and stucco. Specification: 1 lb. per sack (cu. ft.) cement; 1 lb. per sack (cu. ft.) lime. For masonry cement 1 lb. per sack.
KURSEAL "A" and "Standard" Transparent membrane curing compound (with and without fugitive coloring)	Forms a continuous water repellent film which effectively seals in moisture. Most economical eliminating other methods. Meets U. S. Engineers, Bureau of Yards and Docks City and State Highway Departments specifications.	As soon as exposed surfaces have sufficiently hardened so will not mar under treatment, or as soon as forms are removed, in case of form surfaces, apply 1 thin uniform coat by brush or spray. Covering capacity: Kuraseal "A" Approx. 200 sq. ft. per gal. Kuraseal "Standard" 500-600 sq./ft. per gal.
Duracrete Cement Dispersing Agent for durable concrete	Increases strength 15 to 20%, slump 100%, hence more durable concrete with water reduction, resulting in decreased shrinkage, increased durability and added resistance to freezing and thawing and decreases the action of corrosive substances.	Add 1 lb. per each bag of cement.

METALLIC, INTEGRAL, AND SURFACE FLOOR HARDENERS

Duroplate (Sparkproof) Metallic Aggregate (plain and colored) for heavy duty floors	Combined with a cement dispersing agent permitting to incorporate from 60 to 120 lbs. of specially graded metallic aggregate per 100 sq. ft. floor area.	See Page 3 for detail specification.
Durocon Metallic Hardener (plain and colored) for average duty floors	Specially prepared water-absorbent metallic hardener with the addition of Ocon Plasticizer which provides a concrete of increased strength resistant to alkalies, acids, etc., free from dusting and crazing, easy to clean.	Chemically treated all-ferrous water absorbent metallic hardener containing Ocon, also water reducing plasticizer. Use: For average traffic 30-40 lbs.; for heavy traffic 50 lbs.; for extra-heavy traffic 60 lbs. per 100 sq. ft. Detailed specifications on request.
Durundum Non-metallic (Plain and Colored)	An aggregate floor hardener composed of powerful coloring mediums, waterproofing and hardening elements plus cementitious binders. Non-rusting and produces non-slip surface. Entirely inert, very hard, tough and abrasive resistant.	Use: 40 lbs. Colored Durocon with 20 lbs. cement per 100 sq. ft. Colored aggregate made in various colors, tile red, russet, linoleum brown, French gray, Spanish green, etc. After topping has been screeded and floated mix 30-40 lbs. Durundum with 20 lbs. cement per 100 sq. ft. floor surface. Again float and trowel. When set sufficiently give surface final troweling. Detailed specifications furnished upon request.
Duro-Mix Integral Floor Hardener Liquid and Powder Combined with Cement Dispersing Agent	Densifies and waterproofs the full topping throughout. Converts the solubles where disintegration starts, giving resistance to corrosion, etc. Makes a dry mix easily placed with 10% to 15% less water. Produces strong, dense concrete.	Use 1 qt. per sack of cement (liquid) 2 lbs. per sack of cement (dry)
Iron Clad Liquid Hardener For dustproofing and hardening concrete floors	Combines with free lime and other elements in cement, forms new compounds which add considerable density and hardness to surface, rendering floors dustproof.	See Page 4 for detail specification.
Ironclad Crystals 7B	Wearproofing, waterproofing and dustproofing. For use on old and new concrete floors.	Dilute 2 lbs. crystals with 1 gal. water. Apply in 2 coats: First coat dilute with equal parts of water; second coat, apply full strength. 2 lbs. per 100 sq. ft. 2 coats. 2½ lbs. per 100 sq. ft. 3 coats.
Ironco (Bonding Iron and Non-Shrink Aggregate) (Grouting)	For waterproof, crackproof plaster coat, grouting and reintegration. Added to concrete mixes or mortars it counteracts shrinkage, etc., as it expands as it sets.	Powder composed of specially prepared metallic aggregates, cement dispersing agent, etc.; promotes oxidation and strength, bonding floor topping to the slab, etc. Detailed specification on request.

Tripler General Hospital, Medical Department, U. S. Army, Island of Oahu, T. H.
York & Sawyer, Architect—Engineer—Manager
All concrete floors throughout hardened and dustproofed with Iron Clad.

Charity Hospital, New Orleans, La.
Weiss, Dreyfous & Seiferth, Architects
George A. Fuller Co., Contractor
C. O. Struse & Sons, Brick Masons
Mortar for all exterior masonry walls and backing shrinkproofed with Mortaron

Brewery Warehouse, etc., **Adam Scheidt Brewing Company,** Norristown, Pa.
Harley, Ellington & Day, Architects, Detroit, Mich.
Turner Construction Co., Contractors, Philadelphia, Pa.
Aquatite used to waterproof entire substructure
Kuraseal used for curing concrete floors
Duro-Mix Integral Floor Hardener used for hardening cement floors
Ironco used for bonding topping to slab

Schwarzenbach-Huber Company, Bethlehem, Pa.
Walter Kidde Constructors Inc.
Colored Durocon Metallic Hardener—tile red—used throughout all floors.

DUROPLATE--- Industry's toughest and most durable floor

For Heavy Duty Concrete Floors

Duroplate floors are durable, ductile, tough, dustless, sparkproof and corrosion resistant, being a combination of pure specially graded metallic aggregate combined with our dispersing agent permitting to incorporate from 60 to 120 lbs. per 100 sq. ft. floor area. The water reducing agent permits the application of a much heavier armor coat than heretofore permitted without additional water. Withstands severe wear and tear of heavy grinding, due to the fact that its metallic aggregate is ductile and gives under heavy loads. Ordinary cement floors are brittle and crumble—resulting in dusting, rutting and pitting.

Resistant to Corrosion—DUROPLATE withstands the attacks of alkalies, acids and ordinary industrial wastes.

Static Disseminating and Sparkproof—DUROPLATE Floors have greater volume of electrical conductivity as compared with ordinary concrete, thus carrying away static electricity. The metallic aggregate contained in DUROPLATE will not spark from friction with metal as ordinary concrete floors do. Due to this vital safety feature DUROPLATE Floors are widely specified, being used for explosive conditions due to combustible gases or dust.

Non-Slip—Where required a non-slip finish can be given to a DUROPLATE Floor.

Easy to Clean—Because of the non-absorbent finish, free from shrinkage cracks, floors are easy to clean.

Economical—Low original cost and long lasting makes the DUROPLATE Floor most economical for commercial purposes.

Application—DUROPLATE is distributed over and floated into the finished concrete floor which may be either monolithic or a top finish on an old or new concrete base. DUROPLATE provides a heavier armor protected concrete floor, and due to the increased amount of metal incorporated into the surface, naturally gives a much longer life than heretofore possible.

Specification: Concrete floors shall be hardened by incorporating DUROPLATE in accordance with manufacturer's directions. Not less than .. lbs. shall be incorporated per 100 sq. ft. (in accordance with service required specifying from 60 to 120 lbs. DUROPLATE per 100 sq. ft. For quantities over 60 lbs. per 100 sq. ft. specify .. lbs. Application shall be made with a mechanical floating machine, not by hand methods.)

COLORED DUROPLATE—Consists of Aquabar pure water-absorbent graded metallic aggregate, stable mineral oxides and dispersing agent. Applied as a shake or a dust coat. Provides wearing surface of a deep color. Tile red, linoleum brown, French grey, Persian red, battleship grey, Nile green, black russet, maroon. Also supplied in non-slip finish.

Specification: Concrete floors shall be colored and hardened with AQUABAR Colored DUROPLATE by mixing not less than 40 lbs. with 20 lbs. of cement per each 100 sq. ft. floor area in accordance with Manufacturer's directions. Detail specification on request.

DUROCON Metallic Floor Hardener

For average duty floors

Specially prepared water-absorbent metallic hardener with the addition of AQUABAR OCON, which provides a concrete of increased strength protecting from physical and mechanical wear, resisting acid, alkali and other foreign elements which ruin industrial floors, giving additional plasticity and workability to the floor topping.

Application—Is made by distributing over and floating into the fresh concrete finish, either monolithic or topping.

Specification—Concrete floors shall be hardened by the use of AQUABAR DUROCON applying from 40 to 50 lbs. per 100 sq. ft. floor area mixed with the cement in the proportion of 2 to 1.

Special Note—Detailed specification upon request.

COLORED DUROCON

Tile red, linoleum brown, French grey, Persian red, battleship grey, Nile green, black, russet, maroon. Also supplied in non-slip finish.

New Construction American Viscose Corp., Front Royal, Va.
Designed by Corporation Engineering Dept.
DUROCON Metalic Hardener and IRON CLAD Liquid Floor Hardener used for hardening cement floors above project.
Note: DUROPLATE, IRON CLAD and KURASEAL "A" used in new construction Meadville, Lewistown and Marcus Hook, Pa. and other plants.

Philadelphia Inquirer, Roto Building, Garage, etc., Philadelphia, Pa.
ALBERT KAHN, Associated Architects and Engineers Inc. McCLOSKEY & Co., Contractors
DUROPLATE (sparkproof) Metallic Aggregate used in heavy duty floors
DUROCON Metallic Hardener used in average duty floors and cured with KURASEAL "A"
MORTARON Shrinkproofing used for all brick work

AQUATITE Integral Liquid Waterproofing

for permanent concrete, hardens and waterproofs

AQUATITE is a liquid compound re-acting chemically with Portland cement, hydrating to a far greater degree than with water alone, speeding the curing of cement. Results in dense, hard, waterproof cement masonry of increased compressive and tensile strength, impervious to moisture, water, frost, oils, alkalis, sea water and resistant to many acids.

ACCOMPLISHMENTS OF AQUATITE

(a) Waterproofs concrete and mortar
(b) Increases plasticity and workability
(c) Produces durable concrete, permanent against water, weather and frost.
(d) Increases and speeds compressive and tensile strength of mortar and concrete
(e) Cures, hardens and renders non-dusting cement floor toppings and monolithic floor slabs
(f) Prevents corrosion of steel reinforcing
(g) Lowers freezing point of concrete
(h) Creates perfect bond between successive pouring of mortar or concrete

SPECIFICATIONS FOR MASS CONCRETE READY MIXED CONCRETE

Machine Mix—Figuring on 1 gal. basis add ⅔ qt. to each bag of cement for mass concrete 1:2:4 mix. Figuring on 1½ gals. add 1 qt. per bag of cement. Amount of gauging water to be reduced in proportion to amount of AQUATITE added. Concrete shall be well spaded when placed, etc.

Covering Capacity: Use 1 gal. to every cu. yd. mass concrete 1:2:4 mix for ordinary moisture conditions. Where water pressure exists, use 1½ gals. per cu. yd.

SPECIFICATIONS FOR WATERPROOFING CEMENT MASONRY MORTARS

Cement mortar used throughout all exterior masonry above grade, including parapets, shall be composed of 1 part Portland cement, 3 parts clean well washed sand, with a solution of 1 part AQUATITE to each 15 parts of clean water. No lime is needed in this mortar.

Machine Mix—Add 1 qt. to each bag of cement.

Covering Capacity: 1 gal. will waterproof 100 sq. ft. 1 in. top coat 1:2 mix cement mortar, or will waterproof sufficient mortar to set up 1000 brick.

Cosmopolitan High School, Reading, Pa.
Richter & Eiler, Architects
M. Melody & Son, Contractors
Aquatite used in all masonry mortar and entire substructure. Subject to hydrostatic pressure.

IRON CLAD

Industry's Leading Surface Hardener

For hardening, wear-proofing and dust-proofing concrete and terrazzo floors, and vertical concrete surfaces.

IRON CLAD is a chemical liquid which penetrates the concrete, re-acting chemically with the free lime and calcium carbonate in Portland cement, binding the loose particles into a close grained granite-like surface. Continued heavy traffic and trucking cannot tear the cement from its bedding. Proved by many years use.

IRON CLAD floors are many times harder than untreated concrete floors, being highly impermeable to the action of water, oils and chemicals.

IRON CLAD is the most efficient and dependable treatment for the chemical hardening by surface application of concrete. The application is very simple. Following its application the useful life of the concrete is prolonged, maintenance and cleaning becomes simplified and economical.

Abrasive tests have been made by Bureau of Standards and other laboratories proving this material to be most efficient, being used on millions of square feet of concrete floors on Federal, State, Municipal and Industrial projects over a period of years.

Application

Flush IRON CLAD liquid on and spread with floor sweeping brush or squeegee in three applications by mixing with water in proportion directed as follows:

Specification

1st coat—Mix 1 part IRON CLAD and 2 parts water
2nd coat—Mix 1 part IRON CLAD and 1 part water
3rd coat—Mix 2 parts IRON CLAD and 1 part water
COVERAGE—1 gal. per 100 sq. ft. 3 coats

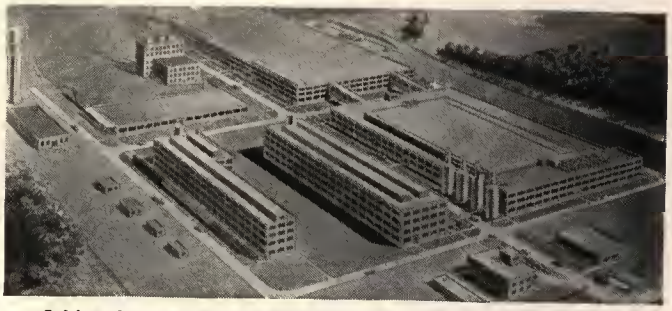
SPECIFICATIONS FOR ARCHITECTS AND ENGINEERS

Cement finish floors. Harden and dustproof the following concrete floor areas (specify) with three applications of IRON CLAD as manufactured by THE AQUABAR COMPANY, PHILADELPHIA, PA.

Because of the ease and convenience of application, IRON CLAD is widely used as a maintenance product by industries, etc.

BRIEF PARTIAL LIST OF INSTALLATIONS

American Viscose Corp.
Celanese Corp. of America
Armstrong Cork Company
General Electric Company
E. I. duPont de Nemours & Company
Pennsylvania Railroad Company
General Motors Corp.
Ford Motor Company
Owens-Illinois Glass Co.
Bethlehem Steel Company



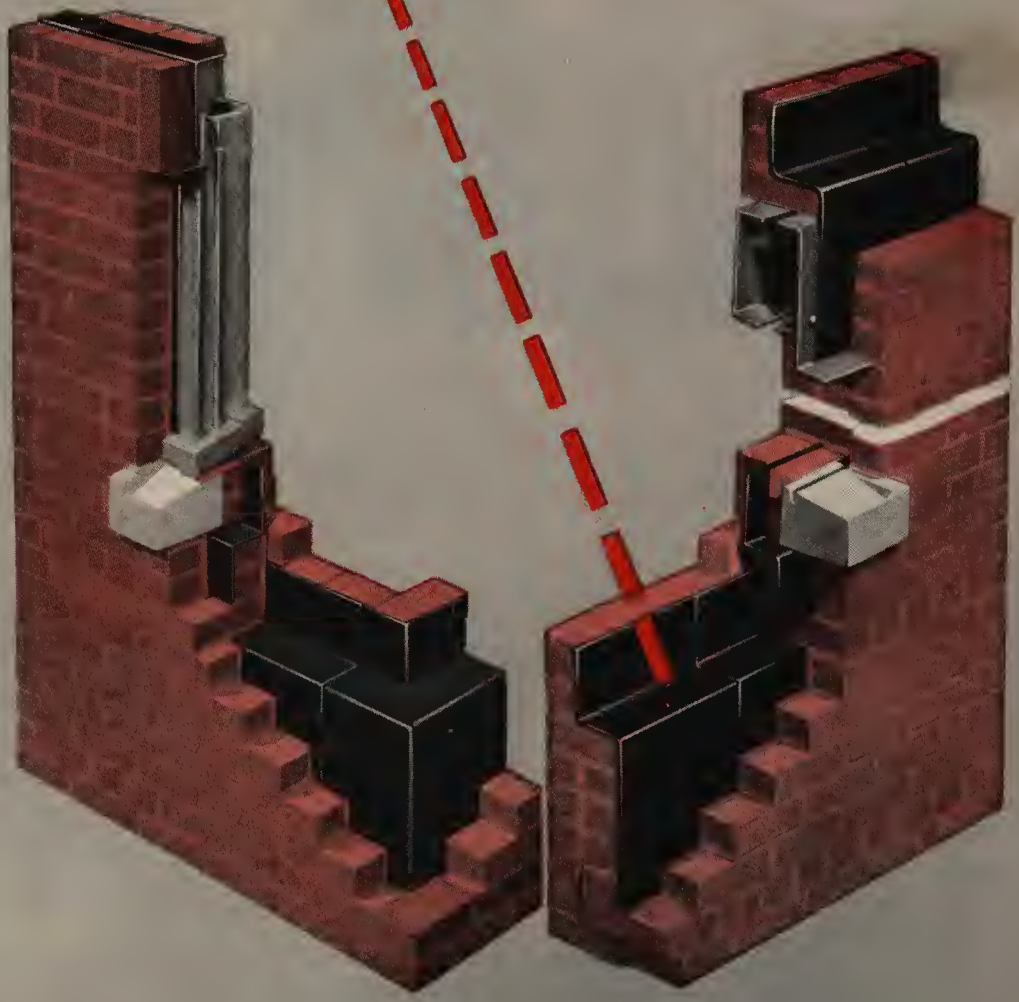
Celriver Plant Project, Celanese Corp. of America, Rock Hill, S. C.
Engineering Department, New York City
Daniel Construction Company, Greenville, S. C., Contractors
Both Durocon Non-Slip Metallic Hardener and Iron Clad Liquid Floor Hardener used in various sections for hardening cement floor finish.

THE AQUABAR COMPANY

Perry Building, PHILADELPHIA 2, PA.

Representatives in all principal cities—Nearest dealer's name furnished on request

BRISK pre-formed* waterproofing units for walls above grade



manufactured and installed by . . . . .

Brisk Waterproofing Co., Inc.

*Licensed under Larson patent numbers 2,088,754 · 2,023,425 · 1,970,326

BRISK PRE-FORMED WATERPROOFING UNITS LIMIT THE

PROVIDES A MEMBRANE SEALED IN THE WALL

The purpose of this method of waterproofing is to stop leaks in masonry walls above grade by providing an impenetrable membrane barrier within the wall.

Units have been designed to be easily and quickly laid in brickwork as it is built and to obtain a continuous barrier throughout the entire exterior wall area and around all openings for doors and windows.

Overlapping joints are completely sealed as they are laid. All corners are provided with carefully designed units that are locked with a standard wall unit at these vulnerable points.

COMPLETE PROTECTION FROM FOUNDATION TO ROOF

Structural steel, pipes and conduits are completely sheathed. The entire perimeter of the window is flashed. The system begins at the top of the foundation wall and is sealed to the roof flashing.

SIMPLE TO INSTALL

Waterproofers work side by side with bricklayers. The entire system is installed with a minimum of delay.

STRENGTH OF WALL IS MAINTAINED

Tests made at Columbia University show that the introduction of the units does not weaken the wall. After thorough investigation by its engineers, the Board of Standards and Appeals of the City of New York have approved the system without qualification on all steel construction.

THE MATERIAL IS DURABLE

A section of unit was removed from a wall where it had been for 8 years. Examination of this piece indicates no perceptible deterioration and therefore, a considerable life expectancy.

MODERATE COSTS

The cost is moderate. Comparative cost figures are available wherever the system was used as an alternate method. These figures indicate an additional cost of about one per cent of the cost of the building for the installation of the units. Computed as an insurance item for the first ten (10) years of the life of the building, definite saving is effected.

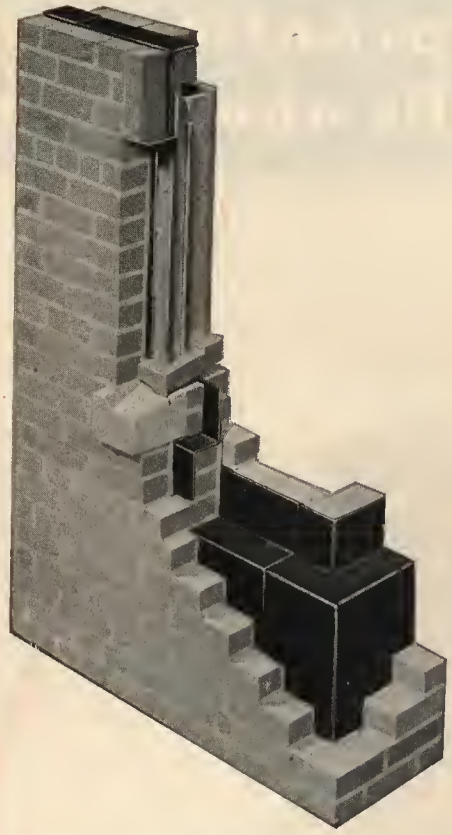
INSTALLATION

Units are installed by expert and experienced workmen. These workmen are supervised by the Staff engineers who are the men who have developed the system. Units are manufactured from material made to specifications and in accordance with specific job details.

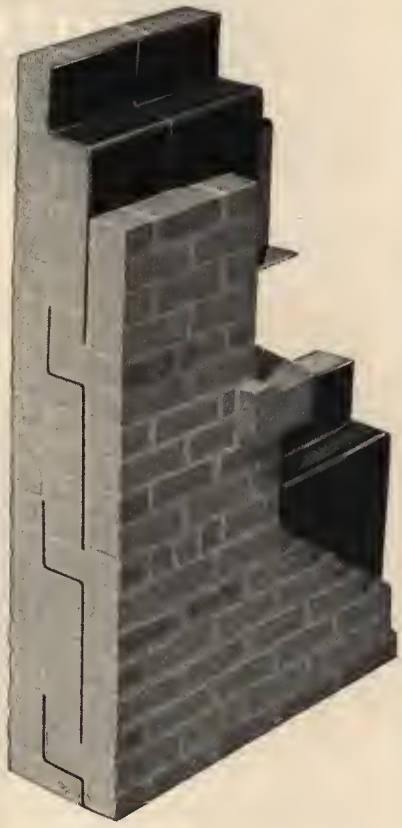
GUARANTEE

Not one penny has ever had to be spent for remedial waterproofing by owners on buildings where these units have been installed.

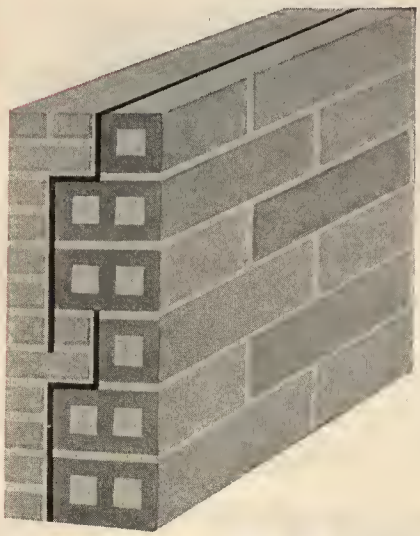
TYPICAL INSTALLATIONS FOR VARIOUS WALL CONSTRUCTIONS

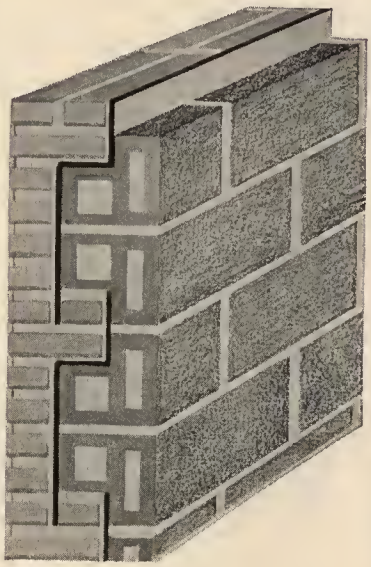


External Corner Showing Sill and Lintel Protection



Section Through Wall Showing Bond at Headers





Units Used with Various Standard Types of Cinder Concrete, Cement or Terra Cotta Blocks

PENETRATION OF WATER TO OUTER 4" OF WALLS ABOVE GRADE

PROOF OF THE EFFECTIVENESS OF THE BRISK SYSTEM

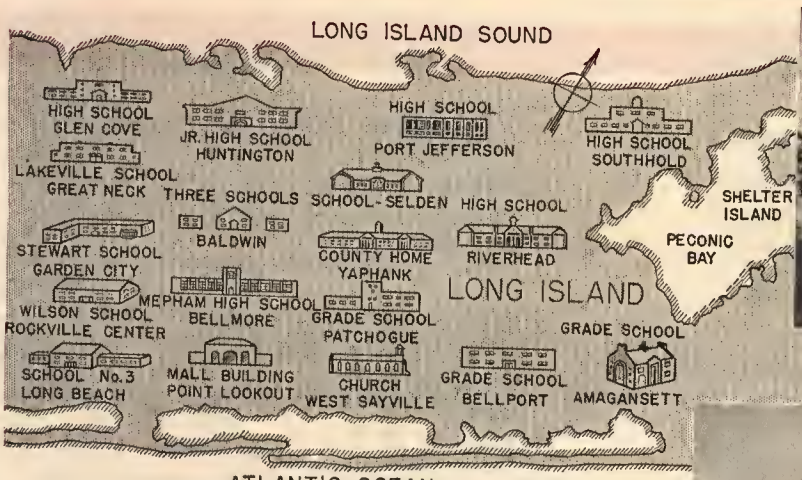
Buildings tested through two hurricanes

On September 21, 1938, a hurricane of unprecedented intensity struck Long Island. Many of the buildings directly in the path of this storm had been waterproofed by means of Brisk Pre-Formed Waterproofing Units. An immediate survey was made of these buildings by our engineers. In no case was there any leakage in the walls protected by Brisk Units. Another hurricane in some respects even more violent occurred in September of 1944 with like results.

Easily demonstrated to Architects and Contractors

We have prepared an exhibit demonstrating the practicability and construction details of the Brisk system. This consists of photographs, scale models, samples of materials and a complete motion picture of the construction of buildings using these units. This exhibit can be seen by any architect by appointment.

MAP SHOWING OUR BUILDING INSTALLATIONS ON LONG ISLAND IN PATHS OF HURRICANES OF 1938 AND 1944

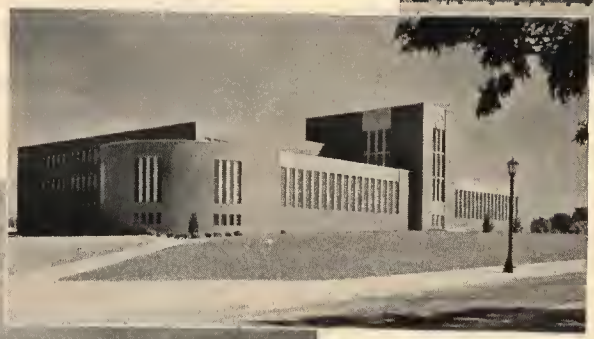


The map above shows the portion of Long Island which received the full impact of the hurricane and indicates the location of important buildings protected by Brisk Pre-Formed Waterproofing Units. How these buildings withstood the force of the storm is explained at top of the page.

High School, Riverhead, Long Island, N. Y.
WILLIAM LA FON, Architect

Suffolk County Infirmary and Home
Yaphank, Long Island, N. Y.
BISHOP & METCALF, Architects

Right:
W. C. Mepham High School
Bellmore, Long Island, N. Y.
FREDERIC P. WIEDERSUM, Architect



Left:
Stewart School
Garden City East, Long Island, N. Y.
TOOKER & MARSH, Architects

Right:
First Reformed Church
West Sayville, Long Island, N. Y.
LESLIE M. DENNIS, Architect

Photos by Wurts Bros. New York City

UNDER "WATERPROOFING"

This Contractor shall furnish and install a complete system of Brisk pre-formed waterproofing units built in the exterior masonry walls as indicated on the drawings and installed in accordance with these specifications.

The units are to form a complete built-up membrane within the walls, covering the entire area from top of foundation walls to roof or underside of copings. These units shall be sealed to all window and door frames or any other openings in the wall. They shall be carried in front of all beams, columns, pipe chases and recesses. They shall be carried around all corners, so as to maintain the continuity of the membrane. All joints shall be lapped at least 4" and sealed with mastic. Special shapes shall be provided as required. All units, standard or special, shall be set in accordance with the details shown and as required.

This Contractor shall furnish a satisfactory list of successful prior installations of this type.

UNDER "BRICKWORK"

The Contractor for the work herein specified shall provide for the pre-formed waterproofing units as hereinbefore specified as the brickwork proceeds and shall carefully follow all details for this procedure and shall do this work under the direction of the manufacturers and to their satisfaction. All headers and bonding are to be arranged and carried out according to the details and to provide for the proper installation of the waterproofing units as shown.

REPRESENTATIVE BRISK USERS

Voorhees, Walker, Foley & Smith	15	Telephone Buildings—N. Y.
Frederic P. Wiedersum	20	Schools—N. Y.
Wm. J. Provoost	8	Buildings—Conn.
Hart, Freeland & Rogers		Office Building—Tenn.
Tooker & Marsh	15	Schools—N. Y.
W. G. Armstrong	2	Office Buildings—Canada
Starrett & Van Vleck Reginald E. Marsh	3	Schools—N. Y. and Conn.
MacKie & Kamrath		Office Building—Texas
Adolph Knappe	3	Schools—N. Y.
Mack & Sahm		School—Penn.
Lawrence C. Licht	9	Schools—N. J.
Whitman S. Wick	2	Public Buildings—N. Y.
W. I. LaFon	3	Schools—N. Y.
Carl W. Clark		School—N. Y.
Wilson & Rahm	2	Schools—N. Y.
Steitz & Holder	2	Schools—N. J.
Anthony J. De Pace	4	Buildings—N. J.
Jesse J. Hamblin		School—Conn.
Howard S. Patterson	2	Schools—N. Y.
Ferrenz & Taylor		Institution—N. J.
Dittmars & Roberts	3	Schools—Alabama
Walford & Wright	9	Schools—Virginia
Coffin & Coffin	2	Schools—Conn. and N. J.
R. W. Foote	2	Buildings—Conn.
L. J. Lincoln		Court House—N. Y.
Mayer & Whittlesey		Apartment House—N. Y.
Daniel Perry		High School—N. Y.
Andrew Fritz		School—N. Y.
Lewis Inglee	2	Schools—N. Y.
Arnold V. Cook	2	Public Buildings—N. J.
Lester B. Scheide		Hospital—N. Y.
W. T. Schaardt	3	Public Buildings—N. Y.
Robert A. Willgoos		Medical Building—N. J.
Sears & Foote		School—Conn.

BRISK WATERPROOFING CO., INC.

103 PARK AVENUE • NEW YORK 17, N. Y.

CERESIT

Water Repellents For Concrete, Floor Hardeners, Masonry Repair Materials . . . and allied protective products

INTEGRAL WATER REPELLENTS FOR CONCRETE

GENERAL — For over a third of a century Ceresit has maintained its reputation as an effective Integral water resisting agent, not only in the United States but in other countries of the world. In South America it is made by Casa Ceresita, S.R.L., Buenos Aires.

CERESIT COMPOUND (PASTE)

DESCRIPTION — Ceresit is a smooth, white ammonium oleate emulsion in paste form. It mixes readily with the gauging water, which insures uniform distribution throughout the mix.

ADVANTAGES—(1) It retards capillary attraction of moisture, providing a water-repellent element in the entire mass.

(2) It provides increased plasticity and more complete cement hydration and waterproofness in all cement mixtures, concrete mortar and stucco.

(3) It increases workability of the mix, making concrete flow more readily through chutes and around reinforcing, thus reducing labor costs.

(4) It assists in producing concrete of greater density by permitting a reduction in the water content.

QUANTITIES — Mass Concrete: 8 lbs. (I gal.) cu. yd.

Cement Mortar: 8 lbs. (I gal.) per 100 sq. ft., 1" thick.

Cement Stucco: 4 lbs. (2 qts.) per 100 sq. ft., ½" thick.

Brick Mortar: 2 lbs. (I qt.) per sack cement.

CONTAINER — Shipped in 55, 30, 5 and I gal. drums.

TO USE — Place paste directly in the mixer before water is added or dissolve 1 gallon of paste in 30 gallons of gauging water.

NOTE: When so specified Ceresit paste can be supplied with Ammonium stearate formula.

CERESIT POWDER

DESCRIPTION — Integral water repellent powder is more adaptable for certain types of work where dry mixes are required, such as precast concrete products. It contains essentially the same basic element as the paste.

CONTAINER — Shipped in 50 lb. bags.

TO USE — Two lbs. Ceresit Powder per sack (94 lbs.) Portland cement. Dry mix powder, cement and aggregates before adding gauging water.

CERESIT LIQUID

DESCRIPTION — The same water repellent principle is embodied in the liquid type. Its use is a matter of individual preference because of its liquid state, making it easy to use.

CONTAINER — Shipped in 55, 30, 5 and I gal. steel drums.

TO USE — One quart of Liquid per sack (94 lbs.) Portland cement.

CEREFLUX PLASTICIZER

DESCRIPTION — A cement dispersing admix for use in all types of Portland cement mixtures. It greatly increases workability, flowability and permits a noticeable reduction of gauging water required for placing. Assists in the hydration of a larger percentage of the cement. Also combines with the free lime released during hydration, resulting in as much as a 20% increase in strength.

Concrete fortified with Cereflux will withstand the ravages of time. The added protection of Cereflux retards deterioration due to frost action and practically eliminates segregation of aggregates and honeycombing. Does not change the setting time of cement. If an accelerated set is required, Hi Early Cereflux can also be supplied.

Recommended for use in concrete above or below grade.

CONTAINER — Packed in 50 lb. bags.

TO USE — Two lbs. per bag of cement.

CRESOLAC

A Transparent Water Resistant Liquid for Masonry Surfaces

DESCRIPTION — Cresolac is a wax free stearate base clear liquid. It is applied by brush or spray on any unpainted exterior surface of brick, stucco or masonry.

Cresolac does not discolor or stain and leaves no visible sign of its presence. The surface pores are sealed with an insoluble water repellent agent. It prevents untimely disintegration due to extreme temperature changes. It checks unsightly efflorescence.

Building exteriors treated with Cresolac are protected against driving rains, in fact every rain washes the surface.

ADVANTAGES — It seals all surface pores. It's easy to apply — use either brush or spray.

COVERAGE — 100 to 200 sq. ft. per gal. for each coat, depending on porosity of surface.

CONTAINER — Cresolac is shipped in 55, 30, 5 and 1 gallon drums.

TO USE — Brush Coating—First repair structural cracks, holes and defective mortar joints. Surface must be dry and free from dust and dirt. Apply Cresolac in 2 coats 24 hours apart. Use a wide brush, saturate the surface thoroughly, filling every pore.

Spray Coating—One thorough application is sufficient when Cresolac is applied with a spray. Complete saturation of the entire surface is essential.

CERESIT WATERPROOFING CORP.
GENERAL OFFICES & FACTORY • 512 S. CANAL ST., CHICAGO

FERROKOTE

A Water Repellent Metallic Compound for Brush Coat Application on Below Grade Surfaces

"IRON METHOD" — SURFACE APPLICATION

DESCRIPTION — Ferrokote is a pulverized iron compound in powder form combined with oxidizing chemicals. It is free from oil, non-ferrous metals and other impurities.

Sealing below grade walls against water penetration by the "iron method" is recognized as the most effective system for securing watertightness by surface application.

For all areas subject to hydrostatic pressure such as basements, boiler rooms, pits and tunnels, Ferrokote should be used. Application is made by successive brush coats. It is also recommended for swimming pools, tanks, reservoirs and similar work.

Ferrokote conforms with U. S. Government specifications.

QUANTITIES — 20 to 25 lbs. per 100 sq. ft. for 3 coat work.

CONTAINER — Shipped in 25, 50 and 100 lb. vacuum sealed containers.

TO USE — In general, 3 coat application is standard practice for wall work, after holes and openings are patched. Ferrokote is mixed with water and brushed into the surface which is first dampened. Detailed instructions go with each shipment.

CERESIT NON-SHRINK PATCHER

DESCRIPTION — Ceresit Non-Shrink Patcher is shipped ready mixed for use. It is used for patching holes in floors and walls, building up crumbling areas in concrete walls, concrete piers, filling in around pipes and bolts and for repointing and repairing brick or other masonry.

When basements are to be sealed against water penetration, repair all broken or honeycombed areas with Ceresit Non-Shrink Patcher before applying Ferrokote.

If water enters where walls and floor meet, build a cove with this Patcher. When putting in a cove, roughen both wall and floor by chipping 4" to 6" from joint. When placing cove mortar, the fill at the joint should be 1" thick. Then feather edge from there out to cover roughened area.

QUANTITIES — Quantity required for cove approximately 4 lbs. per lineal foot.

CONTAINER — Shipped in 25, 50 and 100 lb. vacuum sealed containers.

TO USE — Chip out opening to be sealed. Leave sides and bottom rough for bonding.

Make a mortar of Ceresit Non-Shrink Patcher and just enough water for a workable mix. Flush opening thoroughly with water. Just before placing mortar, brush in a grout of Patcher mixed with water. Fill opening completely. Tamp firmly.

CERESIT INSTANT PATCHER

DESCRIPTION — Ceresit Instant Patcher is used to seal active leaks. It is a specially processed compound in powder form to be mixed with water to mortar consistency.

Localized leaks can be plugged and stopped almost instantly, as it sets hard immediately.

Use in basements, tunnels, pits and masonry walls.

CONTAINER — Shipped in 10, 25, 50 and 100 lb. vacuum sealed containers.

TO USE — (1) Chip out opening not less than 1" wide and 1½" deep. Plug only one hole at a time.

(2) Mix Instant Patcher with just enough water to make a stiff mortar—don't get it too wet.

(3) Mold the mortar into a cone shaped plug. As it starts to harden, force the plug into the hole, working it into all uneven places without releasing pressure. Hold firmly in place for a minute or so until it sets hard. Don't let any water seep through while it is setting.

CERESIT ASPHALTS—CUTBACK AND EMULSIFIED

FOUNDATION COATING & PLASTER BOND

DESCRIPTION — Ceresit Damp Resistant Coatings are made from high grade asphalt combined with preservative elements which assure a protective coating which will not disintegrate or peel off. For cold application by brush or spray. Their many uses include application as a protective coating for exterior foundation walls below grade, Plaster Bond on the inside of exterior masonry walls above grade and as a stone backing on all but the exposed surfaces of cut stone to prevent staining and efflorescence.

COVERAGE — One coat—75 to 85 sq. ft. per gallon. Two coats—40 to 50 sq. ft. per gallon.

CONTAINER — Packed in 1, 5, 30 and 55 gallon containers.

TO USE — Foundations — Paint exterior foundation walls below grade with not less than 2 coats of Ceresit Foundation Coating, using not less than 2 gallons per hundred square feet.

Plaster Bond—Paint the inside surfaces of all exterior walls above grade that are to be plastered with 2 coats of Ceresit Plaster Bond. Apply this asphalt coating to all masonry partitions that are in direct contact with the outside walls. Coat these to a point 2 feet from the exterior walls.

FIBRATED ROOF COATING

DESCRIPTION — A heavy paste consisting of cut back asphalt containing asbestos fibres. A maintenance material for covering leaks in all types of roofs. Also used for coating flashings and parapet walls. A cold application material.

COVERAGE — Covering capacity 6 to 8 gallons per 100 square feet.

CEROPHALT EMULSIFIED ASPHALTS

DESCRIPTION — No. 20 — An emulsified asphaltic coating of thin paste consistency, applied cold by brush or spray. Its outstanding advantage is that it can be applied on damp surfaces. It will bond to any surface such as masonry, glass or metal. Its many uses include protecting foundations against dampness, Coating Metal Pipes, Structural Steel, Wood or Metal Tanks, Gutters, etc. It retains a natural elasticity under all temperatures. It has no apparent odor and will not contaminate water.

Coverage—One coat—75 to 85 sq. ft. per gallon. Two coats—40 to 50 sq. ft. per gallon. When necessary it can be thinned with water to the desired consistency.

DESCRIPTION — No. 30—The same type of product described above except that it is a heavy paste consistency for trowel or squeegee application. It is frequently used for a foundation coating where an extra heavy film is required, roof repairs, and other protective coatings. Also used for bonding metal or asphalt tile, linoleum and other coverings and as a fill in expansion joints.

Coverage—A ⅛" film requires approximately 8 gal. per 100 sq. ft.

DESCRIPTION No. 20F and No. 30F — These products are the same asphalt formulae as described above—with asbestos fibre added. The asbestos fibres materially increase tensile strength and prolong the life of the product.

DESCRIPTION No. 20-012F — An emulsified asphalt of liquid consistency. This formula was developed especially for making an asphalt mastic floor repair and resurfacing material that could be combined with cement, sand and aggregates at the job. It is mixed and placed like concrete.

Cerophalt No. 20-012F can be used for patching, repairing and resurfacing concrete, wood and other materials in commercial and industrial plants. It is also used for leveling up worn areas under other types of flooring materials. It bonds securely and produces a tough, resilient floor that will stand up under the heaviest traffic.

Detailed instructions furnished with each order. Packed in 5, 30 and 55 gallon containers.

NOTE: All asphaltic products are soluble in grease and oil. They are not recommended for use where they will come in contact with motor or cutting oils, grease or fatty acids.

FLOOR HARDENERS

METALSIUM METALLIC HARDENER

DESCRIPTION — Concrete floors with Metalsium incorporated in the topping successfully resist the grinding wear of heavy traffic.

Metalsium gives an iron-armored and flint hard floor surface.

Metalsium is made of pure grey cast iron selected to meet exacting specifications.

Every trace of non-ferrous metal and other foreign matter is removed. Metalsium is ground in mills specially designed to produce iron particles slightly elongated with jagged edges. These rough iron grains rigidly interlock under the trowel.

Our screening method insures perfect grading from coarse to fine, eliminating all but the hard kernel of the iron.

A specially designed and controlled heat treating process removes every vestige of oil, grease and all other impurities. This process makes Metalsium entirely water absorbent, insuring perfect assimilation when incorporated in the concrete floor topping.

It is made in natural grey, also in colors.

QUANTITIES — Light Service: 30-40 lbs. per 100 sq. ft. Medium Service: 40-50 lbs. per 100 sq. ft.

CONTAINER — Packed in 100 lb. bags.

TO USE — Mix 2 parts Metallic Hardener aggregate to 1 part Portland Cement by weight or equal parts by volume. Dust coat mixture over concrete floor after all surface moisture has disappeared, and floor will support finisher on knee boards. Float (hand or power) until thoroughly hydrated. Finish with steel trowel. A second troweling before final set increases smoothness and density.

COLORED METALSIUM

DESCRIPTION — Colored Metalsium is our regular all ferrous, water absorbent Metallic Hardener in combination with pure lime resistant mineral colors, having extremely high tinting power, capable of producing the richest shades for concrete floor surfaces.

COLOR — Tile Red, Brick Red, Brown, Battleship Grey and Green.

QUANTITIES — 35 to 40 lbs. per 100 sq. ft.

CONTAINER — Packed in 100 lb. bags.

TO USE — Mix 2 parts colored Metalsium to 1 part Portland cement by weight, or equal parts by volume. Apply in 2 dust coats. Float after each coat. Finish with steel trowel. Do not trowel a second time after the initial set as greyness and streaking will result. Excessive steel troweling draws too much cement to the surface.

SUPER METALSIUM

DESCRIPTION — The constant demand for a greater amount of hardener per square foot of wearing surface prompted us to develop a material to meet that need.

With Super Metalsium it is possible to use up to 120 lbs. of hardener per 100 square feet. Obviously this added iron content in the concrete topping proportionately increases the floor's wear resisting properties. The addition of Silium puzzolanic cement dispersing and water reducing admix to our regular oil free pure Metallic Hardener produces Super Metalsium — literally a Super Metallic Hardener.

Application is simplified and better results assured by using a power float in finishing. Super Metalsium is also made in colors.

QUANTITIES — Heavy Duty: 60-75 lbs. per 100 sq. ft. Extra Heavy Duty: 90-120 lbs. per 100 sq. ft.

CONTAINER — Packed in 100 lb. bags.

TO USE — As above for Metalsium.

CERCO PENETRATING SEALER

DESCRIPTION — A liquid Phenolic Resin penetrating sealer prepared for use on all types of concrete or wood floors. Its primary purpose is to seal the surface against penetration of water, grease and oil, and to eliminate dusting of concrete.

It provides a surface that will resist the deteriorating effects of mild acid and alkali solutions. Can be used to seal concrete floors hardened with Indurite or Metalsium but cannot be used on floors treated with Ceroseal.

COVERAGE — Three to five hundred square feet per gallon.

TO USE — A two coat application is recommended. Let first coat dry before second application.

CRESCRETE LIQUID INTEGRAL HARDENER

DESCRIPTION — Crescrete is a liquid integral hardener, accelerator and densifier for all Portland cement mixtures, making them highly water resistant. It is of particular value in cement floor work because of its accelerating action. It acts as a lubricant and decreases the amount of mixing water required, also cuts labor costs by making possible early removal of forms and finishing a greater area per day.

Crescrete is used to speed up hydration in various cement mixtures, mass concrete, bonding agents and concrete floor toppings. Crescrete can also be used to assist in the protection of winter cement work at below freezing temperatures.

TO USE — Add Crescrete as taken from original container to the gauging water, using 1 quart per bag of cement.

INDURITE CHEMICAL HARDENER

DESCRIPTION — This chemical solution hardens concrete floor surfaces by chemical reaction. It is an approved formula in use for many years. Indurite is supplied in liquid, also in crystal form, in which case the solution is made on the job.

Concrete floors which are showing signs of wear can be reclaimed for added years of usefulness by applying Indurite Liquid Hardener.

The liquid chemical hardener treatment is standard practice in much Government work, in fact, it is a standard Government specification.

COVERAGE — Liquid—1 to 1½ gallons for 100 sq. ft.; Crystals—2 to 3 pounds per 100 sq. ft.

CONTAINER—Liquid—packed in 55, 30 and 5 gal. containers; crystals packed in 400, 100 and 50 lbs. containers.

TO USE — It is simply flushed over the surface and brushed in. From two to three applications are required, several hours apart, the number of applications depending on the condition of the floor.

CEROSEAL LIQUID HARDENER

DESCRIPTION — Ceroseal is a liquid hardener applied in three or more coats to concrete floor surfaces.

It seals the pores with a crystalline deposit and gives a hard wearing surface that is easy to keep clean.

Ceroseal is of particular value for acid resisting and the prevention of oil, grease and water penetration.

COVERAGE — Three-fourths gallon covers 100 sq. ft. for 3 coats.

CONTAINER — Shipped in 55, 30 and 5 gallon containers.

TO USE— Thoroughly clean floor. Flush Ceroseal over the surface and brush in. Apply 3 coats, several hours apart.

LUMNOX NON-SLIP AGGREGATE

DESCRIPTION — Lumnox is pure Aluminum Oxide grains ⅛" to 1/32" and complies with Federal Specifications. It is wear-resistant, rustless, and is recommended for stair treads, landings, ramps, sidewalks and wet areas, wherever a non-slip surface is required.

QUANTITIES — 25 to 30 lbs., per 100 sq. ft.

CONTAINER — Packed in 100 lb. bags.

TO USE — After the cement has been screeded level, let it set until it will bear the weight of a finisher on knee boards. Then dust on approximately ¼ lb. of Lumnox per sq. ft. and wood float until the Non-Slip Aggregate is firmly embedded in the surface.

SAFTYPLATE —Metallic, Non-Slip, Colored Aggregate

DESCRIPTION — Saftyplate is a scientifically combined aggregate consisting of pure Aluminum Oxide grains, graded iron kernels and Pure Non-Fading Cement Colors. Saftyplate produces a decorative, wear resisting and non-slip floor surface.

It provides an attractive and serviceable floor for stair treads, landings, ramps, halls, corridors and showrooms, where appearance, durability and safety with extra resistance to wear must be considered.

COLORS — Terra Cotta, Brick Red, Maroon, Brown, Black and Green.

QUANTITIES — 30 to 50 lbs. per 100 sq. ft.

CONTAINER — Packed in 100 lb. bags.

TO USE — Follow instructions for Colored Metalsium.

MAINTENANCE AND MISCELLANEOUS PRODUCTS

CRAXEMENT — For Patching Concrete Floors

DESCRIPTION — A ready for use flint hard aggregate of volcanic rock, granite and iron, combined with chemicals and a special fast setting cement. It sets overnight ready for heavy service.

QUANTITY — 10 to 15 lbs. per sq. ft., depending on depth.

CONTAINER — Vacuum packed in 100 to 250 lb. drums.

TO USE —Chip opening to ¾" depth and roughen for bonding. Saturate with water for about 30 minutes. Sweep out surplus water. Mix Craxement with approximately 1 gallon of water for each 100 lbs. Brush in a grout and while still wet, place mortar. Tamp, float and steel trowel. Damp cure for 12-15 hours.

CEROMASTIC — For Shallow Patching

DESCRIPTION — Ceromastic is for patching shallow places, smoothing out uneven and rutted areas, and resurfacing pitted floors. It is a ready to use plastic concrete—mastic and aggregate combined in one container. Application can be made up to ½" thick, and it feather-edges perfectly. It can be applied to concrete, wood or other floors. It will not crumble, dust, curl up or crack.

QUANTITY — Thirty gallons cover 100 sq. ft., ½" thick.

CONTAINER — Packed in 10 and 30 gallon drums.

TO USE — Unit consists of pre-mixed Mastic in one container, Bond Coat and Setting Powder in another. Clean area. Saturate with water, broom off excess. Apply Bond Coat over area and 4" beyond. Let dry till tacky. Dissolve powder and add to Ceromastic Mix until uniform in color. Crown patch ⅛" above floor level for compacting. Float and steel trowel when set. Protect for 24 hours.

CERESTONE — For Floor Repair

DESCRIPTION — Cerestone is a ready mixed magnesium oxychloride cement compound in dry powder form. It will bond to almost any clean surface, does not shrink, and is stronger than concrete.

It is an excellent material for resurfacing wood, brick or concrete floors. When used as a resurfacing material sand and ¼" aggregate must be added at the job.

QUANTITY — Approximately 4 lbs. per sq. ft., ½" fill.

CONTAINER — Packed in 100 lb. units.

TO USE — Each Cerestone unit consists of 2 materials—crystals and powder. Dissolve the crystals in clean water and use only this solution for mixing with the powdered material. Surface to be repaired must be clean, free from dirt, grease, oil or chemicals. To secure a bond rub in a grout (paint consistency) then fill the hole with a somewhat thicker mix. When it has set sufficiently steel trowel to a smooth finish. Repairs will carry normal traffic in 24 to 48 hours.

CEROPHALT CRACK AND JOINT FILLER

DESCRIPTION — A cold application asphalt of pouring consistency for use in expansion joints, cracks, etc. It sets rapidly when exposed to air, yet remains plastic in cold weather. It is in reality a caulking of pouring consistency, and bonds to any surface. Can also be furnished in knife consistency when required.

COVERAGE — 231 cu. in. per gallon.

CERESIT CAULKING COMPOUND

DESCRIPTION — An economical high quality caulking compound, which will not dry out, but remain plastic without shrinkage. It is not affected by expansion, contraction or temperature extremes. It is easy to apply and bonds to any properly prepared surface such as masonry, metal or wood. Made in gun and knife grades.

COVERAGE — One gallon fills joint approximately ½" x ½" x 75'.

CONTAINER — Shipped in 1, 5 and 30 gal. sealed containers. Also available in pint cartridges packed 24 to a case.

METALOX—Prevents Shrinkage in Portland Cement Mixtures

DESCRIPTION — Metalox is a dry powder compound designed to utilize the expanding action of iron during oxidation. It consists of chemically pure pulverized iron combined with chemicals and puzzolanic ingredients thoroughly mill mixed.

Its many uses include concrete floor repair and resurfacing trucking lanes, patching spalled, broken or honeycombed concrete in basement or exterior walls, plaster coat work on walls, bridges, viaducts, silos, or concrete elevators, and for tuck-pointing masonry walls, chimneys, precast concrete, stone or cement block.

In the waterproofing field Metalox is invaluable for repairing honeycombed concrete, sealing cracks and filling holes around pipes or drains and for building a cove where walls and floor meet.

When setting heavy machinery the use of Metalox in the base prevents vibration and adds density and strength to the concrete.

A Metalox grout is an excellent bonding material for use on footings, floors or walls before the new concrete is poured.

QUANTITY — Approximately 50 lbs. per bag of cement.

CONTAINER — 25, 50 and 100 lb. Vacuum Sealed Drums.

TO USE — Dry mix Metalox, cement and aggregate before adding gauging water. Rub in a grout on areas to be repaired, then place the Metalox mortar.

LUXSTAR CEMENT PAINT

DESCRIPTION — Luxstar is a water repellent cement base paint in powder form, to be mixed with water. It is for wall surfaces only.

Because of its cement base, it has an affinity for any surface of cement or allied product. It bonds with and becomes an integral part of the surface.

Luxstar can be used on any unpainted, vertical surface of concrete, cement, stucco, brick, cement block or masonry. It will not peel, crack or chip and can be washed repeatedly.

Exteriors—For beauty. For protection against the elements. For permanence. The cost is amazingly low.

Basement Treatment — After repairs to stop water seepage are completed, paint all walls with Luxstar Cement Paint. This provides added protection by sealing all hair cracks and surface pores, and gives an attractive wall finish.

Swimming Pools, Reservoirs—Luxstar bonds rigidly. It's easy to apply with wide brush or spray. It provides a lasting finish for concrete pools.

TO USE — Clean surfaces with a wire brush, then saturate with water. For each 10 lbs. of Luxstar add approximately 2½ to 3 quarts of water and mix until free from lumps and a smooth consistency. Apply with a wide brush or spray. When sufficiently set spray with clean water and keep damp for 24 hours or longer. Shipped in 100, 50 and 25 lb. sealed containers. Luxstar is made in White, Buff, Light Grey, Dark Grey, Red and Green. Coverage, approximately 25 sq. ft. per pound, one coat.

SURESEAL CURING COMPOUND

DESCRIPTION — Sureseal Curing Liquid is applied with brush or spray on the surface as quickly after finishing as is practical to avoid injuring the floor. It seals the surface, preventing evaporation of moisture, thus eliminating the necessity of damp curing. It protects the concrete from dirt and stains during construction.

COVERAGE — Approximately 200 sq. ft. per gal.

CERETINT CEMENT COLORS

DESCRIPTION — Ceretint Cement Colors are lime resistant, having a maximum of color strength and permanence. These high grade pure cement colors are used in all Ceresit products where material and color are combined.

COLORS — Supplied in Tile Red, Brick Red, Maroon, Buff, Brown, Terra Cotta, Black and Green.

CERESIT WATERPROOFING CORP.

GENERAL OFFICES & FACTORY • 512 S. CANAL ST., CHICAGO

An Expanding Metal Protection for Mortar Joints in Masonry.

Used in Copings, Cornices, Belt Courses Wall Tables and Sills.

PERFECTION JOINT COVER

PROTECTS AGAINST FROST AND MOISTURE

ELIMINATES PERIODIC REPOINTING

SATISFACTORY PERFORMANCE SINCE 1936

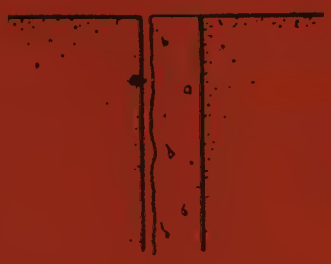
Joint Covers furnished for all Stone Courses and Copings 1941.

New York Power Corp., Steam Station, Oswego, N. Y., Stone and Webster Co., Engineers and Contractors.

DUSING & HUNT INC., BUFFALO 7, N. Y.

PERFECTION
JOINT COVER

WITHOUT JOINT COVER



a

The unprotected martor joint will—after the natural expansion ond cantractian of stane—invariobly develop cracks. As an obvious result, nat anly is the martor bond broken, but moisture will seep thraugh the crock ta saturate the masonry. This candition—especially when followed by frast—will invariably cause constant and increasing domage to the masanry and interiors as well ar will demand repeated repainting. Ta offset this costly conditian Perfection Joint Covers were designed.

JOINT PROTECTED WITH PERFECTION

b

Figure B illustrates haw the Perfection Joint Cover formed from ane piece af capper is embedded inta a typical masanry joint. Note that the mortor, completely protected by the joint cover from oll autside evaporotian, is permitted ta cure slowly and campletely and make a perfect band to the stone. It bonds so completely, thot in spite of a 25-pound test pull against the dom farmed under the cover, the mortar remained bonded to both stane surfaces. The "test" phatos at the right show the solid bed of properly cured ond thoroughly hardened mortar that was formed beneath the Perfection Joint Cover.

AFTER CONTRACTION OR EXPANSION

c

In this illustratian the stane has contracted and has caused the Jaint Cover to expand and the mortar af the joint belaw the Joint Caver ta crock. Both edges of the Jaint Caver are held stationory abave the dam causing the center of the V farm to expand. The top surfoce of the Jaint Cover slides over the copper surface below, which remoins stationary and keeps the expanded mortar joint fully protected. As o result, even if water is driven under the sliding cover, the one piece construction of the Joint Caver offers a continual protection ta the joint.

Perfection Joint Covers

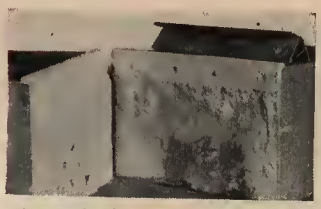
Illustrotion obove left shaws joint cover ofter setting ond ot right is shown how olthough contracting stone breoks the joint, the joint cover expands sufficiently to continue to give perfect protection.

A SIMPLE TEST INDICATING PERMANENT SEAL OF STONE JOINT Due to protection of copper cover a positive mortar bond, as illustrated below, is secured by slow hydration of mortar in joint and under Cover, and allows the bonding qualities of mortar to function.

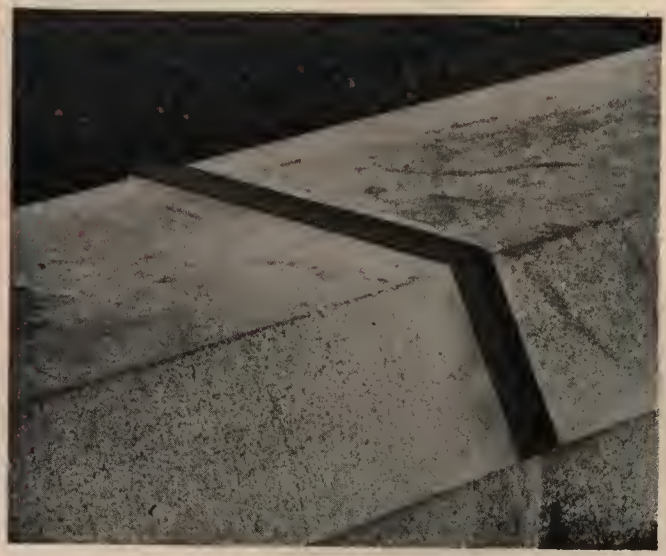
Clase-up of typicol stone joint ofter expansion or cantroction of stones tokes ploce.

Typicol stone joint mechonicolly exponded ⅝ in. wide, note how mortor under Joint Cover still remoins firmly bonded to stone surface even ofter this extreme movement.

An octuol scole test opplying 25-lb. pull ogoinst mortor dom formed under Joint Cover. Mortor still remains bonded to stone surfoce.



Shows broken stone joint ond depressions in mortor formed by onchor points of Cover. Note how full bed of mortor wos formed under the Cover.



DUSING & HUNT, INC.

Perfection Joint Covers

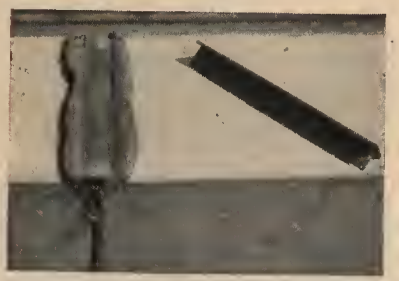
METHOD OF SETTING COVERS (SHORT FORM)

1. Bed stone jaint fully with regular mosan martar befare setting stane in place.

2. Allaw ¼" where stanes ta be jained meet.

3. Prepare Jaint Caver far setting and bed it with martar.

4. Place Jaint Caver inta stane jaint and press firmly inta position. Be certain that the vertical edges af Caver set flush upan the stane surfaces.



5. After Caver is set inta pasitian, the excess martar in the jaint and an the Caver will aaze aut, indicating a full bed af martar under the Caver.

6. After the Caver and Martar set a few minutes, the excess martor may be removed fram the stane surfaces. And if a cover is nat furnished far the end jaints, thase ends shauld be painted.

SPECIFICATIONS

Place Under Sectian far Cast ar Natural Stane ar Terra Catta.

The Stane Cantractar shall furnish and deliver to Mason Contractar (far setting) upon delivery af stone, Perfectian Jaint Cavers of 12-oz. lead caated capper as manufactured by Dusing & Hunt, Inc., 1927 Elmwaad Avenue, Buffala, N. Y., or equal.

Jaint Cavers ta be af self-centering and self-ancharing type, designed ta expand with the shrinkage af the stane and martar, remain permanently and rigidly anchared inta tap expased martar jaints af all capings, carnices, belt caurses and multiple sills.

This cantractar ta supply ta manufacturer ar their representative, capies af details af stane showing exact sizes and cantaurs sa cavers can be supplied ta proper dimensians.

Place Under Sectian far Masan.

This Cantractar shall refer ta the stane specificatians and set all Perfection Jaint Cavers as furnished and delivered ta him by the Stane Cantractar.

These Jaint Cavers ta be set accurately in accardance with manufacturers' instructions at the time stane is set, and cautian shauld be taken ta completely fill jaint caver with regular martar befare placing in jaint. See manufacturer's written instructians supplied with each shipment.

DUSING & HUNT, INC.

1927 Elmwood Avenue, BUFFALO 7, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

PARTIAL LIST OF USERS OF PERFECTION JOINT COVE

SCHOOLS AND UNIVERSITIES

M. I. T., Boston, Mass.
Manhasset Grade School, Manhasset, Long Island, N. Y.
Hampton Street Grade School • Jackson Avenue Grade School
Mineola High School Addition, Mineola, Long Island, N. Y.
Horace Greeley School, Chappaqua, N. Y.
Wellsville Elementary School, Wellsville, N. Y.
Edmeston School, Edmeston, N. Y.
Weedsport School, Weedsport, N. Y.
Central Grade and High School, Wappinger Falls, N. Y.
University of Rochester (Women's Dormitory), Rochester, N. Y.
Canisius College, Buffalo, N. Y.
Purdue University, Lafayette, Indiana
University of Minnesota, St. Paul, Minn.
Mass. Institute of Technology Boston Mass.

LIBRARIES

Davenport Public Library Davenport, Iowa
Rundal Memorial Library, Rochester, N. Y.

CHURCHES

Lutheran Church, Buffalo, N. Y.
St. Pauls Lutheran Church, Martinsville, N. Y.
St. Peters Church Skokie, Ill.

FACTORY BUILDINGS

Eastman Kodak Co., Rochester N. Y.
Hooker Electrochemical Company Niagara Falls N. Y.
National Gypsum Company, Clarence N. Y.
Arcade Sylvania Corporation Emporium, Pa.
Fairmont Creamery, Buffalo N. Y.
[illegible]-Tarrytown, Tarrytown, N.
[illegible] Various Plants
[illegible] Hershey Corp. • Linde A[illegible]
[illegible] Ansco C[illegible] Binghamton, N. Y.
[illegible] Dr Cas[illegible] Co Batavia N. Y.
[illegible]on Gould Co[illegible] Rochester N. Y.
[illegible] Market Building, Kansas City M[illegible]
[illegible] Arm Corp Cheektowaga N. Y.
[illegible] R Carter • Fanny Farmer Cand[illegible]
[illegible]n W[illegible] Co Racine Wis.

BANK BUILDINGS

Akron Savings & Loan Assoc Akron Ohio
[illegible] Trust Company Cleveland Ohio
[illegible] Bond Bu[illegible]ington N. C.
[illegible] Trust Co[illegible]ny [illegible]
[illegible] Building, Davenport [illegible]

OFFICE BUILDINGS

[illegible] • Time Zone Tire Co [illegible] N. Y.
[illegible] Old Elder Gre[illegible] N. Y.
[illegible] • Gulf Bu[illegible]ng Pittsburgh Pa.
[illegible] Cleveland [illegible]
[illegible] Life Insurance Co. [illegible]osto[illegible]
[illegible] Pennsylvania Harrisburg, Pa.
[illegible]fe Co. Nashville Tenn.
[illegible] & W Railroad Co Philadelphia Pa.

HOTELS

[illegible]ld Hote Cincinnati Ohio

STORES AND MERCANTILE BUILDINGS

Mar[illegible]n Store Rochester N. Y.
[illegible] & Pacific Tea Co Buffalo N. Y. and [illegible]
[illegible] Stores, Buffalo, N. Y. and [illegible]
[illegible] Park and Shop Building Elmira N. Y.
[illegible] Dresser Company Bradford Pa.
[illegible] T Grant Co. • F W Woolworth Co [illegible] S. S. Kresge Co. Various Locations
[illegible] Store, Greensboro, N. C.

HOSPITALS

[illegible]eral Hospital, Kansas City, Mo.
[illegible] Hospital, St. Paul, Minn.
[illegible] N Adam Memorial Hospital, Perrysburg, N. Y.
Columbus Hospital, Buffalo, N. Y.

PUBLIC UTILITIES

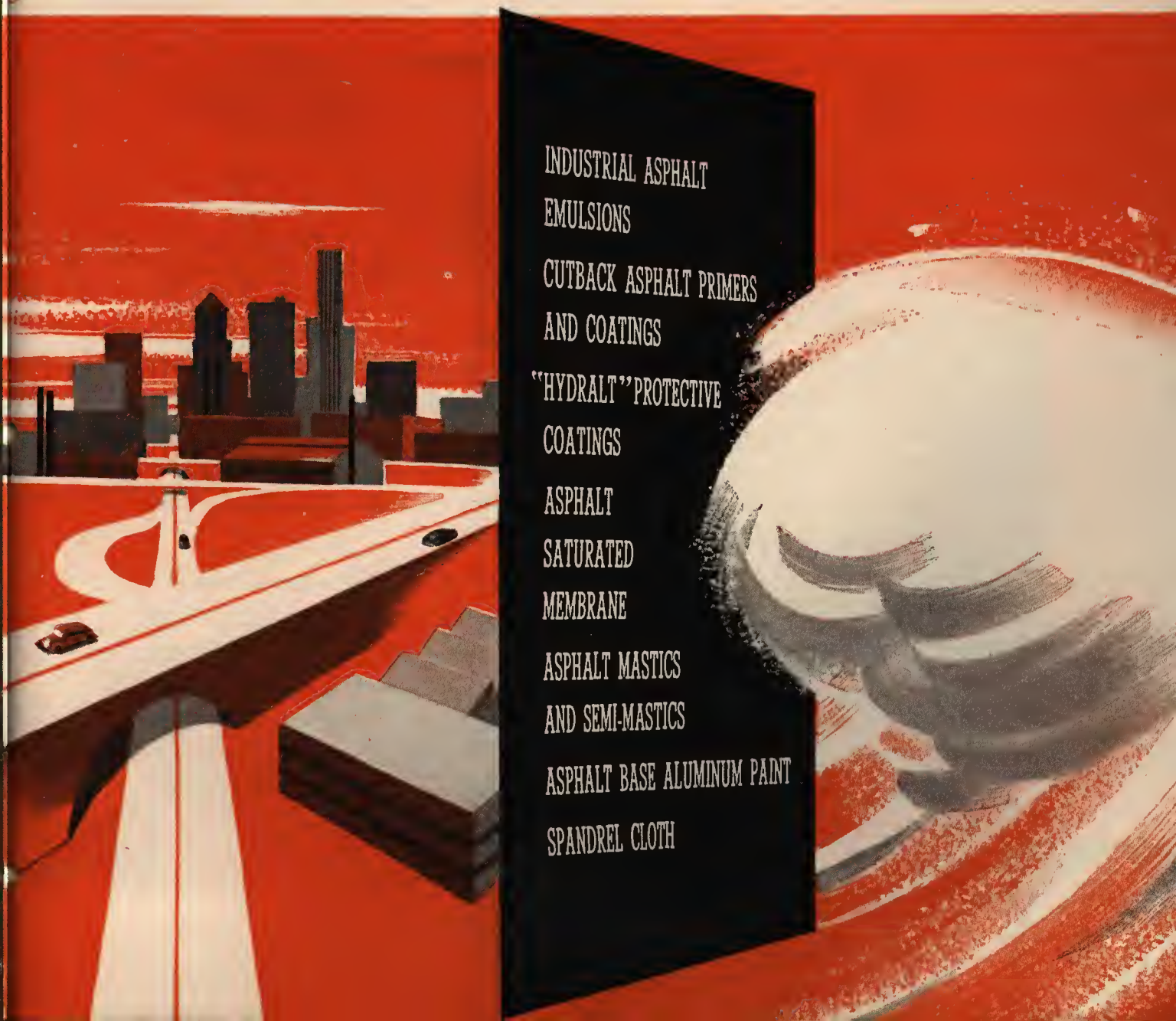
Pennsylvania Power & Light Co., Harrisburg, Pa.
Rochester Gas & Electric Co., Rochester N. Y.
Commonwealth Edison Co., Chicago, Ill.
Cincinnati Gas & Electric Co., Cincinnati, Ohio
[illegible]nois Bell Telephone Co., Peoria, Ill.
Niagara Hudson Corp. • Northwestern Bell Telephone Co. • [illegible] Bell Telephone Co., Various Locations
Southwestern Bell Telephone Co., Torrant, Ala.

STATE AND MUNICIPAL BUILDINGS

Public Works Building • City Hall, Buffalo, N. Y.
City Building, Coral Gables, Fla.
City Hall, Asheboro, N. C.
City Building, Binghamton, N. Y.
Public Works Office (Navy Yard), Washington, D. C.
County Building, Springfield, Ohio
Kenmore Post Office, Kenmore, N. Y.
Dept. Public Bldgs. & Properties, Indianapolis, Indiana
Fire and Police Station, Buffalo, N. Y.
Harrison County Court House and Jail, Bethany, Mo.
Indiana World War Memorial, Indianapolis, Indiana
Fire Station, Middletown, N. Y.
Armory Building, Columbus, Ohio

Flintkote

PRODUCTS FOR WATERPROOFING AND DAMPPROOFING



specific products designed for meeting water and dampness control problems

The Flintkote Company has been in existence for 48 years. During that time it has developed through consistent research and a wide technical service provided for its customers a line of water and weather resistant products. These products are designed to give the most efficient protection to metal tanks and structures, masonry foundations and walls, insulation materials, pipe lines and the like which are affected by water, weather, moisture vapor, smoke and ordinary acid fumes.

Flintkote "Protection" is synonymous with the *control* of water infiltration and moisture penetration into porous materials as well as with the resistance to weather and its effects upon both masonry and steel. Nearly five decades of roofing and protective coating experience have gained an enviable reputation for Flintkote products. Today, The Flintkote Company is one of the world's largest, if not the largest, manufacturers of mineral colloid types of asphalt emulsion coatings, to name one of the hundred or more products. By test and experience these coatings *will outlast any other form of bituminous coatings exposed to weather.*

FLINTKOTE INDUSTRIAL PRODUCTS

Masonry stadia are often protected with Flintkote's weather resistant coatings to control water seepage and infiltration of moisture.

Concrete grain silos resist weather better with Hydralt Protective Coatings, after which they may be given a light reflective surface with Flintkote Aluminum Paint.

Fairchild Aerial Surveys, Inc.

Structural concrete walls and footings below grade need surface applied water resistant coatings, often with membrane to reinforce them.

Housing projects of all kinds use Flintkote Spandrel Cloth as necessary protection to control rain, snow and wind driven moisture around beams, windows and doors.

FLINTKOTE INDUSTRIAL PRODUCTS

Flintkote Industrial Asphalt Emulsions and Cutback Asphalts

▶ The discriminating owner and builder must distinguish between the various types of asphalt and other bitumens which have been used through the ages as protective coatings over less resistant materials.

Hydralt* Protective Coatings and other Flintkote Asphalt Emulsions have fundamental advantages over asphalts reduced to fluid in a solvent and asphalts rendered fluid by the application of heat. They are made from selected asphalts, often blends of several, finely divided and dispersed in water by means of an emulsifying agent. Two advantages are these: first, highly ductile asphalts are selected because of their durability when exposed to weathering and, second, they may be used without heat or fear of fire.

A further and even greater advantage is that the dried films of these asphalt emulsions having a mineral colloid emulsifying agent do not sag, run or flow when subjected to the highest temperatures. Nor will they craze, crack or "alligator" under long exposure as will most types of solvent or hot asphalt coatings. The film remains elastic and smooth, resisting oxidation for many years when applied in the proper thickness. Samples of Flintkote Hydralt Protective Coating on steel have withstood continuous outdoor exposure in northern climate for as long as 19 years with no perceptible disintegration of surface film or evident rusting of the steel which it protects.

On the other hand, there are instances where weathering is a secondary factor, as in dustproofing masonry for good bonding of bituminous coatings and in coating the interior of exterior walls above grade to resist penetration of dampness through porous masonry. For these purposes Flintkote provides solvent type asphalt cutbacks of both painting and troweling consistency, each made according to proven specifications.

It is suggested that, in view of the many complicated problems involved, a Flintkote representative be consulted on the selection of materials for the particular project.

Hydrolt Protective Cooting under the microscope. This is o thin film of minerol colloid ospholt emulsion magnified 300 times. Above, the wet film ot time of opplicotion. Below, the dried film with the ospholt woshed out by meons of o solvent to show the interlocking reinforcement formed by the minerol colloid.

*Hydrolt is the brand name for Flintkote Industrial Asphalt Emulsion Coatings of the stable, non-flowing, non-staining, minerol colloid type.
*Reg. U. S. Pat. Off.

Product	Description	Recommended Uses
FLINTKOTE ASPHALT PRIMER	A thin penetrating cutback asphalt primer.	Ta dustproof and prepare masanry surfaces for the application of asphalt coatings.
FLINTKOTE CUTBACK NO. 211	A non-fibrated, highly flexible liquid asphalt.	For brush or spray applicatian to interior of exterior walls (abave grade) and ta exterior walls (below grade) under minimum dampness candi-tions.
FLINTKOTE SEMI-MASTIC NO. 214	A fibrated cutback asphalt for brush application only.	For interior of exterior walls (above grade) to provide intermediate film thickness. Also suitable far control of water on exterior masonry walls below grade.
FLINTKOTE TROWEL MASTIC	A heavily fibrated cutback asphalt for trowel applicatian only.	For interior of exterior walls (above grade) under severe conditions where heavy film thickness is desirable. Also suitable for cantrol of water on exteriar masanry walls below grade.
FLINTKOTE HYDRALT* PROTECTIVE COATING —TYPE C-13-E —TYPE NO. 76	Non-fibrated Industrial Asphalt Emulsion, especially formulated to resist water and dampness. Apply at temperatures over 40 degrees F.	For spray or brush application to interiar of exterior walls (abave grade). Assures excellent bond in presence of dampness in the walls at times af application. Also suitable for pratecting steel against corrosion in excessively damp or wet locations and for control of water on exterior walls below grade.
FLINTKOTE HYDRALT PROTECTIVE COATING —TYPE C-13-A	A fibrated Industrial Asphalt Emulsion. Apply at temperatures over 40 degrees F.	For trowel application as a protection course to resist abrasion, over water praofing coatings below grade and over insulation materials.
FLINTKOTE MOPPING ASPHALT	A highly ductile asphalt for hot application.	For hot mopping all types of membrane materials in waterproofing work.
FLINTKOTE NO. 70 EMULSION	A stable, quick-setting soap type emulsified asphalt. Dries to a tacky finish.	For use on surfaces not exposed to weather such as covered masonry walls and interior steel. Applied by spray or brush.
FLINTKOTE ASPHALT SATURATED MEMBRANE	An open mesh, asphalt saturated cotton membrane, 36 in. wide, in ralls, 50 lineal yards. Alsa made in narrow widths.	For use as reinforcing membrane combined with hat asphalt or asphalt emulsions. One or more plies are used for maximum protection, depending upon conditions.
FLINTKOTE SPANDREL CLOTH	A catton membrane treated to prevent mildew attack and rotting, coated both sides with flexible asphalt coating. Tough and durable, finished weight 40 oz. per sq. yd.	For spandrel beam treatment in control of water seepage through walls and around door and windaw headings.

*Reg. U. S. Pat. Off

FLINTKOTE INDUSTRIAL PRODUCTS

Specifications

FLINTKOTE PRODUCTS FOR PROTECTION AGAINST WATER AND DAMPNESS

GENERAL DISCUSSION—Waterproofing and dampproofing are processes which depend for their success upon a clear understanding of the problems involved. Above ground and below grade conditions may be vastly different. Well drained soil and a temperate climate will present a simpler problem than poorly drained, heavy soil, where hydrostatic pressures exist or where excessive rainfall or high humidities are commonplace. Quality materials correctly applied by experienced contractors in accordance with approved specifications drawn for the conditions encountered will provide assured protection. But they will not overcome defects in the structure itself. The length of time that a seal or coating remains intact and provides a continuous barrier is the life of the process.

PREPARATION OF SURFACES—The surface to be coated shall be free from sharp rock projections, nails, wire, etc., or anything that prevents coating with a continuous film. Holes, joints and cracks shall be pointed up, door and window frames caulked and surfaces cleaned of dust, dirt, scale and loose particles.

COATING EXTERIOR OF WALLS (below grade)—(1) Use of membrane to reinforce the coating on areas subject to wet ground conditions. Apply a coat of Flintkote Asphalt Primer to cleaned wall at the rate of 1 gallon per 100 sq. ft. and allow to dry. Follow with Flintkote Mopping Asphalt, applied hot, into which is embedded Flintkote Asphalt Saturated Membrane in the following manner:

The first strip shall be of half width; the second of full width; lapped completely over the first sheet; and the third and each succeeding strip shall be full width and lapped half width so that there will be two layers of

fabric at all points with head laps not less than 2 inches wide. All end laps shall be at least 12 inches. The entire surface then shall be given a final mopping of hot asphalt. Under no circumstances shall one layer of fabric touch another at any point, or show on the surface. There must be at least three complete moppings of asphalt for 2-ply membrane waterproofing.

An alternate for intermediate conditions is to prime the wall with Flintkote Asphalt Primer, allow it to dry, and then apply 1 ply of Flintkote Asphalt Saturated Membrane, lapped at least 4 inches, and embedded in hot applied Flintkote Mopping Asphalt.

(NOTE: For excessive hydrostatic pressure or unusual conditions, additional plies of membrane may be required.)

(2) For moderate exposure and intermittent contact with water. Apply Flintkote HYDRALT* Protective Coating C-13-E or No. 76—preferably in two coats to a total film thickness of not less than 3 gallons per 100 sq. ft. For ease of application, this Industrial Asphalt Emulsion may be diluted slightly with clean, cool water. The coating may be applied by brush or spray and shall extend beyond the bottom of the wall over a concrete or mastic cove built at the juncture of the wall and footing. Backfill carefully to avoid damage to the coating. If subject to abrasion, use fibrated Flintkote Hydralt Protective Coating Mastic—Type C-13-A—applied by trowel over the Flintkote Hydralt Protective Coating—C-13-E or No. 76—to build up film thickness. Strips of Flintkote Asphalt Saturated Membrane should be embedded between the two applications of protective coating over construction joints, cracks or other points of weakness.

*T. M. Reg. U. S. Pat. Off.

PROTECTION COURSE—Cement mortar, brick set in hot asphalt mastic, asphalt plank, insulation board or asphalt mastic should be provided over exterior waterproofing of all types below grade where backfilled. For special conditions involving free running water, acid or alkaline solutions, apply to The Flintkote Company for detailed instructions.

COATING EXTERIOR OF WALLS (above grade)—For wall sealing and control of water and dampness apply a coating of Flintkote Hydralt Protective Coating—C-13-E or No. 76—preferably in two coats to a total film thickness of not less than 3 gallons per 100 sq. ft. The first coat of 1 gallon per 100 sq. ft. may be diluted with approximately 5% of cool, clean water to serve as the priming coat. After drying, this is followed by application of the second coat of 2 gallons per 100 sq. ft. Light reflectivity may be achieved by the further application of Flintkote (asphalt base) Aluminum Paint. ▼

◀ **COATING THE INTERIOR OF EXTERIOR WALLS** (above grade)—For resistance to dampness apply a coat of Flintkote Trowel Mastic to the cleaned wall, in and around all chases, grooves or slots, around all columns and other projections and following all breaks in walls, turned out 12 inches on ceiling and floor arch. This coating shall be at least ⅛ inch thick when dry—covering capacity 12 sq. ft. per gallon. (NOTE: If troweling is impractical, apply two coats of Flintkote Semi-Mastic No. 214 by brush at the rate of not less than 1 gallon per 80 sq. ft. each coat.)

FLINTKOTE INDUSTRIAL PRODUCTS

Flintkote Membrane and Spandrel Cloth

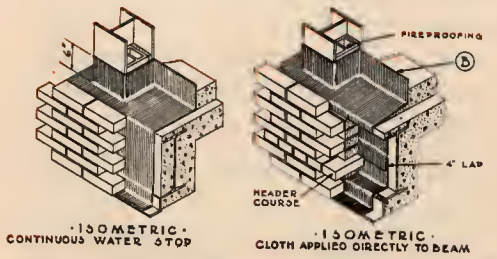
Two products which are highly important in building adequate protection against water and dampness into structures of all kinds are Flintkote Asphalt Saturated Membrane and Flintkote Spandrel Cloth.

Asphalt Saturated Membrane serves to reinforce either hot or cold applied coatings. It is an open mesh, asphalt saturated cotton membrane having high tensile strength. Placed in successive plies, each coated with water resistant asphalt, it builds up a tough durable barrier which is effective as long as the covering remains intact.

Flintkote Spandrel Cloth is cotton membrane coated both sides with flexible, high ductility asphalt. Too much emphasis cannot be placed upon the importance of including it in the design. It forms a continuous sheet to stop water at spandrel beams, lintels, window heads and sills. It is manufactured to give tough, durable rot-proof service. Embedded and coated with Flintkote Trowel Mastic, Flintkote Spandrel Cloth will give water-proofing protection at these critical points. Complete specifications will be furnished upon request.

THE FLINTKOTE COMPANY • Industrial Products Division
30 Rockefeller Plaza, New York 20, N. Y.

Details of Installation



ISOMETRIC · CONTINUOUS WATER STOP

ISOMETRIC · CLOTH APPLIED DIRECTLY TO BEAM

The Industrial Products Division of The Flintkote Company maintains a staff of engineers and technical field representatives whose services are available without obligation for consultation in preparing specifications and in developing job techniques. Call or write the nearest office.

FLINTKOTE INDUSTRIAL PRODUCTS

FLINTKOTE products for Industry

District Offices • Industrial Products Division

ATLANTA, 1215 Sylvan Road, S. W.
BOSTON (16), 925 Park Square Building
CHICAGO HEIGHTS, 17th Street and Wentworth Avenue
DETROIT (27), 14201 Schaefer Highway
NEW ORLEANS (4), Poland and Galvez Streets
WASHINGTON (6), 1917 Eye St., N.W.
PIONEER DIVISION—THE FLINTKOTE COMPANY, LOS ANGELES (54), 55th and Alameda Streets

Driwal

FOR DAMP-PROOFING, STAIN-PROOFING, AND DIRT-PROOFING, EXTERIOR STONE, BRICK, CONCRETE, AND OTHER POROUS MATERIALS

A Billings-Chapin Product

THE GLIDDEN COMPANY

Driwal is a different damp-proofing material and it has been used to preserve many of the finest buildings for a number of years. See the list on page 4.

PURPOSES OF CLEAR DRIWAL

While damp-proofing is a primary purpose of Clear Driwal, stain-proofing is a field of almost equal importance. Clear Driwal is a colorless damp-proofing, stain-proofing and dirt-proofing preparation. Clear Driwal prevents stains, spotting and general discoloration resulting from smoke, soot and grime. It also withstands discoloration from salts, alkalies, sulphides which may be present in building materials.

Clear Driwal will check, if not entirely prevent efflorescence.

Clear Driwal is of special merit for preserving the beauty of Indiana limestone.

The breaking and crumbling of concrete and mortar due to freezing of water which has penetrated the surface may often be eliminated by proper treatment with Clear Driwal.

HOW CLEAR DRIWAL ACTS

Clear Driwal does not form a film. It impregnates the pores with a transparent, insoluble material which damp-proofs, stain-proofs, dirt-proofs and preserves. In no way does it impair or conceal the natural beauty of fine texture and color.

Thinners or reducers of any kind should never be added to Clear Driwal.

Clear Driwal will not remedy faulty construction nor will it damp-proof sizable cracks or voids. It will not remedy weak or crumbling mortar joints which should be repointed prior to the application of Clear Driwal.

HEAVY BODIED CLEAR DRIWAL

For masonry surfaces of greater than average porosity, Heavy Bodied Clear Driwal may be found more suitable than Clear Driwal. This material is merely a heavier bodied form of Clear Driwal. It serves a similar purpose and should be similarly applied.

COVERAGE

Clear Driwal will ordinarily cover on cement, stucco, concrete or brick, at least 125 to 175 sq. ft. to the gallon on its first application, at least 175 to 225 on the second application. On stone the coverage is from 175 to 225 sq. ft. per gallon on the first application, and from 225 to 275 on the second application.

DAMP-PROOFING

Damp-proofing Natural and Artificial Stone, Brick, Stucco, Mortar and Other Porous Material with Clear Driwal.

STAIN-PROOFING

Stain-proofing Cut Stone and Cast Stone with Clear Driwal.

DIRT-PROOFING

Dirt-proofing Natural and Artificial Stone, Brick, Concrete, Stucco, Mortar, and other Porous Masonry with Clear Driwal.

QUALITY Glidden PRODUCTS

SPECIFICATIONS

INSTRUCTIONS—Surface must be dry, free from dirt, stone dust, scales or loose particles. Repoint all weak, crumbling or shrunken mortar joints and repair all cracks. Caulk around windows and door frames where necessary.

Add no thinners of any kind.

All exterior masonry including mortar joints shall be given two applications of Clear Driwal, allowing 24 hours between applications.

BRUSH APPLICATION—Apply Clear Driwal with stiff bristle or short stubby brushes and work the material well into the pores of the surface. Apply in clear Dry weather with temperature not lower than 60° F.

SPRAY APPLICATION—A pressure of from 60 to 80 pounds should be maintained at nozzle.

The John and Mable Ringling Museum of Art, Sarasota Florida. Damp-proofed and stain-proofed with Clear Driwal.

PRIOR TO SETTING—All stone must be thoroughly brushed off and the stone must be in a dry condition. All surfaces of the stone except the outside face shall be given one saturating application of Clear Driwal.

Add no thinners of any kind.

AFTER SETTING—After the building has been cleaned, pointed and allowed to dry thoroughly, the face of all stone and mortar joints shall be given one or two applications (optional) of Clear Driwal, allowing 24 hours between applications.

BRUSH APPLICATION—Apply Clear Driwal with stiff bristle or short stubby brushes and work the material well into the pores of the surface.

SPRAY APPLICATION—A pressure of from 60 to 80 pounds should be maintained at the nozzle.

One of the many historic buildings of the Williamsburg restoration where Clear Driwal has been extensively used for beauty and protection.

INSTRUCTIONS—Surface must be dry, free from dirt, stone dust, scales or loose particles. Repoint all weak, crumbling or shrunken mortar joints. Caulk around windows and door frames where necessary. Repair all cracks. All exterior masonry including mortar joints shall be given one or two applications (optional) of Clear Driwal, allowing at least 24 hours between applications.

BRUSH APPLICATION—Apply with stiff bristle or short stubby brushes and work material well into the pores of the surface.

SPRAY APPLICATION—A pressure of from 60 to 80 pounds should be maintained at the nozzle.

QUALITY Glidden PRODUCTS

Public Library, Birmingham, Alabama.

Driwal

A FEW OF THE BUILDINGS WHICH HAVE BEEN DAMP-PROOFED AND STAIN-PROOFED WITH CLEAR DRIWAL

The Burroughs Welcome Building
New York, N. Y.

Roosevelt High School
Des Moines, Iowa

New England Telephone Co. Bldg.
Lynn, Mass.

San Jacinto Life Bldg.
Beaumont, Tex.

U. S. Post Office
Marlboro, Mass.

Niagara Falls High School
Niagara Falls, N. Y.

Lima Trust Company Bldg.
Lima, Ohio

New York Telephone Co. Bldg.
Barclay and Vesey Sts.
New York, N. Y.

University of Detroit
Detroit, Mich.

Baker Building
Minneapolis, Minn.

Christian Science Home
Concord, N. H.

East Ohio Gas Co. Bldg.
Cleveland, Ohio

Municipal Auditorium
New Orleans, La.

Geo. M. Diven School
Elmira, N. Y.

Queens General Hospital
Jamaica, N. Y.

135th Street Y.M.C.A. Bldg.
New York, N. Y.

St. Vincent's Church
Buffalo, N. Y.

Church of Perpetual Adoration
Mount Ranier, Md.

U. S. Post Office
Framingham, Mass.

North Methodist Church
Indianapolis, Ind.

Blessed Sacrament Church
Birmingham, Ala.

Chamber of Commerce Bldg.
Minneapolis, Minn.

Public Library
Birmingham, Ala.

The Parthenon
Athens, Greece

Museum of Fine Arts
Boston, Mass.

Merchants National Bank Bldg.
Mobile, Ala.

Advance Rumely Bldg.
Omaha, Nebr.

The Democrat Bldg.
Davenport, Iowa

Grace Methodist Church
Dayton, Ohio

City Hall
Columbus, Ohio

U. S. Post Office
Fort Worth, Tex.

Convent of Good Shepherd
Toledo, Ohio

U. S. Naval Reserve Armory
Bay View Park
Toledo, Ohio

American Storage Warehouse
Washington, D. C.

Cincinnati Times-Star Bldg.
Cincinnati, Ohio

Boston Penny Savings Bank
Boston, Mass.

Masonic Temple
Lawrence, Mass.

Democrat & Chronicle Bldg.
Rochester, N. Y.

Security Trust Co.
Rochester, N. Y.

Powers Hotel
Rochester, N. Y.

TIME-TESTED
PAINTS • VARNISHES • LACQUERS • ENAMELS

A Billings-Chapin Product

THE GLIDDEN COMPANY

National Headquarters • Cleveland 2, Ohio

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Fort Worth, Texas
Honolulu, T. H.
Houston, Texas
Huntington Park, Calif.
Jacksonville, Fla.
Knoxville, Tenn.
Miami, Fla.
Minneapolis, Minn.
Mobile, Ala.
Montreal, Can.
Mt. Vernon, Ill.
New Orleans, La.
North Bergen, N. J.
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St. Louis, Mo.
St. Petersburg, Fla.
Scranton, Pa.
Tampa, Fla.
Toledo, Ohio
Toronto, Can.
Washington, D. C.
West Palm Beach, Fla.

FORMULA No. 640—A Clear Liquid

For Waterproofing and Preserving Stone, Cast Stone, Concrete, Concrete Blocks, Cement Mortar, Lime or Cement Stucco, Tile, Brick, Plaster, Wood, Wall Board, — in fact any material which will absorb it.

FORMULA No. 640

is a clear transparent liquid, made up of certain compounds dissolved in a hydrocarbon base. The hydrocarbon carries these solids in solution into the stone, evaporates, leaving the voids of the stone filled with a hard mass thus preventing the transmission of water, and renders the surface resistant to acids, alkalies, fats, or petroleum products. The compounds are gotten into solution through temperature and pressure. It cost thousands of dollars and years of experimentation to evolve this formula. Will not freeze nor deteriorate in storage.

PENETRATION

Formula No. 640 has almost unlimited penetration. It is drawn into the voids by capillary attraction due to the affinity which it has for stone. Tests have proved that it will penetrate a 1¼" slab of Indiana limestone and collect in drops on the under side. It also creeps or "fans out" into the stone.

APPLICATION

Use Formula No. 640 just as it comes from the container. Application may be made by a spray, brush, or it may be floated on a floor and spread with a squeegee or mop. It is harmless to hands.

COVERING CAPACITY

For masonry surfaces above grade, we recommend a two coat application requiring one gallon for each 75 to 100 square feet for the two coats. On the inside below grade, allow one gallon for each 50 square feet for the three coats recommended.

MATERIALS WHICH MAY BE TREATED

Any material into which Formula No. 640 will penetrate may be treated successfully.

OVER WATER BASE AND UNDER OIL BASE PAINTS

Any powder mixed with water and applied to a masonry surface is a cement paint and should be applied first, cured properly, thoroughly dried, and Formula No. 640 applied over it. Oil base paints and enamels should be applied after the wall has been treated with Formula No. 640.

BASEMENTS

Below grade structures can be made watertight with Formula No. 640 applied on the inside at a minimum of expense. The following precautions should be observed:

1. Hairline Cracks
   These cracks are usually due to shrinkage because of improper curing. They are mostly surface cracks and do not extend an appreciable distance into the concrete. Formula No. 640 will penetrate all the way to the bottom of these cracks sealing around them. Hence no special preparatory cementing is necessary.
2. Cleavage Cracks
   When new concrete is placed on old, hardened concrete, the bond is defective and water will seep through under pressure. This happens when a wall is placed on top of a concrete floor, or when part of a monolithic construction is interrupted in construction. The only remedy is to rake out the joint to a depth of about a half an inch and reseal with a new cement mix which must be cured properly.
3. Settlement Cracks
   Some years after construction, settlement cracks may appear. These must be treated the same as cleavage cracks.
4. Porosity
   The improper manufacture of cement blocks causes the most trouble. If the blocks are too lean in cement, the aggregate not properly graded, and they are not properly tamped and cured, the blocks will be of such high porosity and many times with interlinking holes through the blocks, it is necessary to apply a cement wash coat or a cement paint to the blocks before waterproofing. This applies also to coarse light weight aggregates. Above grade, Formula No. 640 will render these blocks sufficiently repellent to prevent the seepage of water, but under hydrostatic head, guaranteed results can only be obtained by using a cement slurry or a cement paint. While this condition occurs very infrequently since most cement blocks are of excellent quality, nevertheless it is recommended that a concrete block wall subjected to a considerable hydrostatic head be carefully inspected for density, holes, and mortar failure.

BRICK

We have seen brick walls, newly repointed, which leaked badly, rendered absolutely watertight with Formula No. 640 at nominal expense.

WHAT FORMULA No. 640 WILL NOT DO

1. It will not penetrate through oil paint.
2. It will not fill cracks except hairline. See detailed instructions.
3. It should not be applied at a temperature of less than 60 degrees.
4. It should not be applied over bituminous compounds.

EFFLORESCENCE

The unsightly appearance of salts depositing on the surface can be stopped positively with Formula No. 640 because it prevents water from passing either in or out of the surface.

ACIDS

Formula No. 640 does not react with acids. To protect various surfaces from acids, see our special folder on "The Resistance of Formula No. 640 to Acids".

ALKALIS

Leakage of hot caustic through concrete floors has been stopped with the application of Formula No. 640.

DUSTING

Farmula No. 640 prevents the dusting af cancrete floors subjected ta heavy traffic. Floors, so treated, will resist the penetratian of ail fram sweeping campaunds and are easier ta clean.

PERMANENCE

The solids in Farmula Na. 640 are inert. By penetrating deeply into the masanry surface—one inch ar mare, the permanence af the seal will far exceed any mere surface treatment.

METAL LATH and REINFORCEMENT IRON

By stopping the absorptian af water, metal reinfarcements in cancrete will not rust which causes staining, and even spalling, as well as a loss of strength.

HOLDS 1250 lbs. WATER PRESSURE

A twenty faat concrete tank treated aver five years ago with Formula No. 640 in which drinking water is stared has nat leaked a drap although the pressure on the battom part is 1250 pounds per square faat.

WHAT FORMULA No. 640 DOES NOT CONTAIN

There is no paraffin, no sadium silicate, na fluasilicate, no aluminum ar calcium stearate, na oil af any kind in Farmula No. 640.

Formula No. 640 is not a surface treatment; it is not necessary to apply it to the pressure side; its application requires no complicated technique; it is applied three times as fast as paint; it penetrates wherever water will penetrate, and deeper, sets, and becomes an integral part of the material.

Formula No. 640

SPECIFICATIONS—DIRECTIONS

PREPARING THE SURFACE

Clean the surface tharoughly. Remave any ald ail paint. Wire brush away loase particles. If a 20% muriatic acid solutian is brushed an the surface ta remave efflarescence and bleach aut stains be sure ta fallow with a clear water wash. Use Hayprac Oil & Grease Cutter ta remave heavy ail and grease depasits. To clean large areas sandblasting is recammended. Fill all small cracks (except hairline) and holes with a cement paste (Portland cement and water), ar Plaster af Paris (Calcium Sulphate). If the cracks are mare than ½ inch wide use a martar af one part cement and twa parts sand with very little water—enaugh to make a thick paste, but not so much that free water may be squeezed out by compressing with the hand. Be sure the area to be filled is clean, and all sectians are wide enough to admit the mortar. Thoroughly saturate the opening and surrounding area with water. While still damp, but no free water can be seen, pack in the mortar. Slight vibratian will help compact the mortar on flaors. Finish with a trowel. As soon as the mortar has taken its initial set, so it will not show brush marks, sprinkle well with water, and then immediately spray or brush a light coat of Formula No. 640 over the mortar and for several inches to either side. This seals the water in and allows the cement to cure properly. Please nate that this operation merely coats the wet surface —it does not penetrate and hence does nat waterproof. If damp coverings are used instead of Formula Na. 640, keep them saturated with water for at least 72 hours. In either case allow the mortar to cure far at least seven days (14 would be better) before waterproafing with Formula No. 640. Wait for the area ta dry tharaughly befare application.

DIRECTIONS

Be sure the surface is clean and dry, and that all cracks, hales, and apen jaints are cemented up, praperly cured, and allowed ta dry. Brush, spray, squeegee, ar map Formula Na. 640 on surface until the penetratian slaws dawn to a point where the surface remains wet far 15 secands after applicatian is stapped.

Use the number of applications as indicated in specificatians. Allaw about twenty-four haurs between applicatians ar in warm well ventilated places, less time may suffice. When the surface has taken on its original appearance another coat may be applied.

Farmula Na. 640 will waterproof any material which it can penetrate. The langer Formula No. 640 is in cantact with the surface the deeper the penetratian.

IMPORTANT: Must be applied at a temperature of 60° F. or higher.

CAUTION: Will burn if expased directly to a flame, otherwise non-hazardous.

MATERIALS

Formula No. 640 sold by the Haynes Products Campany, Omaha 3, Nebraska. Apply exactly as it cames fram the container. The temperature, at time of application, should be 60 degrees F. or higher.

APPLICATION

A normal applicatian af Formula No. 640 means keeping the surface wet with excess liquid far at least 15 seconds.

1. One coat applicatian: One caat is sufficient to prime waad, plaster, dense stane, brick, or cancrete far oil paint. We recammend adding 5% to 10% af Farmula No. 640 ta the paint. This pulls the paint into the pores; prevents bleeding af the ails in the paint, or their sapanification by the alkalies in the cement, and retards their oxidation. Coverage: 200 square feet per gallan.
2. Two coat application: Fits most conditions above grade where it can be applied to the pressure side, such as the outside of buildings and an floors. Usually sufficient to prevent flaor dusting. Coverage: 75 ta 100 square feet per gallon for the two caats.
3. Three coat applicatian: Indicated belaw grade where the walls and flaors are ta be waterproofed on the inside against a hydrostatic head on the outside; also to resist dilute acids and alkalies. Where the building material is unusually porous, outside and above grade, three coats may be necessary. It is well to attempt a third coat to check rate of absorption. If Formula No. 640 is absorbed rapidly, apply a third coat, but if it remains on the surface for thirty seconds or longer the preceding two coats are sufficient. Coverage: 50 square feet per gallon for the three coats.
4. Four coat application: Indicated where it is necessary to protect the surface from strong acids or alkalies. Sufficient coats must be given so that some of Formula No. 640 will remain on the surface.

GUARANTY

We guarantee that our products, if applied according to our directions, will live up to our claims.

FORMULA No. 640 TOXIC for TERMITES, beetles, lice, mites, ants, mildew, fungi, decay, blue stain.

Formula No. 640 Toxic (toxic value equivalent to full strength creosote) is a combination of three different concentroted phenols: Chloro-orthophenyl-phenol, Pentachlorophenol, and Tetrachlorophenol—10% added to our waterproofing Formula No. 640. Termites will not build their tubular runways over, nor come close to Formula No. 640 Toxic. Neither will other insects. Break the chain between the ground and the wood and termites will die. Triphenol treated wood stakes have lasted over eighteen years in termite infested territory. Damp, humid rooms grow fungi. Creameries, laundry rooms, etc. can be waterproofed and fungiproofed at the same time with Formula No. 640 Toxic. Canvas treated with Formula No. 640 Toxic in soil infested with Chaetomium Globosum and Aspergillus Niger showed no growth at the end of ten days. Used outside or inside. Brown tinted liquid, contains no pigment, colorless when dry. Brush, spray, or dip.

HAYPROC CEMENT PAINT—with Hydrator

A brilliant white pigmented finish for rough concrete, concrete blocks, brick, stucco, etc., walls (not floors). Extremely porous concrete blocks such as some light weight aggregate blocks, or walls with crumbly mortar joints should be given two coats before waterproofing. The hydrator aids curing, increases adhesion and gives a harder finish. Covers from 100 to 125 square yards per hundred pounds.

PYROCYDE

A flameproofing for fabrics. A clear, heavy liquid. Fobrics will char but not burn. Nonpoisonous.

HAYPROC GILSONITE PAINTS

For slate, metal, ond concrete roofs, walls, all outside metal: fire escapes, tanks, bridges and machinery. Resists acid and alkali fumes ond salt water better than oil paints. Withstands 450 degrees F. Comes in red, green, and black. Made of gilsonite asphalt gums, pitch, oils, and color pigments. Covers 400 square feet per gallon on metal.

TEX

A transparent waterproofing for all textiles such as tents, ownings, tarpaulins, binder canvas, etc. Fungi and mildew resistont (new World War II fungicide). Treats 100 to 200 square feet per gallon.

H C H

HAYNES CEMENT HARDENER

HCH is a pink liquid which hardens and densifies concrete products. It is not for use on natural stone, brick, plaster, or wood—only products made with Portland cement which are 14 days old or older.

Concrete floors disintegrate rapidly when subjected to oils and greases and chip off quickly through the continuous use of steel wheeled hand trucks or other heovy traffic.

To prevent this, the concrete must be hardened, densified, ond rendered impervious to the action of oils and water.

Our combination HCH-Formula No. 640 Treatment does this, quickly and economically.

This treotment will give a very hard surfoced floor which extends from ⅛ to ¼ inch below the surface and will protect the floor under ordinary conditions of heavy traffic for years.

Steel wheeled hand trucks, heavy foot traffic, will cause no appreciable dusting or wear, the floor will be brighter in appearance, will be easier to keep cleon, water, oil or grease will not penetrate it and even dilute acids will not cause erosion. Note: Strong acids require heavier applications of Formula No. 640 to effectively protect the concrete—ask for our special bulletin on "Acids and Formula No. 640." Concrete vats and tanks will store mineral and vegetable oils satisfactorily with this treatment. The covering capacity of HCH varies from 100 to 200 square feet per gollon—old concrete floors already soaked with oils should be cleaned with Hayproc Oil & Grease Cutter, designed to neutralize oil deposits so they may be hosed away, and the floor left prepared for the HCH-Formula No. 640 Treatment.

HAYPROC FLOOR RESURF

Levels An Outside Walk—Illustrated Below.

HAYPROC FLOOR RESURF

A mostic. Asphaltic emulsion base floor resurfacer. No heat. Dries to a dark gray, also patches ruts, holes and breaks in all kinds of floors, docks, driveways. Mixed with sand, cement and water. In 36 hours it gives a resilient, slip proof, smooth surfaced floor which will withstand heavy traffic and trucking. 15 gallons (mixed as above) will cover 120 square feet ½" thick. Use with primer.

HAYPROC RESURP—primer for above.

Bonds the Mastic with the floor. For each 55 gal. drum of Resurf use 10 gallons of Resurp.

HAYPROC OIL & GREASE ABSORBENT

Small granules which have a particular affinity for oils and greases, rapidly absorbing them. Has a slight bleaching action. For use on concrete, stone, or wooden floors, removing grease and dirt accumulations no matter how thick.

HAYPROC OIL & GREASE CUTTER

A cancentrated liquid which, when diluted with 4 to 10 parts of water, makes an effective solution for removing heavy ails and greases. It is used an cancrete ar wood flaars, walls, metal surfaces, or wherever there is oily dirt. It is nan-flammable, odarless, deadarizes and sterilizes, works chemically thus reducing labar. It may be sprayed on machinery. The residue is easily washed away with water. Leaves the surface clean and bright.

HAYPROC PAINT REMOVER

A creamy liquid which rapidly disintegrates oil paint, enamel, and varnish no matter haw ald. It is nonflammable, works quickly, is odarless, and can be scraped aff or washed away with water. Clean up requires na dangeraus or expensive salvents.

M-C PAINT REMOVER

Lifts any paint, varnish, lacquer, or synthetic resinous enamel. Harmless to metal ar wood. Nan-flammable. Safe. Works fast.

HAYPROC ASPHALTIC CONCRETE COATING

Asbestas Fibred foundation coating far application to exterior walls before backfilling. No heating. Keep out moisture.

HAYPROC RUST REMOVER and CLEANER

A mixture of powdered chemicals packed in one pound tubes. Makes three gallons of rust remover solution. (As a cleaner makes 10 gallans). For removing rust stains on masanry surfaces.

HAYPROC KAWKER

Remains pliable far years, stands vibration. Will nat shrink nar pull away. Does not bleed ar stain. Meets government and architect's specificatians. Tung oil base. Finest caulk made. Colors: Natural, gray, red, buff, black, and brawn. Specify gun or knife grade.

HAYPROC KAWKER KARTRIDGE

Cartridges made to fit guns. Keeps compaund fresh, no bubbles, charges gun quickly, no mess, no waste, better application. Inexperienced men can da a good jab. Calars: Natural and Gray.
Packed 10 and 25 cartridges to cartan.
Special colars made up on orders for 500 cartridges ar more.

HAYPROC ALL PURPOSE CLEANER

A mixture of three powerful crystaline detergents, ane the new Mercal St., a petroleum sulphonate. Na filler. Cleans walls, floors, painted surfaces quickly, and economically.

HAYPROC CONCRETE FLOOR ENAMEL

Rubberized synthetic resin base. Glassy hard finish. Withstands heavy traffic. Resists concentrated sulphuric, fuming nitric, and ather acids, also water, alcohol, gasaline, ail and caustics. Tile red, light ar dark gray, and white. Coverage 450 square feet per gallon. Dries dust free in two hours, is hard enough far light traffic in twelve hours, attains maximum hardness in about forty-eight hours. For all floors and ather surfaces.

HAYPROC ALUMINUM PAINT

Highest grade aluminum paint you can buy. Contains tung oil in asphaltic base. Caverage 600 sq. ft. per gal. For metal, wood, concrete, etc.—and our floor resurfacer. Comes in compartment cans.

HAYPROC ALUMINUM FOIL PATCHING CLOTH

A heavy aluminum foil. Pliable. Shaped to any surface. Used like fabric, costs ½. Reflects heat. Use 24" to cover whole raaf (lap 2").

HAYPROC ROOF AND METAL PAINT

Black, asphaltic base, non-fibred. Protects all surfaces, iron, tin, wood. Very economical.

HAYPROC ASBESTOS FIBRE ROOF COATING

Waterproofs built up and metal roofs, concrete decks, exterior basement walls, gutters and valleys and composition roofs. Brush on cold. Does not run in summer nar crack when cold. From 10% to 25% better than any other roof coating we have tested. It contains a higher percentage of waterpraofing materials which keep the coating pliable, combined with nonoxidizing agents for long life, and a specially selected asbestos fibre, extra long. Hayproc asbestas fibre roaf coating is easily applied, penetrates and saturates the old roof leaving a water-tight, tough, coating for protection from the hot sun and torrential rains.

Apply at the rate of two gallons per ane hundred square feet for ordinary compositian roofing or one and one-half gallons for metal raofs. For badly dried roafs apply a primer caat af HAYPROC PRIMER FOR ROOF COATING, which is non-fibred, to saturate the old felt, and prepare it for the roaf caating.

HAYPROC PLASTIC ROOF CEMENT

A black, asphaltic base, asbestos fibre cement of putty consistency ready far trawel. Used for patching large hales, filling seams, flashing side walls, chimneys, sky lights, and lining gutters.

HAYNES PRODUCTS CO.

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MEMBER AMERICAN CONCRETE INSTITUTE

PHONE JACKSON 0827 OFFICE, OMAHA 3, NEBRASKA

FACTORIES, OMAHA AND KANSAS CITY

HAYPROC WATERPROOFINGS OMAHA

KEDMONT
PRESERVATIVES - WATERPROOFINGS
EXTERIOR — INTERIOR

WATERPROOFING — PRESERVATIVES

for floors and all exposed surfaces—exterior and interior

NEW . . . RESTORATION . . . REPAIR . . . MAINTENANCE

- **Over Thirty-Five Million Square Feet Treated in over Twenty Years**

  Continuous satisfactory results have been derived from the use of Kedmont products and services covering over 35 million square feet of treated surfaces during the last 24 years.

- **One Responsibility**

  Responsibility is confined to one company for both materials and labor if so desired.

- **Bonded Guarantee**

  The Kedmont Manufacturing & Waterproofing Company guarantees the floors finished with PRESERVATEX BONDED CONCRETE FLOOR FINISH will remain hard, dust and waterproof, and oil and grease resisting for a period of *five years* from date of completion, and will retreat at their own expense any areas which in the opinion of the architects or owners require additional treatment.

KEDMONT MANUFACTURING AND WATERPROOFING CO.

53 W. Jackson Blvd., Chicago 4, Ill.
WEbster 9-3060

Trust Building, Durham, N. C.
N-3561

Cadillac Service and Sales Building, Chicago, Ill.
All floors finished with
PRESERVATEX BONDED CONCRETE FLOOR FINISH

Duke University Stadium, Durham, North Carolina.
Concrete Restoration and
PRESERVATEX "EE".

KEDMONT PRODUCTS · · · THEIR USES AND

GENERAL SPECIFICATION NOTES	*Add Notes 1 and 2 to all Specifications following. Add Note 3 where so indicated.*	**NOTE 1:** All material shall be delivered to the job in the original sealed packages as manufactured by the Kedmont Manufacturing and Waterproofing Co., Chicago, Ill. **NOTE 2:** All materials shall be mixed and applied in strict accordance with the manufacturer's printed directions. **NOTE 3:** All work shall be done under the direction of the Kedmont Manufacturing and Waterproofing Company.
TYPE OF WORK	**TRADE NAME**	**SPECIFICATIONS AND DIRECTIONS**
WATERPROOFING		
Waterproofing for Masonary Surfaces Exterior or Interior	**PRESERVATEX METALLIC WATERPROOFING** Provides Protective Sealer and Bond by Means of a Metallic Cement Covering: (An After Treatment)	Preparation: Mix PRESERVATEX METALLIC WATERPROOFING with sufficient water to make a thick paint. 1st Coat—Apply above mixture with wide brush and thoroughly cover the surface. 2nd Coat—24 hours later apply second coat in same manner. Before second coat, fill all cracks and openings with a stiff mortar consisting of one part Metallic Waterproofing; two parts clean, sharp sand and four parts Portland Cement. Trowel surface smooth and even. 3rd Coat—24 hours later apply finish coat mixed with I part Metallic Waterproofing, I part cement and 12 parts sand. Add water to make a very thick paint. When sufficiently set, sprinkle and keep wet for 48 hours. (Note 3.)
Waterproofing for Exterior Masonry Surfaces	**PRESERVATEX "EE"** Transparent and Colorless (An After Treatment)	All exposed masonry surfaces shall receive 2 coats of PRESERVATEX "EE." Applied with a brush, mop, hand spray or air spray and each application shall thoroughly saturate the surface. Use "EE" for concrete and brick surfaces. If during the application of first coat, spots or sections absorb the material very rapidly, showing excess porosity, they shall be touched up at once with additional material, so that the first coat shall create a condition of uniform porosity. Allow at least 12 hours between coats. Covering approx. 100 sq. ft. per gallon, depending on porosity of surface.
Concrete Work Below Grade and Floors	**DUROTEX** Waterproofing Liquid: (Integral)	Use one and one-half (1½) gallons of DUROTEX LIQUID to each cubic yard of concrete. Use one gallon of DUROTEX LIQUID for each 100 sq. ft. of 1-inch topping.
Concrete Work Below Grade and Floors	**DUROTEX** Waterproofing Paste (Integral)	Use 6—10 lbs. of DUROTEX PASTE to each cubic yard of concrete. One pint weighs about one pound. Use 6—10 lbs. of DUROTEX PASTE to each 100 sq. ft. of cement mortar, finish 1-inch thick.
Concrete Work Below Grade and Floors	**DUROTEX** Waterproofing Powder: (Integral)	Use two pounds to each sack of Portland Cement.
Plastic Type of Waterproofing for Walls and Floors	**DUROTEX METALLIC HYDROLITHIC WATERPROOFING 3 YR. GUARANTEE**	WALLS: Expose the aggregate with chipping hatchet. Apply a cement and sand slush coat mixed with PRESERVATEX Metallic Waterproofing. Follow immediately with waterproofing mixture: I part cement and 2 parts sand, mixed with PRESERVATEX Metallic. Apply ⅜-inch thick troweled smooth. Scratch wall with wire brush. After 24 hours follow with slush coat, same as above, and then immediately again with waterproofing mixture with smooth trowel finish. Where floor adjoins wall install waterproofing fillet composed of KEDLOX Non-shrinking Metallic Grout. FLOORS: Over screeded finish apply a cement and sand slush coat mixed with PRESERVATEX Metallic waterproofing. Follow with waterproofing mixture: I part cement, 2 parts sand, mixed with necessary PRESERVATEX Metallic waterproofing. Apply I-inch thick and trowel smooth. (Note 3.)
DAMPPROOFING		
Masonry Dampproofing Plaster Base	**K. D. S. No. 11** (Kedmont Dampproofing Seal) Dampproofing and Plaster Bond Service	Apply with brush or spray to masonry walls where plaster is to be applied. Allow to dry thoroughly before plaster is applied. Covering capacity approximately 100 sq. ft. per gal. one coat. For the inside of exterior walls to be plastered the Kedmont Manufacturing and Waterproofing Company maintains a highly experienced crew and specialized equipment to apply 2 coats of K.D.S. No. 11 with silica sand embodied under pressure, resulting in a superior dampproof and mechanical bond.
Stone and Marble Dampproofing	**K. D. S. No. 12** (Kedmont Dampproofing Seal): Protection against Stains	Apply with large brush to saturation point. Covering capacity approximately 150 sq. ft. per gal. one coat.
Outside Foundations Wood Sleeper Base Dampproofing	**K. D. S. No. 13** (Kedmont Dampproofing Seal) Protection Against Stains	Apply with brush to the exterior of foundation walls, concrete floor slabs and wood sleepers laid in concrete. Do not thin or heat. Covering capacity 80 sq. ft. per gal. on brick; approximately 100 sq. ft. per gal. on concrete or stone.

METHODS OF APPLICATION • • • FOR NEW WORK

TYPE OF WORK	TRADE NAME	SPECIFICATIONS AND DIRECTIONS
FLOOR HARDENING AND CONDITIONING		
Cement Finish Floors (Heavy Duty)	**PRESERVATEX** Liquid Chemical Colorless Hardener (An After Treatment)	All surfaces shall be clean, dry and free from oil. Floors are ready for treatment 5 to 10 days after pouring. Thoroughly agitate container of PRESERVATEX and apply with large horse hair brush, saturating floor, but leaving no excess material on floor. 1st Coat—Mix one part PRESERVATEX with two parts water. 2nd Coat—Mix one part PRESERVATEX with one part water. 3rd Coat—Mix two parts PRESERVATEX with one part water. 1½ gallons of PRESERVATEX is sufficient to treat 100 sq. ft. consisting of 3 applications. On machine-finished floors, the second coat may be eliminated reducing the requirements to 1 gallon per 100 sq. ft., including 1st and 3rd coats. Allow at least 4 hours between coats, depending on porosity of surface and weather conditions.
Cement Finish Floors (Light Duty)	**PRESERVATEX SEALER** Clear Liquid: Gum Compound: Non-Slip Linoleum-Like Finish: Dust and Stain-Proof: (An After Treatment)	All surfaces to be treated shall be clean and dry. Floors are ready for treatment 10 days after pouring. Apply two coats of PRESERVATEX SEALER not less than 12 hours apart with a long-handled 18-inch mop, each coat to be cross-mopped to spread the material. Respread surplus within one hour of application and buff the final coat. Floors to be protected from traffic for at least 12 hours. Covering capacity per gallon approx. 200 sq. ft. first coat; 350 sq. ft. second coat.
Cement Finish Floors	**PRESERVATEX BONDED CONCRETE FLOOR FINISH** Double Duty Hardener and Sealer: (An After Treatment) **5 YR. GUARANTEE**	All surfaces to be treated shall be clean and dry. Floors are ready for treatment 10 days after pouring. Apply complete application of PRESERVATEX followed by complete application of PRESERVATEX SEALER as described above. The Kedmont Manufacturing and Waterproofing Company guarantees that floors finished with PRESERVATEX BONDED CONCRETE FLOOR FINISH will remain hard, dust and waterproof and oil and grease-resisting for a period of 5 years from date of completion and will retreat at their expense any areas which in the opinion of Architects or Owners require additional attention. (Note 3.)
PLAIN AND COLORED Concrete Floor Topping (All Duties)	**PRESERVATEX METALLIC FLOOR HARDENER PLAIN AND COLORED** Topping or Monolithic (An Integral Treatment)	For light duty, use 30-40 pounds per 100 sq. ft. For medium duty, use 50-60 pounds per 100 sq. ft. For heavy duty, use 80-90 pounds per 100 sq. ft. PRESERVATEX Metallic to be mixed on the basis of 2 parts of PRESERVATEX Metallic to 1 part of Portland Cement by weight. This mixture to be dust-coated over surface just before steel trowelling.
Cement Finish Floors (All Duties)	**PRESERVATEX METALLIC DOUBLE-DUTY FLOOR HARDENER**	For Extra Heavy Duty and Sparkproofing, use 90 to 120 pounds per 100 sq. ft., in accordance with the Manufacturers' detailed directions.
Terrazzo Floors	**TERRAZZOTEX AND TERRAZZOTEX FINISH** Waterproofs, Prevents Pitting, Disintegration and Brightens	Grind terrazzo floors in usual manner after which apply a liberal coating of TERRAZZOTEX, sealing all moisture into the floor. The floor is not to be "fine-stoned" until the building is completed. After surface has been "fine-stoned" thoroughly wash floor to remove dust. Covers 300 sq. ft. per gal. 1 coat. To secure a high polish, after the surface is dry, apply one light coat of TERRAZZOTEX FINISH with a sheep's wool applicator. Apply on approximately 200 sq. ft., then without adding more material, operate spreader in opposite direction so as to avoid streaks, voids, puddles. Allow to dry for one- half hour, then polish. Apply second application in the same manner. Covering capacity of TERRAZZOTEX FINISH per gal. First coat, 500 sq. ft. Second coat, 700 sq. ft.
Wood Floors Maple, Pine or Oak (Heavy Duty)	**PENETROL AND PENETROL SEAL** Colorless, Odorless: Impregnates Wood Floor Fibres, Seals, Excludes Dirt, Stain and Moisture.	For new wood floors, apply 1 coat of PENETROL with mop or large brush. For old floors or floors for heavy duty, apply 2 coats of PENETROL, mopping off all surplus material. Apply PENETROL for Bakeries and Food Stuff Plants. Covering capacity 350-400 sq. ft. per gallon, 1 coat. Apply PENETROL SEAL for a satin-like sheen and an elastic, oil, grease and mar-proof finish. Covering capacity per gal. 600 sq. ft., one coat.
CONCRETE AND MORTAR SPECIALTIES		
Protection of Concrete Surfaces Against Acids, Salts and other Detrimental Conditions	**PRESERVACRETE** A Cementitious Grout	For protection and waterproofing of exposed concrete surfaces, either monolithic or concrete unit blocks to prevent disintegration due to atmospheric acids. This material is a cementitious grout in white or other colors applied under pressure or with a gun, forming an integral part of the base to which it is applied. All smooth surfaces shall be etched and all surfaces thoroughly wet before application and properly cured. As soon as the initial set has taken place we recommend one coat of PRESERVATEX EE sprayed or brushed on for complete sealing and curing. (Note 3.)
Concrete Mass Shrinkage Control	**DUROTEX "P"** Increases Workability, Density and Resistance to Freezing and Thawing	A product with definite plasticising and dispersing properties. Its use allows a reduction in water-cement ratio, yet produces a free-flowing, lubricated mass with normal set. DUROTEX "P" used in concrete provides quicker and more thorough wetting of cement particles. Use 1 lb. per sack of cement.
Mortar Conditioning Material Reduces Water Absorption, Checks Shrinkage, Increases Density, Gives Greater Adhesion	**DUROLOX** Plain and Colored	Add 1 pound per sack of Portland Cement and/or 1 pound per cubic ft. of Lime.
Concrete Curing Compound	**PRESERVA-KURE** Retains Moisture Perfectly	Apply by brushing or by means of pressure spray equipment, manual or power-operated. Power operation will cover approximately 20,000 sq. ft. per day. One gallon will cover approximately 250 sq. ft. One application sufficient.

KEDMONT INDUSTRIAL MAINTENANCE PRODUCTS

FLOOR HARDENING AND SEALING MATERIALS

PRESERVATEX—See Page 3 for directions.

PRESERVATEX SEALER—See Page 3 for directions.

KEOMONT NON-SLIP AGGREGATE—Complies with Federal Specifications. Consists of graded aluminum oxide grains, is non-rusting and unaffected by moisture, salt, alkali, or most acids and caustics. 25-50 lbs. per 100 sq. ft.

PENETROL—See Page 3 for directions.

FLOOR PATCHING MATERIALS

KRAK-KURE FLOORING AND PATCHING MASTIC—No chipping required. Sets in 24 to 30 hrs. Material can be laid with a feather edge. Use in accordance with manufacturers' printed directions.

KRAK-KURE IRON PATCH—A concrete iron patch for deeper depressions, where chipping is required. Mix 8 to 10 lbs. per sq. ft. for 1" thick. Sets hard for heavy duty in about 15 hrs. Apply in accordance with manufacturers' printed directions.

KEDTITE—A bituminous emulsion providing protection for asphalt, mastic, and other surfaces against the destructive effects of oil, grease, gasoline, and mild acids. 1½ - 2 gal. per 100 sq. ft.

METALLIC GROUT

KEDLOX—A metallic non-shrinking compound for cement mortar mixes, used for repairing concrete and masonry, grouting equipment and plaster-coat work. Specifications for particular requirements furnished upon request.

ROOF PRESERVATIVES AND WATERPROOFING

KRAK-KURE ASBESTOS FIBRATED ROOF COATING—A heavy-bodied waterproofing compound for roof protection and roof repairs. Waterproofs, penetrates and preserves. For all kinds of composition, built-up, metal and concrete roofs. Apply with a roof brush.

KRAK-KURE NON-FIBRATED ROOF COATING—An asphalt coating for use on all types of surfaces as a preservative and waterproofing paint; and a priming coat on dried-out composition and felt roofs.

KRAK-KURE PLASTIC ROOF CEMENT—A paste form asphaltic waterproofing compound used for patching leaks in roofs and other surfaces. Will make a watertight joint at the flashing. Apply with a trowel or putty knife.

KEDCO WATERPROOFING FABRIC—Either asphalt or pitch saturated cotton fabric for membrane or spandrel waterproofing. 50 sq. yds. per roll.

KEOCO WATERPROOFING FELT—Either asphalt or tar saturated, in various weights, for membrane or spandrel waterproofing, etc. 48 sq. yds. per roll.

KEDCO WATERPROOFING ASPHALT AND PITCH—Used in conjunction with fabric or felt for membrane waterproofing.

PROTECTIVE COATINGS AND COLORS

KEDTEX—A washable cold water cement paint for unpainted masonry or concrete surfaces. Beautifies and protects against dampness. Applied by brush or spray. White or standard colors. Coverage 100 - 200 sq. ft. per 5 lbs., 1 coat.

KEDLUM—A fibrated asphaltic base aluminum coating developed especially for above grade exterior masonry surfaces including concrete and cinder blocks. Produces a silvery finish—coverage 150-400 sq. ft. per gal., 1 coat.

KEOLUM AA—The best quality asphalt base aluminum coating. Beautifies and protects either interior or exterior surfaces of any kind. The silvery finish increases insulation effect, especially when used on roofs. Can be painted over with any type of paint. Coverage 150 - 400 sq. ft. per gal., 1 coat.

KEDCO CEMENT COLORS—Pure mineral oxide colors for use in cement finish surfaces. Mixed in topping gives best results. 5-10 lbs. per bag of cement depending on color and depth of shade desired.

CAULKING MATERIALS

KEDCO HQ CAULKING COMPOUND—Highest quality meeting government state and architectural specifications. Will not bleed or stain. Very long life. Natural (off white aging to buff) and colors. Gun or knife grades, and cartridges.

KEOCO GLAZING COMPOUND—Superior to putty for any type of glazing on either wood or metal sash.

KEDCO 1336 EXPANSION JOINT MATERIAL—Conforms to Federal Specifications SS-F-336. Contains rubber, insuring high elasticity and excellent bonding properties.

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Robert & Company
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J. A. Jones Construction Company
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53 W. Jackson Blvd., Chicago 4, Ill.
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Trust Building, Durham, N. C.
N-3561

HORN

A. C. HORN COMPANY, INC.

For More Than 50 Years
Manufacturers of Materials for
BUILDING MAINTENANCE AND CONSTRUCTION
used in thousands of structures and protecting millions of square feet of surface . . .

HORN

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A HORN PRODUCT

A. C. HORN COMPANY, INC.

INTERIOR PAINTS

FLAT WALL FINISH OIL PAINT

HORN-O-TONE

1. HORN-O-TONE is not just anather paint, but represents the latest achievement in paint technology.

2. HORN-O-TONE is the ultra-modern interior flat wall finish.

3. HORN-O-TONE Is not a water palnt. Its outstandIng feature is its Increased non-penetrating properties—so impartant when painting paraus surfaces such as plaster—wallboard—concrete surfaces—brick—wood—cinder blocks.

4. The controlled penetration is accomplished by proper palymerization of the vehicle campanents praviding the ideal surface tension to the finished paint. These combined attributes assure a unifarm finish eliminating high spots, flashes, etc.

5. HORN-O-TONE passesses excellent hiding and covering capacity. It dries ta a rich and velvety flatness of very high light reflection and excellent light diffusion . . . without glare.

6. HORN-O-TONE requires no thinning. It comes ready for use for either brush ar spray application. It may be thinned for spray application with substitute turpentine or turpentine.

7. HORN-O-TONE may also be used over clean firm surfaces previously painted with calcimine — water thinned paint—resin emulsion paint—whitewash.

8. HORN-O-TONE is easy to apply — no wrist strain —it hides and covers exceptionally well, One caat of this material is as good or better than a coat of undercoat or size, plus a caat of flat wall paint.

Covering Capacity: Approximately 400 sq. ft. per gallon, ane coat, depending on surface irregularity and parasity.

In a variety of calors.

9. HORN-O-TONE is highly recammended for the interiors of

Schools
Hospitals
Hotels
Housing Projects
Office Buildings
Commercial Buildings
Industrial Plants

GLOSS AND SEMI GLOSS WALL FINISH

SUPER FUME PROOF ENAMEL

WHITE ONLY

Features

1. Decreases cost of illumination.
2. Diffuses a large percentage of light.
3. Decreases percentage of defects and spoilage.
4. Lowers accident rate and reduces injuries.
5. Possesses advertising value — bespeaks prosperity and gaad management.
6. May bé readily washed and scrubbed.
7. Dries dust-free in approximately four hours.

Can be tinted wlth color-in-oil.

Super Fume Proof Undercaater shauld be applied prior to applicatian af Super Fumé Proof Enamel.

Covering Capacity: Approximately 400 sq. ft. per gallan, one caat, depending on surface irregularity and porosity.

Uses

Abattoirs
Aircraft Plants
Ammunition Plants
Bakeries
Beverage Plants
Bottling Plants
Candy Plants
Canneries
Chemical Plants
Catton and Textile Mills
Dairies
Hospitals
Ice Plants
Ice Cream Plants
Laundries
Meat Packing Plants
Warehauses
Faod Pracessing Plants

CAULKING
window and stone

Failure of Ordinary Caulking

VULCATEX Caulking after 11 years

LATEST RECOMMENDATIONS* NATIONAL BUREAU OF STANDARDS

Shrinkage.....Not more than 15% under test outlined.
Bond.....Peel after 15 days leaving adhering film.
Tenacity.....Fold test after 15 days (6 times through 180°).
Rate of Hardening..Less than 50% in 15 days (Penetrometer test).
Oil Retention.....1/16 inch or less stain spread (limestone test).
Consistency.....No slump at 120° for 24 hours.

* Copy of General Requirements and testing procedure on request.

REPORT OF U. S. TESTING COMPANY No. 15296‡

Summary: "We find that VULCATEX conforms in all respects to the requirements detailed in the publication 'Building Materials and Structures, Report BMS 33 Plastic Caulking Materials, of the National Bureau of Standards (U. S. Department of Commerce).'"

Shrinkage 2.3%	Rate of Hardening.....18.5%
Bond .....Satisfactory	Oil Retention.....No staining greater than 1/16 inch
Tenacity .....Satisfactory	Consistency .....Satisfactory

‡ Certified copy of report will be sent upon request.

Elastic CAULKING COMPOUND

VULCATEX

Description: Vulcatex is the acknowledged, time-tested leader of caulking compounds. Based on years of service, Vulcotex is the most economical caulking compound on the market, since it will not dry out, crack or shrink as inferior caulking compounds often do. Some installations over twenty years of age are still intact, pliable, watertight and effectively bonded to the joints. Vulcatex is made in knife and gun grade consistency. The standard color is light grey. Also available in white, limestone, brown, black, red, green and dark grey.

Use: Vulcotex is used wherever it is desired to obtain a sound water-resistant joint between masonry and window frames, stone copings, glass brick, steel sash, masonry construction and wood frame construction. Where it is desirable to match color of caulking compound with the surrounding surface, it is customary to stripe the joint with an exterior paint, properly tinted to match. Vulcatex can be pointed over. All joints should be primed with Horn Vulcatex Joint Primer, clear lacquer or shellac before caulking with Vulcotex.

Coverage: One gallon (231 cubic inches) will caulk approximately: 9 windows 4 x 7 ft. with 3/8 inch rabbet; 6 windows 4 x 7 ft. with 1/2 inch rabbet; 4 windows 4 x 7 ft. with 3/4 inch rabbet; or 77 lineal feet of open 1/2 x 1/2 inch.

Always Specify

VULCATEX
THRIFTPAKS
CAULKING COMPOUND
FACTORY-SEALED

- **The U. S. Government Does.**
- **The State of New York Does.**
- **Private Industry Does.**

Why?

1. Because factory sealed THRIFTPAKS make job adulteration impossible.

2. Because THRIFTPAKS save time and labor in gun loading. No waste due to wiping off gun each time it is loaded.

3. Because there is no wastage from material skinning over on sides of bulk containers or discarded half-emptied pails.

4. Because there is no ladder climbing to load and re-load.

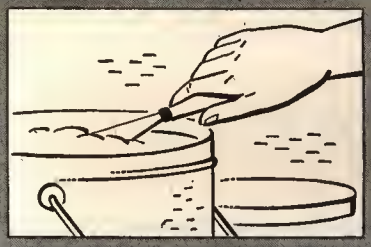
5. Because THRIFTPAKS may be used in cold weather without the need of thinning the material.

Air-tight, cellophane THRIFTPAKS will fit most standard caulking guns. Estimate approximately 10 THRIFTPAKS to the gallon. Packed 100 THRIFTPAKS to the case.

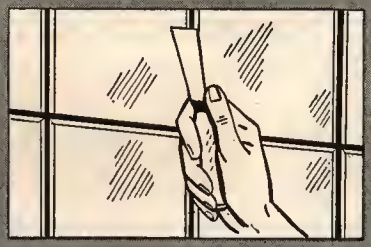
A HORN PRODUCT

A. C. HORN COMPANY, INC.

GLAZING



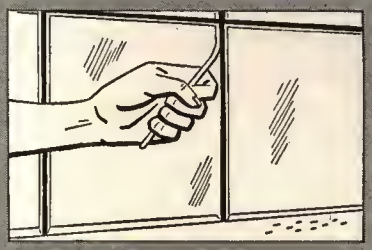
1—Ready to use. No kneading or softening. No time wasted for preparation.



2—Quickly and easily applied with ordinary glazing tool or wide blade spatula.

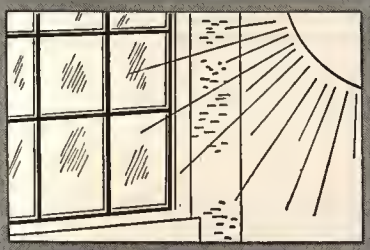
3—No priming or painting of window sash. Only clean surfaces required.

4—Easily removed. No laborious chiseling required. Simply roll off with glazing tool.

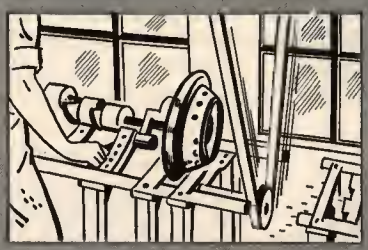


5—Adheres firmly to wood, steel, glass. Will not pull away or permit leakage.

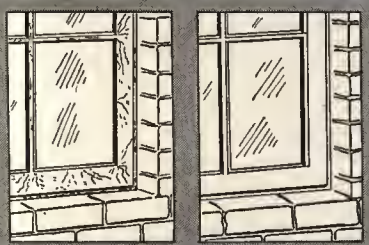
6—Does not set hard. Does not crack or crumble. Extra long life and service.



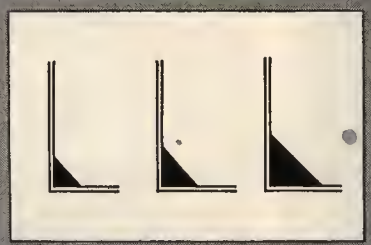
7—Self-adjusting to the contraction and expansion of wood, steel and glass.



8—Cushions glass, absorbing shock and vibration. Will not jar loose. Reduces glass breakage.



9—Resists corrosion of steel sash. Helps prevent the rotting of wood sash.



10—Covering capacity per Gal.

3/8" Rabbet—approx. 195 Lineal ft.
1/2" Rabbet—approx. 140 Lineal ft.
3/4" Rabbet—approx. 85 Lineal ft.

HORN

GLAZING COMPOUND

Description: On large maintenance and small glazing jobs, ordinary putty has long since been replaced. Horn Glazing Compound has taken its place more efficiently and more economically. For Horn Glazing Compound is a plastic material of unusual qualities. First and foremost, it does not dry out as putty does. It stays "put", effectively resisting weather, shock, or vibration. Its long, efficient service obviously has a number of other advantages. By helping to prevent cracking or breakage of glass panes, it becomes a real factor in reducing maintenance costs. For in many industries, glass breakage is a surprisingly large item. Further reduction of maintenance costs also results from the fact that Horn Glazing Compound forms permanently leakproof and dustproof joints, thus protecting interior surfaces and materials in the immediate vicinity of the sash. It is natural gray in color.

Use: Horn Glazing Compound is easily applied with an ordinary glazing tool or wide blade spatula. No special skill is required and since it is always in "ready-to-use" condition, no time for preparation is lost on the job. If for any reason it must be removed, it can be rolled off by the same tool almost as rapidly as it is applied. This is in marked contrast to putty which must often be chiselled and scraped involving considerable labor and an unsatisfactory result as compared to Horn Glazing Compound. Owing to its plastic and elastic character, Horn Glazing Compound maintains a tight seal where applied regardless of expansion, contraction, or movement. It is therefore an important factor in fuel bills by elimination of the constant leakage of cold air through the sash. Horn Glazing Compound retains its original condition in the container and is always "ready-to-use." It is desirable for a plant to keep a supply on hand for immediate repair work.

EXTERIOR SURFACES

FOR THE PROTECTIVE AND DECORATIVE TREATMENT OF ALL MASONRY SURFACES

Deterioration of structural surfaces due to water penetration.

Attractive appearance of building after preservative treatment with Waterfoil.

WATERFOIL

After many years of laboratory research directed toward finding a more effective preservative treatment for masonry surfaces, the A. C. Horn Company developed WATERFOIL. The laboratory work was followed by years of field tests on hundreds af structures under various types of climatic conditions. The results af these tests confirmed the merits af this new product for the protection of exterior masonry surfaces.

Description: WATERFOIL is an irreversible inorganic gel which hardens into a heavy coating of microscopic sponge-like character and practically "welds" itself, mechanically and chemically, into the minute voids of concrete, stucca or brick surfaces. WATERFOIL is not just a coating like paint but becomes an integral part of the masonry itself, forming a microscopically fine-textured protective surface. It is an exclusive material and process; an oil-less, water-less farmation that becomes a composite part of the structure. It contains no Linseed Oil, Casein, Resin Emulsion, Volatile Thinners or Cement. No primers are required.

Use: WATERFOIL is recommended far general use as a treatment for exterior masonry surfaces. It impedes the penetration of water, lengthens the life of masonry materials and beautifies structural surfaces. Skilled labor is not required, as WATERFOIL can be applied satisfactorily by any careful workman.

All over this country plants, institutional buildings, factories, office and residential buildings are suffering war-time neglect. Their shabby appearance is a danger sign af creeping disintegration. The surfaces of such buildings can be treated with WATERFOIL to restore their original fresh appearance. An application of WATERFOIL will pay handsome dividends, for the protected structures will go into the post-war period in first-class condition.

WATERFOIL is manufactured in the following colors: Cream, Buff, Cement Grey, Grey, Brick Red and White.

Before Treatment

After Treatment

A HORN PRODUCT

A. C. HORN COMPANY, INC.

EXTERIOR SURFACES

A COLORLESS LIQUID FOR THE PROTECTION OF POROUS BUILDING MATERIALS AGAINST THE EFFECTS OF WEATHERING

DEHYDRATINE No. 2 A & No. 2

DEHYDRATINE No. 2A is a colorless liquid treatment developed in the Horn laboratories to accomplish this purpose. Far mare than thirty years it has been universally recognized, through its use an thousands of buildings under all kinds of weather and climatic conditions, as a most effective material for its purpose. It is applied by brush or spray to protect virgin concrete, stucco and masonry without affecting the surface texture or impairing architectural appearance.

Description: DEHYDRATINE No. 2A functions by rendering the surface pores af the concrete, stucco or masonry units thoroughly water-repellent. Its efficiency and endurance result from the nature of its composition and its deep penetration inta the parous structure of the surfaces treated.

Its property of preserving the surface texture and its non-staining quality recommend it for the treatment of the finest limestone as well as other facing materials.

Use: DEHYDRATINE No. 2A helps to preserve brick, stone, concrete, stucco, cement mortar, magnesite, lime or cement stucco from deterioration due to the following causes.

1. From absorption of water due ta driving rainstorms or atmospheric moisture.
2. From disintegration splitting and cracking resulting from frost.
3. From destructive volume changes due to alternate wetting and drying.
4. From rusting of steel reinforcement in concrete, and metal lath in stucco, as the result of absorbed moisture with consequent destructive spalling of the exterior surfaces.
5. Assists in checking efflorescence.
6. Helps to insure a cleaner looking structure by resisting the absarption of dirt particles which are readily washed away by rain. This is particularly important with respect to fine limestone buildings, the appearance of which can be protected by treatment of their exteriors with DEHYDRATINE No. 2A.

DEHYDRATINE No. 2 performs the same function as DEHYDRATINE No. 2A, and, in addition, deepens the color and texture of brick and masonry surfaces.

Note: DEHYDRATINE No. 2 and DEHYDRATINE No. 2A should not be applied to previously painted surfaces. Other Horn Products are available for this requirement. Write the A. C. Horn Company for complete details.

FOR THE PROTECTION OF EXTERIOR MASONRY SURFACES — BRICK, STUCCO, CONCRETE

SYMENTREX

Description: SYMENTREX is a liquid coating combining color and waterproofness, which Is also resistant to the attack of the alkali elements in the surface to which it is applied. SYMENTREX forms a waterproof sheath over the surface, to which it clings firmly, and by which it is assimilated. Its appearance is flat, and it imparts ta the surface a uniform, decorative effect.

Use: Ordinary paints cannot be used on concrete surfaces or brick surfaces which have mortar joints. The free alkali or lime released in the setting of Portland cement is very active, and combines with the oils of ordinary paints to break down and destroy the film. SYMENTREX is designed to resist this saponifying action.

Application: SYMENTREX may be applied to unpainted or a previously painted surface which is in a saund conditian, clean and dry. SYMENTREX is applied in two coats, after first pointing open joints. Coats should be given from 24 ta 48 hours to dry. On dense surfaces, thin first coat with ½ to 1 pint of turpentine to the gallon; apply second coat without thinning. On porous surfaces, apply a first caat of SYMENTREX PRIMER.

Colors: Slate, Ivory, Grey, Red, Cement Color, Drab, Buff, Cream, Light Grey, Sandstone and White.

Covering Capacity: Approximately 200 sq. ft. per gallon first coat; 300 sq. ft. per gallon second caat, depending on parosity and texture af surface.

MASONRY

DAMPPROOFINGS — ABOVE GRADE

DEHYDRATINE No. 1

BRUSH CONSISTENCY

A heavy bodied dampproofing paint for application to the inside face of exterior walls above grade. Applied by brush or spray to masanry surfaces.

Covering Capacity: Approximately 50 sq. ft. per gallon, two coats. 80 sq. ft. per gallon, one coat, depending on porosity and texture of surface.

DEHYDRATINE No. 3

BLACK STAINPROOF STONE BACKING

Description: A specially prepared, quick drying, black brushing campound, highly resistant to chemical reaction, ta be applied to all UNEXPOSED surfaces af cut stone.

Use: For pratection af limestone and other light colored stanes from the stains caused by the percolation of dampness through the grain of the stane and to prevent discoloration on the face of the stane. The source af stone staining usually may be traced ta the coloring matter and salts absorbed from the brick backing into the stone by saturation. Must be used as it comes from the package.

Covering Capacity: Applied with a brush — approximately 100 sq. ft. per gallan, 1 coat, depending on porosity and texture of surface.

DEHYDRATINE No. 10

SEMI-MASTIC

Same as DEHYDRATINE No. 1, but reinfarced with asbestos fibres which web together to form a membrane. Particularly recammended over hollow back-up tile walls since their surface does not permit use of a mastic and are too uneven for the thinner brush coatings.

Covering Capacity: Approximately 30 sq. ft. per gallon one coat and applied by brush.

DEHYDRATINE No. 10

MASTIC

Same as No. 10 Semi-Mastic, but more heavily reinforced with asbestos fibres. Bridges over cracks between the mortar and the bricks, fills holes and ensures a continuous coating. Also used in canjunction with TRIPLEFLEX FABRIC in treatment of spandrel beams. Not recommended for use on cancrete, terra catta or tile — ideal far brick ar under furring. Its thickness insulates; reduces candensation or "sweating."

Covering Capacity: Approximately 26 sq. ft. per gallon 1/16 in. thick.

DAMPPROOFINGS — BELOW GRADE

DEHYDRATINE No. 4 and No. 6 Mastic not only have all the high qualities of the DEHYDRATINE BLACKS but maximum chemical resistance.

DEHYDRATINE No. 4

BRUSH CONSISTENCY

A heavy brush consistency applied COLD to the outside surface of masonry belaw grade. Extensively used far substructural wark ta exclude seepage af ground water thraugh belaw grade faundations.

Covering Capacity: Approximately 33 sq. ft. per gallan, twa caats, depending on porasity and texture of surface.

DEHYDRATINE No. 6

TROWEL CONSISTENCY

Similar ta DEHYDRATINE Na. 4 but heavily reinfarced with asbestas fibre, thus forming when set, a webbed water-resistant coating. Excellent for waterproofing uneven surfaces which cannot be effectually covered with a brush coating. Applied with a trawel after first priming surface with DEHYDRATINE Na. 4.

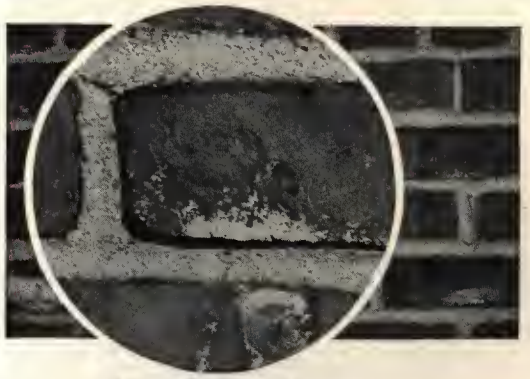
Covering Capacity: Approximately 26 sq. ft. per gallan, 1/16 inch thick.

FOR *Water-Resistant* MORTAR JOINTS — TO REDUCE MORTAR SHRINKAGE AND BRICK ABSORPTION

Why Even the Finest Brick Walls Leak

THIS IS AN AVERAGE WALL THAT LOOKS LIKE GOOD BRICKWORK
Efflorescence (white spots) indicates leakage.

UPON MAGNIFICATION
Many cracks become visible



UPON GREATER MAGNIFICATION
The vertical joint is found to be open on BOTH sides.

These are actual unretouched photographs of a brick wall on a prominent structure, having an exterior area of more than 100,000 square feet. Over 30% of the joints were in the cracked condition illustrated.

HYDRATITE PLUS

NATIONAL BUREAU OF STANDARDS
Report No. BMS 7 states . . .

"A mortar showing a low value for flow after suction is not satisfactory . . ." "The less absorption by brick suction, the less permeable the masonry."

Tests of HYDRATITE PLUS by Columbia University, Robert W. Hunt Company, Texas Testing Laboratory, United States Testing Company, and others over a period of time bring out many interesting statistics regarding improved adhesion, checking of efflorescence, increased strength and plasticity. MOST IMPORTANT OF ALL, HYDRATITE PLUS REDUCES WATER ABSORPTION AND REDUCES INITIAL SHRINKAGE. HYDRATITE PLUS Is a concentrated powder which, when added to brick mortar, greatly reduces amount of water required. The increased plasticity PLUS its water retention after "spreading" the mortar on a course of porous brick promotes labor saving and tight brick walls.

HYDRATITE PLUS anchors the particle of water intimately to the cement, sand or lime particle with a bond greater than the suction of the brick. It increases the "wettability" of the water, thereby requiring much less water to achieve the same "flow" or workability of the mortar.

Specifications: The 1-1-6 brick mortar of 100-110 flow with or without admixture must retain 80% of the original flow after suction under Federal Specification SS-C-181b. HYDRATITE PLUS is approved as admixture under directions of the manufacturers, A. C. HORN COMPANY.

Covering Capacity: 2 lbs. per bag of cement in 1-1-6 mortar.

FIELD LABORATORY:

OVER 100,000,000 SQUARE FEET OF WALLS TREATED IN 18 YEARS

There is a HORN Waterproofing, for Every Institutional, Commercial

1—CAMPUS BENCHES
Hornoc; Horn Rexide

2—EXTERIOR WOOD TRIM
Hornac Exterior Primer; Hornoc; Horn Rexide

3—BOOKCASES, CABINETS, DESKS
Horn Duocrex Gloss — Semi Gloss — Dull Finish; Hornglaze Cleaner; Horn Varnishes

4—KITCHEN

WALLS AND CEILINGS:
Horn Suction Sealers; Horn Super Fume Proof Undercoater; Horn Super Fume Proof Enamel; Horn Namel Gloss ond Semi Gloss; Horn-O-Tone; Horn Duocoat; Horn Fumex; Horn Fumex Undercoater

FLOORS
Hornbrite; Hornglaze Cleaner; Hornglaze Wax; Horn T. N. T. Cleanser; Horn PDQ Koncrex; Horn Concrete Floor Enamel; Horn Duocrex; Hornlux; Horn Floorkoter; Maintenex; Horn Florcrex; 45-11 Standard Cleaner

5—CLASSROOMS

WALLS AND CEILINGS:
Horn Suction Seolers; Horn-O-Tone; Horn Super Fume Proof Undercoater; Horn Super Fume Proof Enamel; Horn Namel; Horn Super Streamlite; Horn Duocoat; Horn Fumex; Horn Fumex Undercoater

6—STAIR TREADS
Horn PDQ Koncrex; Horn Duocrex; Horn NuWoy Resurfacer; Treadsure; Horn Floorkoter; Florcrex

7—CAFETERIA

WALLS AND CEILINGS:
Horn Suction Sealers; Horn-O-Tone; Horn Super Fume Proof Undercoater; Horn Super Fume Proof Enamel; Horn Super Streamlite; Horn Namel; Horn Duocoat; Horn Fumex; Horn Fumex Undercoater

TABLES—CHAIRS:
Hornglaze Cleaner; Horn Duocrex; Hornspar; Hornglaze Wax; Horn Table Top Coating

8—CONCRETE FLOORS
Bondsit; Colorundum; Ferro-Fax; Crete-Fix; Hornolith; Hornstone Crystals; PDQ Koncrex; Duocrex; Hornglaze Wax; Color Paste Wax; Staybrite Dry Colors; Dehydratine No. 80; Floorkoter; NuWay Resurfacer; Vibro-Foil; Expansion Joint Cement; Horncure; Ferem; Treadsure; Holzon; Maintenex

9—CORRIDOR FLOORS

TERRAZZO—MARBLE, TILE AND TRAVERTINE
Hornlux; Hornbrite; Maintenex

MAGNESITE COMPOSITION:
Hornbrite; Hornlux; Hornglaze Cleaner; Hornglaze Wax

CORK:
Horn Paste Filler; Horn Florcrex; Hornglaze Cleaner; Hornglaze Wax

OTHER TYPES:
(See Classroom Floors)

10—ROOFS
Horn Dri-N-Tite; Horn TripleFlex Fabric; Horn Elastex; Horn Rexide; Horn Elasticon; Hornlume

11—WINDOW FRAMES

PAINTING:
Horn Golvanide; Horn Metol Primers; Hornac; Horn Rexide; Hornac Exterior Primer

CAULKING AND GLAZING:
Horn Vulcotex or Hornlostic (Knife or Gun Grade); Vulcatex Thriftpaks; Hornlastic Thriftpaks; Horncaulk; Horn Glazing Compound; Joint Primers

12—CLASSROOM FLOORS

WOOD:
Horn DX Cleonser; Horngloze Cleaner; Horn Florcrex; Horn Duocrex; Hornglaze Wax; Floorkoter; Maintenex

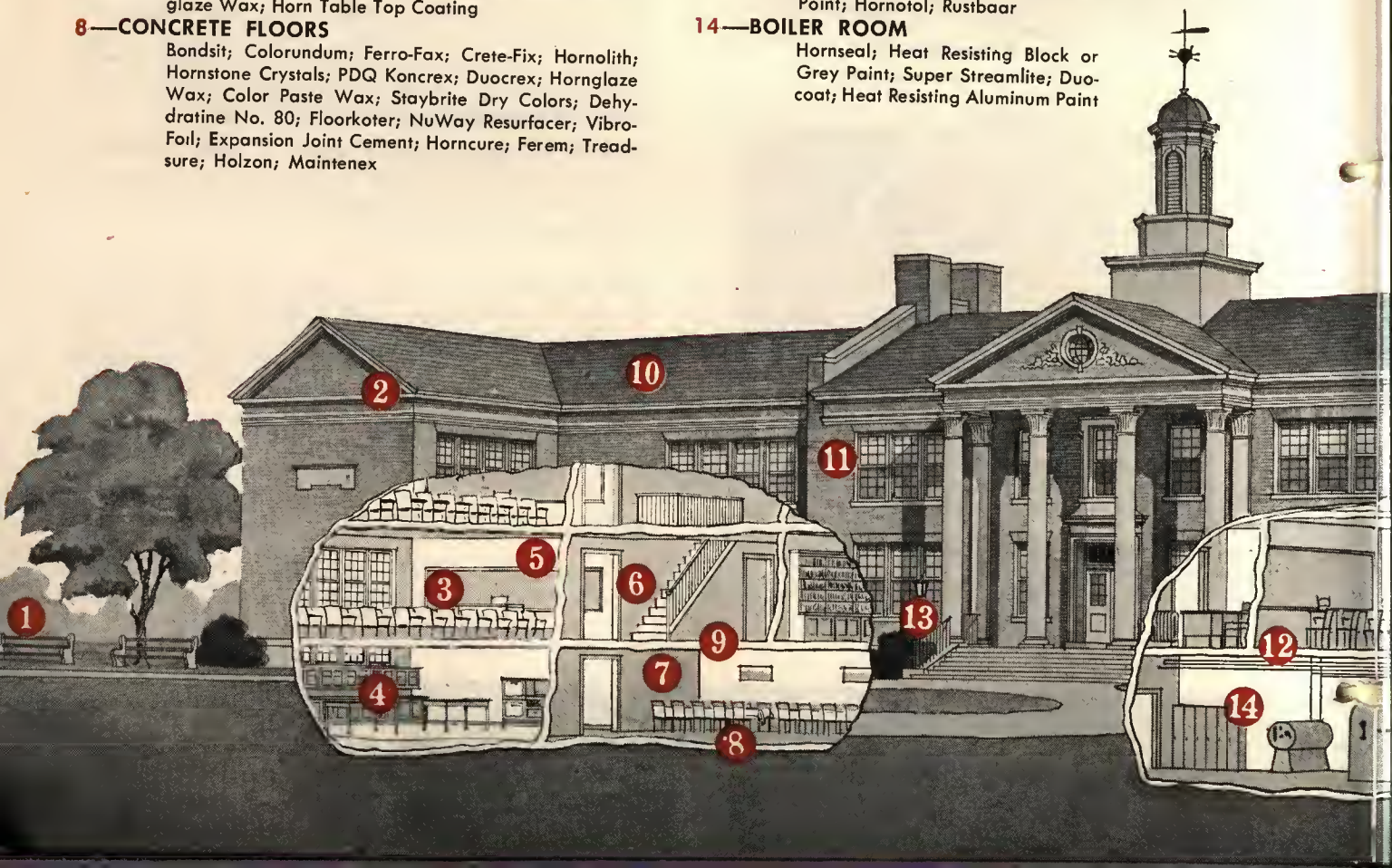
LINOLEUM:
Hornglaze Cleoner; Horngloze Wox

ASPHALT TILE:
Hornglaze Cleoner; Hornglaze Wax

RUBBER:
Horngloze Cleoner; Hornglaze Wax

13—EXTERIOR METAL SURFACES
Horn Metol Primers; Horn Galvanide; Horn Rexide, Horn Graphite Paint; Horn Elasticon; Horn Aluminum Point; Hornotol; Rustbaar

14—BOILER ROOM
Hornseal; Heat Resisting Block or Grey Paint; Super Streamlite; Duocoat; Heat Resisting Aluminum Paint



Protective and Decorative Coating or Residential Type Building

15—PIPE SYSTEMS

Horn Golvanide; Horn Industrial Enamel; Harnspar Enamel; Hornatal; Horn Pipe Jaint Cement; Harn Aluminum Point; Swet-pruf

16—RADIATORS

Harn-O-Tone; Harn Aluminum Paint; Harn Industrial Enamel

17—CHIMNEYS OR STACKS

METAL:

Harn Heat Resisting Black or Grey; Horn Heat Resisting Aluminum Point; High Heat Resisting Grey

18—LABORATORY

Horn Suction Seolers; Horn Super Fume Praaf Undercooter; Horn Super Fume Praaf Enamel; Harn Acid-Resisting Toble Top Caating; Fumex; Fumex Undercooter

19—TOILET ROOMS

WALLS AND CEILINGS:

Horn Suctian Seolers; Horn Super Fume Praaf Undercooter; Horn Super Fume Praaf Enamel; Horn Namel; Horn Duocoat; Fumex; Fumex Undercaoter

SLATE PARTITIONS:

Hornlux

METAL PARTITIONS:

Horn Industrial Enamel; Hornspor

20—EXTERIOR WALLS

Horn Suction Sealers; Harn Symentrex; Harnac; Harn Dehydratine 2-2A; Horn Waterfail; Rexide; Hydratite; Staybrite Mortar Calars; Harnrack; Harnac Exteriar Primer

21—LOCKERS

Harn Locker Enomels; Horn Vornishes

22—DAMPPROOFING & WATERPROOFING

Dehydratine No. 1, No. 2-2A, Na. 3, No. 4, Na. 6, No. 10 ond No. 80; Hydrotite; Metalan

23—GYMNASIUM

FLOORS:

Harnglaze Cleaner; Harn Florcrex; Harn Duacrex; Harnglaze Wax

WALLS AND CEILINGS:

Super Streamlite; Harn-O-Tane; Harnrack; Super Fume Praaf Enamel; Horn Namel; Duocoat; Super Fume Proof Undercooter; Fumex; Fumex Undercooter

24—PARAPETS

WALLS:

Horn TripleFlex Fabric; Harn Dri-N-Tite; Horn Elastex

COPINGS:

Harn Vulcatex or Hornlastic (Knife ar Gun Grade); Vulcotex Thriftpoks; Hornlastic Thriftpaks; Harncaulk; Jaint Primers

25—AUDITORIUM

WALLS AND CEILINGS:

Super Streomlite; Acausticol Surface Paint; Suction Seolers; Horn-O-Tane; Super Fume Proof Enamel and Undercoater; Harn Namel; Duacoat; Fumex; Fumex Undercaater

FLOORS:

PDQ Koncrex; Concrete Floor Enomel; Hornglaze Cleoner; Harnglaze Wox; Duocrex; Flarcrex; Maintenex

26—WATER TANK

Interior Tank Paints; Metal Primers; Golvonide; Rexide; Hornoc; Harnatol; Aluminum Paint; Graphite Paints

27—STADIUM

Hornac; Florcrex; Floorkoter; Rexide; Symentrex; Farmfilm; Waterfoil; PDQ Kancrex; Dehydratine 2-2A; Hornrock

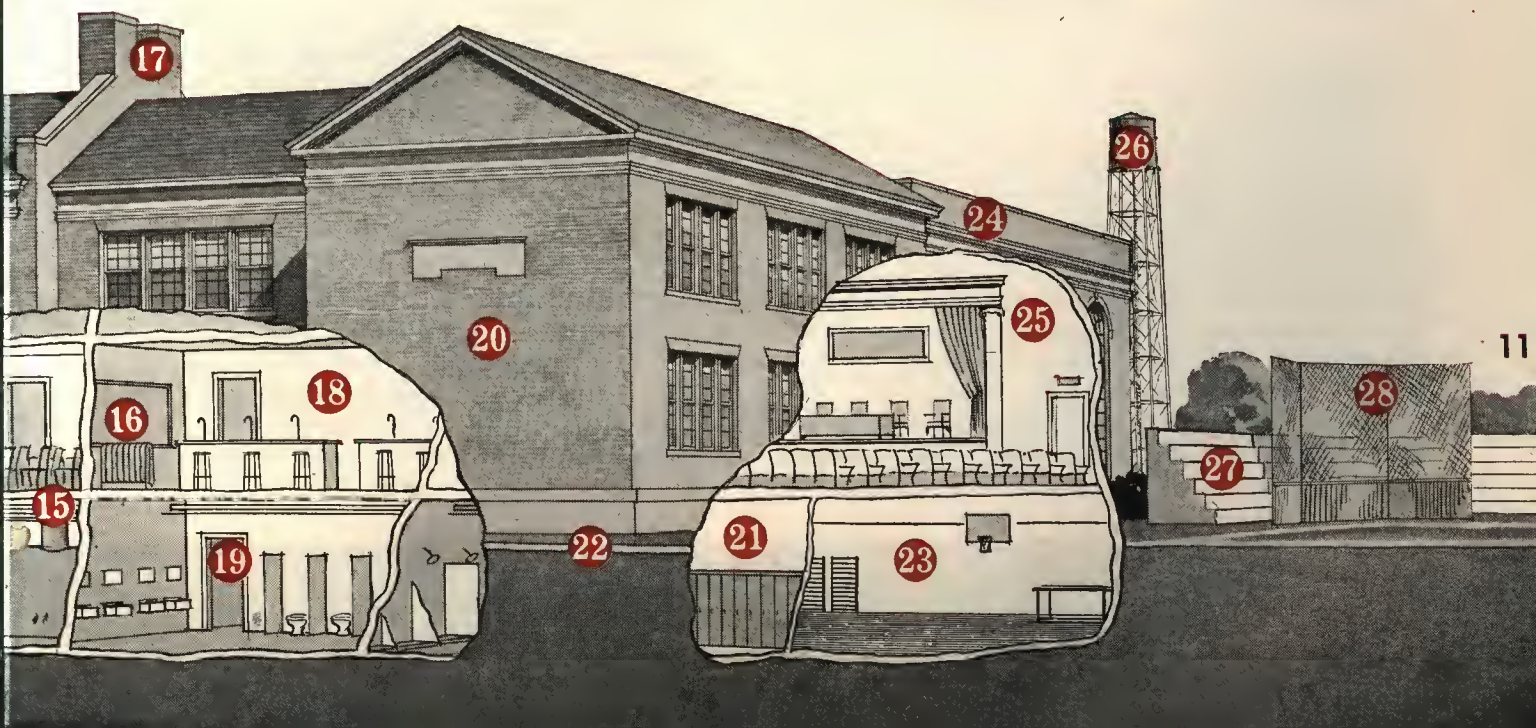
28—FENCES

WOOD:

Hornoc Exterior Primer; Harnoc; Rexide

METAL:

Metol Primers; Galvanide; Rexide; Graphite Paints; Asphaltum Paints; Aluminum Paint; Rustbaar



CONCRETE ADMIXTURES

THE AIR ENTRAINING AGENT FOR CONCRETE AND FOR CEMENT MORTARS

AYR-TRAP

AYR-TRAP, as the air-entraining agent in concrete makes it more durable, increases its workability and minimizes segregation and bleeding. Ayr-Trap is used in concrete for roads, sidewalks, exposed structures, dams and bridges and in cement mortars.

Three to five percent of air, trapped in the concrete in the form of tiny, individual bubbles will maintain flexural strength with age, improve scaling resistance and in general will protect the concrete. Air entrainment greatly improves *workability* and permits a *reduction* in the water/cement ratio. The amount of air trapped in the concrete must be controlled.

Ayr-Trap is safe. Small deviations under field conditions do not alter its benefits. It is relatively independent of the proportion of sand—also of the slump and mixing time in transit-mixes. Ayr-Trap is stable, it does not deteriorate or cake on standing.

This combination of desirable properties is achieved because Ayr-Trap is a synergic mix consisting of two elements, each of which is present in such minute quantity that it causes no undesirable effects such as most organic materials do. Yet, in combination these two components in such small quantities give the full measure of air entrainment.

AYR-TRAP in MORTARS

Ayr-Trap is a valuable ingredient in mortars as it increases the life of buildings by checking disintegration of mortar joints. It also imparts greatly improved workability and water retention. In mortars the same amount of AYR-TRAP is used per bag of cement as in concrete.

Ayr-Trap is available *only in liquid form* to be used as follows:—

Liquid Ayr-Trap—Use 3 ozs. per cubic yard of 5 or 6 bag mix—1 pint per 5 cubic yds. 6 bag mix. Write for detailed technical literature and prices. You save money and do a better concrete job with Ayr-Trap.

FOR *Water-Resistant* CONCRETE

HYDRATITE

PASTE — POWDER — LIQUID

To be mixed with cement to make concrete and cement resistant to water.

When added to cement, it tends to form an insoluble material which acts as a lining on the side walls of the pores or voids in the mortar, thereby making these surfaces water repellent.

HYDRATITE PASTE

Hydratite Paste is used in the proportion of two lbs. per bag of cement. The material weighs eight pounds per gallon, therefore the two lbs. is often referred to as a quart per bag of cement. Where the mortar is hand-mixed, it is preferable to mix cement and aggregate dry, add a small amount of water — then add the proper quantity of HYDRATITE PASTE which has first been diluted with a small amount of water — then add additional water to achieve consistency desired. Where machine mixers are used, the HYDRATITE PASTE may be added directly to the mix.

Covering Capacity: Use 2 lbs. of Hydratite Paste per bag cement. Figure 8 lbs. or 1 gal. per 100 sq. ft. of 1" floor topping. Figure 12 lbs. or 1½ gal. per cu. yd. of 1-2-4 concrete.

HYDRATITE POWDER

In certain localities, the use of integral waterproofing in powder form has became preferable. HYDRATITE POWDER may be readily added to the dry aggregate prior to mixing, and is used in the standard proportion of 2 lbs. per bag of cement.

Covering Capacity: 2 lbs. per bag of cement. Estimate 8 lbs. per 100 sq. ft. 1" floor topping. Estimate 12 lbs. per cu. yd. 1-2-4 concrete.

HYDRATITE LIQUID

The question of whether integral waterproofing should be packed in paste, powder or liquid form has became one of local preference and common usage. It is really of no consequence as to whether delivery is obtained in any one form. In order to meet any local preference, HYDRATITE LIQUID is sometimes considered more convenient.

Covering Capacity: Use one quart per bag of cement. Figure 1 gal. per 100 sq. ft. of 1" topping. Figure 1½ gals. per cu. yd. of 1-2-4 concrete.

SPECIFICATIONS

All concrete below grade, or slabs in contact with the ground shall be made water-resistant with HYDRATITE in accordance with the exact directions of the manufacturer, the A. C. HORN COMPANY.

LIQUID COATING FOR CONCRETE FORMS PRODUCES READY-TO-PAINT SMOOTH CONCRETE

FORMFILM

Description: FORMFILM is the liquid cooting which has made proctical the use of fir plywood for concrete forms. The material flaws out to a smooth, even, gloss-like finish, dries quite ropidly and, due to its resistance to maisture and alkaline oction of concrete, prevents the raising of the grain af the wood. Wood forms coated with ordinary "farm ail" can only be used ance. Fir plywood forms, after being cooted with FORMFILM, can be used aver ond over ogoin. When fir plywood farms, previously caated with FORMFILM, are stripped from the concrete, the resultant smooth concrete surface permits painting without a plaster coat or costly rubbing. FORMFILM is adoptoble for any type of work where smaoth concrete, speedy construction ond economical use of the forms is desired. Horn FORMFILM enables the cantroctor ta:

1. Increose the life of the plywood
2. Eliminate groin morkings in concrete
3. Eliminote ail deposits on the face of the cancrete
4. Completely seol the edges ond bose of the boords
5. Strip absolutely clean
6. Use forms mony times without re-cooting

Use: FORMFILM is opplied to the virgin plywood. The woad must be free from form oil, or other foreign motter. May be applied by dipping or by brushing. Usuolly thinned with FORMFILM thinner, depending an jab temperature. Average thinning required is one gollon of thinner to ten gallons of FORMFILM. Two coats are recommended for brush applicatian; one far dipping is usually sufficient where dipping tanks ore used. The obrasive traffic of plocing steel reinforcing on horizontal surfaces such os floor slabs, may necessitate tauching up the scratches by brushing, ofter forms are in ploce. Avoid substitutes far FORMFILM which moy be non-alkali resisting ond expensive when computed on basis of number of uses af panels.

Covering Capacity: Dipping ond brushing: approximotely 200 square feet per gallan, depending on parosity of plywood.

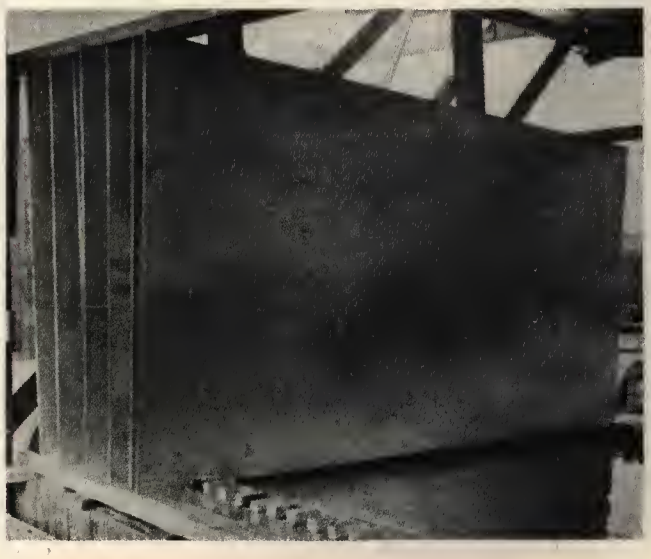
FRANK MESSER & SONS, Inc
GENERAL CONTRACTORS
Reply to Field Office
P. O. 125 • LOCKLAND • OHIO
Telephone Valley 5438
2813 BURNET AVE • CINCINNATI • OHIO

A. C. Horn Company,
Building Materials Division,
Long Island City, N. Y.
Gentlemen,

The results obtained by covering plywood, used for concrete form work, with Horn FORMFILM have been very satisfactory, both as to preservative of the plywood itself and also the surface obtained on the concrete.

We have used several thousand gallons.

Very truly yours,
FRANK MESSER & SONS, INC.
DAJ-h
By
Gen'l. Superintendent.



CONCRETE FLOORS - COLORED

RED

•

Hotels
Banks
Sidewalks
Service Stations
Hospitals
Stores
Show Rooms
Industrial Plants
Schools
Theatres
Railroad & Bus Stations

•

GREEN

THE BEAUTY AND DURABILITY OF TILE AT CONCRETE FLOOR PRICES

COLORUNDUM

FOR INTERIOR AND EXTERIOR WORK

COLORUNDUM is a dry powder composed of powerful coloring mediums, fused aggregates, dampproofing and hardening elements, plus cementitious binders.

Applied as a dust coat with a steel float or trowel, as the floor is laid, COLORUNDUM forms a colored armor-plate integrally with the cement finish. The non-slip, dense surface of COLORUNDUM, similar to that of ceramic tile, and equivalent to tile in beauty and durability, makes an ideal flooring for school corridors, auditoriums, stores, showrooms, sidewalks, ramps and other flooring subject to public traffic. Whether Indoors or Outdoors it is resistant to traffic wear and exposure.

COLORUNDUM is no more costly than a painted concrete floor, while its properly finished immaculate surface is comparable in beauty and permanency to tile floors.

Covering Capacity: 30 pounds per 100 sq. ft. of floor area.

Colors: Red, Green, Brown, French Grey, Black.

COLORUNDUM SEALER

For best results, whenever COLORUNDUM is used such use should be followed immediately with an application of COLORUNDUM SEALER. The function of COLORUNDUM SEALER is to deepen the color and produce a uniformity in finished appearance. It is designed to minimize construction traffic stains, retard efflorescence, seal in moisture, and to assist in the proper curing of the topping.

USE: Brush application of one coat may be applied as soon as the floor can be walked upon without marring the surface.

COLORUNDUM SEALER can also be used for application to untreated colored concrete floors to restore the appearance of fading colors and produce a fresh uniform color finish.

COLORGLAZE

Description: A liquid colored wax base penetrant sealer.

Use: As a dressing applied to COLORUNDUM floors and all colored concrete floors and magnesite floors.

Covering Capacity: Approximately 150 to 200 sq. ft. per gallon.

Colors: Red, Green, Brown, Grey, Black.

CONCRETE FLOORS

LIQUID INTEGRAL CONCRETE FLOOR HARDENER AND ACCELERATOR FOR *Water-Resistant* CONCRETE

DEHYDRATINE No. 80

Description: A concentrated chemical solution which is added to the water used to hydrate cement. Develops both the initial and final set in less than one-half the usual time. Doubles the compressive strength at end of one day. Wearproofs and dustproofs cement floors by producing hard "fatty" dense troweling. Reduces freezing point in winter. Densifies through increased hydration and plasticizing.

Use: In concrete floor construction to eliminate costly overtime labor by accelerating the set and making possible earlier troweling. Produces a hard, dense surface. Particularly recommended for new floor areas which cannot be long protected from traffic. Used in concrete for early strength. Used in brick mortar in cold weather as anti-freeze and to reduce labor.

Covering Capacity: For 1" thick floor topping, estimate 1 qt. per bag of cement or 1 gal. per 100 sq. ft. For concrete, estimate one gallon to each 10 gallons gauging water.

FOR CURING CONCRETE

HORNCURE

What Are Results of Ineffective Curing? Ineffective curing works only on the material adjacent to the surface although it is the surface of the concrete that provides the greatest resistance to wear and weathering. There are many causes of concrete deterioration, but inefficient curing of the surface is a major cause.

How Does Concrete Lose Water? Two ways. By evaporation and by leakage into subgrade where the concrete is in contact with the subgrade.

What Are the Functions of an Effective Curing Compound? To place an impervious membrane on the slab of concrete immediately after it is placed. This membrane must be a tight film. It must seal the surface.

Will That Stop the Water Loss? Yes, it will. It stops the evaporation from the surface and it also builds up a vacuum in the slab which retards the leakage.

Why Is This So Important? Because tests show, that due to evaporation, the loss of strength of the upper portions of a concrete slab is 40% to 50% of the strength developed in the lower portions. Greatest loss of strength occurs during the first 12 to 24 hours. Proper curing performed during this period tremendously influences the future strength of the concrete.

What Is Horncure? It is a carefully formulated material, designed to seal and to adhere to concrete in one operation . . . and to form a transparent, watertight, airtight seal.

Does It Discolor the Concrete? It does not. It neither stains nor mottles even the lightest shades of concrete.

How Does It Dry? It dries quickly, uniformly, evenly and without pinholes. It dries with a film that is both flexible and tough.

When Is It Applied? Immediately after the concrete has been placed and finished.

How Is It Applied? By brush or spray, the latter consisting of a pressure tank and a motor connected with a direct compressed air compressor. It is a one man operation.

What Is Its Coverage? One gallon will cover approximately 270 to 350 square feet of concrete when applied as directed and before the concrete is dry.

FOR DARKENING CONCRETE AND MORTAR

A E DISPERSED CARBON BLACK

Description: A specially formulated carbon black of semi-paste consistency for the darkening of air entrained or regular concrete. It reinforces the resistance of concrete against scaling and spalling; eliminates glare, improves road safety, highway appearance, pavement color, and helps de-icing of roads. Meets all specifications on color and compressive strength.

Use: Recommended for concrete roads, driveways, streets, curbs, terrazzo, stucco, cement blocks, airport runways, ramps, bridges, walks, floors, platforms.

Covering Capacity: To be mixed in the proportion from 1 lb. to 8 lbs. of A E Dispersed Carbon Black per bag of cement to produce the proper shade of color from light grey to a jet black, in accordance with manufacturer's specifications.

FOR INTERIOR OR EXTERIOR SURFACES

TREAD-SURE

Description: A heavy-bodied, non-slip, granular coating to be applied to wood, concrete or steel floor surfaces subject to foot traffic. It forms a tough, resilient, shock absorbing, and dustless floor.

Use: For interior or exterior surfaces. Resistant to oil and water. Suitable for concrete floors, metal surfaces, steel decks and stair treads. Recommended for application around machines, ramps, walkways and other areas subject to slip hazards. NOT recommended for surfaces subject to heavy truck traffic. May be applied to painted or unpainted floor surfaces.

Covering Capacity: Approximately 100 sq. ft. per gallon, depending on porosity and texture of surface.

Color: Battleship Grey, Red and Green.

CONCRETE FLOORS
construction and repair

METALLIC FLOOR HARDENER

FERRO-FAX

Description: A finely divided and properly graded metallic aggregate free from oil ond all impurities. When incorporoted into a cement floor topping or monolithic floor ot the time of instollotion, it produces a smooth, dense, steel-like surface which is highly resistant to weor ond dusting.

FERRO-FAX is approved by leoding architects and engineers ond has been used upon millions of squore feet of floors for the past 30 years.

Use: Mixed with equal ports by volume, dry Portland Cement (2 bags Ferro-Fax to 1 bag cement) and dusted over o floor topping at time of flooting ond troweling. Pocked only in 100 lb. contoiners. Ferro-Fax hos become the standord method of hordening concrete floors. Extensively used over troweled-off rough concrete from which the usual sond ond cement topping has been omitted. Finished floors should not be wet down for curing for 48 hours ofter installation.

Covering Capacity: Standord Concrete Floors — 30 lbs. Ferro-Fax per 100 sq. ft. Averoge Monolithic Non-Topping Floors — 40 lbs. Ferro-Fax per 100 sq. ft. Heovy Duty Floors — 60-125 lbs. Ferro-Fox per 100 sq. ft.

Standard Colors: Noturol, Red, Brown.

WATERPROOFING AND COLOR COMBINED

STAYBRITE

Description: To dry colors having maximum tinctorial strength has been factory added Horn woter-resistant materials. Minimizes the masking or so-colled foding of colored cement work, by retording the formation of the usual groyish mosking film of efflorescence or laitance. Due to the high tinctoriol strength, only small quantities ore required.

• NO JOB MEASUREMENT

• NO WASTAGE • NO SPILLAGE

Use: STAYBRITE comes packed in poper bogs contoining exoct amount required for eoch bog of cement in the mix, moking job measurement unnecessary.

Standard Colors: Tile Red, Block, Persian Yellow, Alaskon Brown, Linoleum Brown, China Blue, Egyptian Green.

FOR PATCHING AND RESURFACING CONCRETE FLOORS

NU-WAY RESURFACER

Description: Shipped reody for use, every batch of Nu-Way Resurfacer is identicol. Failures due to ingredients not being uniform in quality and grading or which hove been incorrectly proportioned ore completely eliminoted. Unsuitoble aggregates ore ovoided, resulting in o composition of maximum density and load corrying ability.

Use: Topping or potching applicotions sholl not exceed ½ inch in thickness. Nu-Woy Resurfacer bonds perfectly to the surface to which it is applied. No mechanical key is required. It forms o tough, resilient, shock obsorbing, non-slippery ond dustless floor.

Not recommended for floors subject to contoct with woter, oils, greose, blood, fats, or floors constantly wet with liquids.

FOR GROUTING UNDER MACHINERY AND PATCHING CONCRETE FLOORS

VIBRO-FOIL

Description: Vibro-Foil is o powder compound of iron and hardening elements which, when mixed with ordinary Portland Cement and sond, produces a ductile, metallic grouting which hos o minimum shrinkoge upon curing. The metallic aggregotes having "give ond toke" quolities, obsorb vibration, pounding and heovy wear. Produces water-resistant, oil-resistant and wear-resistant surfoces. The metollic particles in the grout oxidize as soon as the mixture is tempered, causing exponsion within the mixture which holds the grout firmly against the bed plate of machinery, or in potching avoids shrinkage cracks.

Use: Vibro-Foil is used in the grouting under steel mill shoes ond heovy mochinery when it is set upon its foundotion. Proper alignment is retained since shrinkage ond consequent vibrotion are eliminated. Also used for patching holes in concrete floors, steel grid floors, loading docks ond platforms, and grouting bolts in concrete.

Vibro-Foil is recommended for topping, potching and repoirs of concrete floors in dairies, creameries, food packing plonts, breweries, laundries, conning plants, ond floor areos subject to spillage of water and destructive liquids.

Covering Capacity: 1 cubic yord of grouting requires: 15½ sacks of Portlond Cement, 1550 lbs. Vibro-Foil, 15½ cubic feet of sond.

Floor Patching Vibro-Foil Requirements ore based on quantity of cement used.

FOR QUICKLY AND ECONOMICALLY PATCHING AND RESURFACING CONCRETE FLOORS

CRETE-FIX

- **Patches Concrete Floors in 36 Hours**
- **Bonds to a Feather Edge, Eliminating Chipping**
- **Saves 20% in Cost of Repairing**

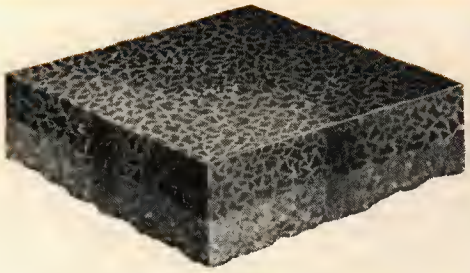
Description: Breoks, holes and crocks in concrete floors may be repaired with ordinory concrete mixed with CRETE-FIX. The result is o resilient and dustproof potch in o few hours. CRETE-FIX is free from oils, solvents, driers, ond contoins nothing to hosten oxidization or shorten its life. It is impossible for this moteriol to become brittle ond lifeless. CRETE-FIX will adhere tightly to the floor, and not only forms an inexpensive patch, but one that will give service for beyond that of the original floor. The concrete gets its durability from the resiliency of CRETE-FIX rother thon from its hordness.

Use: The surface upon which a CRETE-FIX flooring will be laid must be thoroughly cleaned of oll dust, dirt, loose or floky moteriol, oil, grease, point, ocids, alkalies, blood, etc. Acid ond olkali must be completely neutrolized and the floor then flushed with a hose. The edges of the new surface con be tapered down to a feather edge and there will be a positive bond. This eliminates chipping ond digging out the old floor, greotly reducing the cost of patching. Skilled lobor is not required. A complete job can be done in 36 hours.

Not recommended for floors subject to contoct with woter, oils, grease, blood, fats, or floors constontly wet with liquids.

"BLUE TEMPER" FLOOR HARDENING COMPONENT

FEREM



The use of Ferem assures a dense, ductile and almost diomand-hard floor surface with practically no upkeep costs.

Description: FEREM is a complete moterlol containing oll the desirable charocteristics of hordeners, odmixtures ond processed components. FEREM contoins no sond, stone or silica, ond requires only the addition of cement ond woter.

FEREM "Blue Temper" floors are unusually resistont to wear, woter ond chemlcol dislntegration and withstond severe usage without showing it, because the high non-crush copacity of FEREM resists the shock ond abrosion of heovily loaded trucks. In oddition, FEREM floors hove o non-slip quolity which mokes them sofe when wet.

The ductility of o FEREM floor is comparoble to thot of a blue tempered steel cold chisel. Floor toppings with FEREM component hove approximotely four tlmes the compressive and tensile strength of ordinory cement topped floors.

Use: FEREM is widely used for industriol floors (especially looding plotforms, receiving and shipping room floors, corridors, runwoys, etc.) which ore subject to heovy troffic, shock and obrosion. They ore porticulorly suitoble for dairies and creameries, where heavy cans ore dropped or rolled on floors, and where loctic ocid spilloge is present. FEREM is mode for oll heovy duty floors, either in new construction or when patching, re-surfacing or reloying worn and eroded floors.

Mixing Proportions: Three 100 lb. contoiners of FEREM ore mixed with one bag of either Portlond or hl-eorly cement. (By volume this is equivolent to one port cement to three ports FEREM.) After these moterlals are thoroughly *dry-mixed* to a uniform color, sufficient woter ls odded to moke o stiff topping.

CHEMICAL AFTER TREATMENT DUSTPROOFING FOR CONCRETE FLOORS

HORNSTONE

Liquid and Crystals

Description: Hornstone represents o concentrotion of mognesium fluosilicote ond zlnc fluosilicote in powder form. When applied to a concrete floor surfoce, it reocts with the cement ond lime to form new binding moteriols ond new ond horder compounds, forming these lnto o flint-like moteriol which eliminotes dusting. Furnished in liquid os well as crystal form.

Use: Mixed in the proportion of two pounds per gallon of woter, the solution is flushed over the surfoce of the cement floor with o mop or broom. The penetrotion which tokes ploce, together with the chemicol reoction, produces a hard, dense, weorproof surface which does not gronulote or dust under traffic. Does not change the oppeoronce of the floor. Not recommended for colored cement floors. Sufficient number of coots should be used to thoroughly saturote the surfoce.

Covering Capacity: A soft porous floor ollows greoter penetration ond requires more moteriol thon o horder, denser surfoce. Average floor requires 2 pounds per 100 squore feet of oreo.

A RUBBER BASE COATING

HOLZON

Description: A pigment rubber base liquid especiolly designed for applicatlon over concrete surfoces ln contact with the eorth, such as; interior mosonry, bosement floors ond swimming pools.

HOLZON offers protection and decorotion in one operotion. It dries with o smooth gloss surface ond is eosily cleoned.

Use: HOLZON must be opplied to an unpainted surfoce. If virgln cement ls smooth, ocid etch using 10% muriatic ocid solution to provide o "tooth" or bond. Flush surfoce thoroughly with cleon woter ond ollow to dry. Apply two coots of HOLZON without thinning. Brush out eoch coot very well. Allow 24 hours to dry between coots, ond before opening floor to troffic.

HOLZON is non-toxic ond moy also be used for the coot-ing of concrete fish and flower pools.

A speciol HOLZON swimming pool blue is recommended for the inside of concrete swlmmlng pools.

A HOLZON covered floor moy be woxed to produce a fine doncing surfoce.

Covering Capacity: Approximotely 350 squore feet per gollon per coot, depending on surface irregulority ond porosity.

Colors: Red, Green, Brown, White, Cleor and Swimming Pool Blue.

FLOOR TREATMENTS

SEALER FOR ALL TYPES OF WOOD FLOORS

FLORCREX

Description: A penetrating sealer which, when applied over wood floors, impregnates the wood fibres, excludes dirt, stains and maisture, resists dry rot, splintering and checking.

Use: Applied with mop applicatar or rag over sanded or virgin waad floors; surface excess is remaved with dry rags. Seals by depositing synthetic compaunds directly belaw the wearing surface. Dries avernight. Furnished in clear and "oak color." Wax with Harnglaze after sealing.

Covering Capacity:

On open-grain wood, approx. 350 to 450 sq. ft. per gal.
On close-grain wood, approx. 450 ta 600 sq. ft. per gal.

FOR PRESERVING WOOD AND CONCRETE FLOORS

DUOCREX

Description: DUOCREX is not an oil dressing nor a varnish, but a chemical compound of gums and preservatives, developed after diligent research, with the sole idea of praducing a perfect dressing for floors. It is o thin bodied coating having many of the characteristics of varnish and can be applied in a similar manner. After it has dried hard the resulting surface is one that can be kept clean and attractive by merely dusting off.

Use: When applied to a concrete floor DUOCREX is thin enough in body to work into the pores of the surface, sealing them so as to make a solid film over the entire surface. It serves to minimize dusting of the concrete, and develaps a concrete floor that is waterproof on top, but it will not prevent water from coming through. On wood surfaces, due to maximum penetration of DUOCREX, mare than one application is usually required. By thus penetrating the wood surface DUOCREX fills the minute cells, reinforcing the entire surface and greatly increasing its resistance ta wear. DUOCREX dries in half the time of mast varnishes and the majority of oil dressings. It provides a smaoth but not slippery surface which is dust-free, wear-resistant and which never becomes brittle.

TRANSPARENT PENETRANT FOR NEW TERRAZZO OR COLORED CONCRETE AND MAGNESITE FLOORS

HORNLUX

Description: Hornlux is a liquid which, by means af its peculiar composition, allows the penetration of a phenol-formaldehyde condensation product down into a newly completed terrazzo or colored concrete floor. Not a surface coating. Applied with a rag. Allawed ta penetrate far several minutes and then all of the surface excess is wiped off.

Use: Ta seal the porosity, densify, harden and immediately develop the color of colored cancrete or NEW terrazzo floors. Used on colored concrete floors before waxing. Used to restore the true color and finish of new ar old magnesite floors. After application, allow to dry overnight.

Covering Capacity:

New Terrazzo Floors: Approx. 800-1000 sq. ft. per gallon.
Concrete Floors: Approx. 400-600 sq. ft. per gallon.

SELF-POLISHING WAX

HORNGLAZE

Description: A liquid emulsion of carnauba wax formulated to produce a self-polishing, taugh, hord, water-resistant finish over linoleum, rubber tile, asphalt tile or hardwood floors.

Approved by leading manufacturers of flooring and floor coverings.

Use: Surfaces can be dry-mopped instead of scrubbed or wet mopped. HORNGLAZE prevents grime fram impregnating the floo· or the wax film and insures immaculate appearance.

FOR REMOVING WAX AND ELIMINATING POROSITY

HORNGLAZE CLEANER

A liquid compound especially designed to clean surfaces preparatory to receiving Hornglaze Wax. Ideal for cleaning floors, walls and painted woodwork. Diluted with from 1 to 15 parts of water, depending upon strength required. Added to scrubbing water usually in proportion of either 1 pint or ½ pint to ¾ bucket of water.

HORNGLAZE CLEANER not only acts as a proper cleaner, but also leaves the pores filled with a dry, hard residue which means a soving in coverage per gallon when applying subsequent wax coatings.

FOR CLEANING MARBLE, TERRAZZO AND COMPOSITION FLOORS

HORNBRITE

A cancentrated liquid added to the scrubbing water for cleaning marble, travertine, mosaic tile, terrazzo and composition floors. The hard dry residue deposited in the pores does not leave a surface film and permits easier cleaning after several treatments. It prevents the pitting and chipping of terrazzo and eliminates the use of harmful cleaners such as scouring powders, alkali cleaners, sweeping compounds, oil mops or powdered soaps.

HORNBRITE cantains bleaching elements which counteract the natural tendency af terrazza and marble to "yellow" from age and traffic.

Used in propartion of ½ pint or 1 pint to ¾ bucket of water. Use in stronger prapartions far very dirty surfaces.

In back af modern methods af floar maintenance stands the experience gained by the A. C. Horn Company, Inc. in over fifty years af manufacturing and research. It is perhaps unnecessary to mention that both the methods and praducts have been given the most vigarous practical tests under the supervision of the Horn Laboratories.

CONTRACT WATERPROOFING SERVICE

labor and materials

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10

CONTRACTING DIVISION A. C. HORN CORPORATION 19

LONG ISLAND CITY 1, NEW YORK

A HORN PRODUCT

A. C. HORN COMPANY, Inc. manufacturers of

BUILDING MAINTENANCE AND CONSTRUCTION MATERIALS

BACKGROUND AND RESPONSIBILITY

BACKGROUND

Founded in 1897. Pioneers in the manufacture of materials, and the development of methods for protection, decoration and water resistance of structures. Producers of a complete line of time-tested products which makes the word "Horn" a by-word in every architectural, engineering and Industrial specification.

RESPONSIBILITY

A financial rating of the highest given by mercantile credit agencies—AAA1.

PLANTS

Factories, laboratories and office buildings occupy over three square blocks in the heart of one of America's greatest Industrial centers; also in strategic locations throughout the country.

WAREHOUSES

Strategically located at such points as Chicago, San Francisco, Los Angeles, Houston and Toronto.

LABORATORIES

Horn maintains three completely staffed laboratories—Research, Factory Control and Raw Material Control; skilled chemists in all and supervised by recognized leaders in their respective fields.

BRANCH OFFICES

Complete sales and engineering service is available in most of the larger cities. See list below. Address all inquiries to A. C. HORN COMPANY, Inc., Long Island City 1, N. Y.

HORN CONSULTING SERVICE

The A. C. Horn Company maintains a complete staff of engineers, thoroughly equipped and fully informed on problems concerning waterproofing, dampproofing, floor treatments, industrial finishes, and materials for maintenance, protection and decoration. In addition, a complete contracting department operating throughout the nation for remedial restoration is available. Our knowledge is reinforced by data accumulated in more than 50 years of experience on thousands of projects, involving every industry, every variation in climate and every condition.

Horn Engineers are at your service to supply you with chemical and engineering information, and detailed specifications required for the proper solution of any specific problem that you may encounter.

Every Horn Product has been time-tested and proven capable of fulfilling its purpose when properly used. However, since the use of these products is beyond the control of the manufacturers, results, of necessity, must be dependent upon combination with other materials not of Horn manufacture, upon proper workmanship and upon local conditions.

Over half a century of continued leadership is the strongest assurance of efficient, practical, economical and satisfactory results. We strongly urge that you avail yourself of our experience and cooperation in every way possible on every job.

Detailed literature and color cards are available on the products listed in this catalogue. Please send for them.

A. C. HORN COMPANY, Inc.

Established 1897

Subsidiary of Sun Chemical Corporation

Tenth Street & 44th Avenue, Long Island City 1, N. Y.

Houston, Texas Chicago, Ill. San Francisco, Calif. Toronto, Canada

BRANCH OFFICES

Atlanta Albany Baltimore Birmingham Boston Buffalo Cleveland Cincinnati Dallas
Detroit Fort Worth Kansas City Los Angeles Milwaukee Minneapolis Newark New Orleans
Oakland Philadelphia Portland Rochester San Antonio Seattle St. Louis Syracuse Washington

established 1889

ELASTIC kuhls

REG. TRADE MARK U. S. PAT. OFF.

WATERPROOFING COMPOSITIONS

for caulking, glazing, expansion joints, pointing-up, tile bedding and other products

H. B. Fred Kuhls, 65th Street and 3rd Avenue, Brooklyn 20, N. Y.

• • • have had world wide use in the industrial, greenhouse and marine fields for more than 50 years

uses

caulking
pointing up
expansion joints
waterproof coating
glazing
tile bedding
suction mastic
joint paint
bedding mastic
transparent waterproofing

origin

Kuhls "Elastic" Composition was originally made, fifty years ago, for sealing the seams in wooden decks and between the planks of ships.

wide application

Under these rigorous conditions—the wringing and twisting motion of the ship's timbers, the constant wetting and drying of the decks and repeated changes from one extreme of temperature to another —its performance proved so satisfactory that, today, it is recognized as the standard seam filler in all types of marine craft. Also used in construction of U. S. Navy Ships and U. S. Coast Guard Boats.

The adaption of this "Elastic" Composition formula for various conditions arising in the building field naturally followed its splendid record in the marine industry. Since it was first introduced for this purpose 50 years ago Kuhls "Elastic" Waterproofing Compositions have proven their superior qualities under severe tests in numerous types of construction in almost every country in the world.

Kuhls trade marks

"Elastic" trade mark applies only to products of H. B. Fred Kuhls

H. B. Fred Kuhls has the sole trade mark right to the word "Elastic" as applied to glazing and caulking compositions made by this firm. This trade mark was granted in 1904, and at various times has been renewed under the original trade mark registration.

warning

We wish to call the attention of architects and engineers to the above fact. Any firm using the word "ELASTIC" in the names of products, designed for similar purposes, is in conflict with the Kuhls trade marks (shown on this page) and is guilty of a direct infringement.

Kuhls "Elastic" compositions always made to performance standards

Kuhl's "Elastic" Products have always been manufactured on the basis of satisfactory performance. Continued research for better materials and a growing demand have resulted in better products at increasingly lower cost.

When you buy Kuhls "Elastic" Compositions, you have the background of a half century-old business with a reputation for quality, continuity and progressiveness. *Promises of performance or laboratory tests cannot compare with actual case records of satisfactory applications over a period of years.* This is an important point if product performance guarantees are required.

Kuhls "Elastic" Products are specified and used by the most prominent architects, builders and glaziers throughout the country.

reports of three investigating committees of architects and engineers

Inspections of installations of Kuhls "Elastic" Waterproofing Compositions were made in 1922-1926 and 1933 by three different groups of the Investigating Committees of Architects and Engineers. Some of the installations inspected had been installed from 15 to 25 years and the composition was still elastic and holding firmly. Full approval of Kuhls "Elastic" Waterproofing Compositions was granted by all three Committees.

ELASTIC
REG. TRADE MARK U.S. PAT. OFF.

TRADE MARKS
Reg. U. S. Pat. Off.

qualities of Elastic compositions

Elasticity—Kuhls "Elastic" Waterproofing Compositions remain elastic and flexible over a long period of years of exposure. They do not crack or crumble; will withstand heat, cold, moisture, excessive vibration, gases, fumes and rapid changes of temperature.

Bond—Kuhls "Elastic" Waterproofing Compositions will adhere strongly to galvanized and raw iron, steel, wood, glass, stone, concrete, terra cotta, tin, copper or any other material if its surface is dry and clean when the composition is applied.

Non-Staining—Kuhls "Elastic" Waterproofing Compositions are non-staining. They do not cause any stain regardless of how porous or fragile the material may be.

Color—Kuhls "Elastic" Waterproofing Compositions can be manufactured in any color to harmonize with structural material. For specific range of colors see description of particular material.

Consistency—Kuhls "Elastic" Waterproofing Compositions are made up in consistencies for application with a trowel, knife or gun.

a product for each specific use

Our tests have proven conclusively that one composition cannot be equally satisfactory for caulking around windows, pointing-up stone, expansion joints in promenade tile roofs, etc., and we have, therefore, developed a number of products, each designated to meet the specific requirements of the service for which it is intended.

consultation service

Consultation Service on Glazing, Caulking and Similar Problems—H. B. Fred Kuhls has in their employ men experienced and trained in their respective lines and with a sincere desire to cooperate in the fullest measure with architects, engineers and contractors, and they offer a complete and efficient service in the use of Kuhls "Elastic" Waterproofing Compositions, Paints and Coatings. Communications should be addressed to the main office.

nation-wide distribution

Kuhls "Elastic" Products Have Nation-wide Distribution—Kuhls products are distributed through the home office and the national distribution representatives are listed on the back cover of this catalog. These in turn distribute through the local glaziers, building supply and hardware stores in their territory. Adequate supplies for general distribution are carried at the home office and at these agencies. Unusually large quantities and special colors are shipped from the home office and factory.

Woolworth Building, New York, N. Y.
Kuhls Elastic Compositions used in construction.

caulking compositions

Hotel Roanoke, Roanoke, Va.
All windows coulked with Kuhls Elastic Gun Caulking Composition.

U. S. Printing Building, Washington, D. C.
All windaws coulked with Kuhls Elastic Gun Coulking Composition.

Photo by Richard Averill Smith

New York City Building, Flushing Meadows, L. I.
All windows caulked with Kuhls Elastic Gun Caulking Campasition.

a non-staining waterproof composition containing no asphalt or solvent

uses

around windows and frames of wood or metal
setting metal window frames between masonry and wood
between masonry and metal
window sills
door saddles
caulking glass block construction
For bedding frames of steel sash

elasticity of Kuhls "Elastic" caulking composition is different

This "Elastic" Composition is non-staining when used on masonry. It will not bleed through paint when paint is applied over it. It contains no asphalt or solvents. When set, a smooth tough skin is formed on the surface which like the body remains elastic. It yields slightly to atmospheric conditions, yet always makes a tight joint.

ready for use under any temperature condition

Kuhls "Elastic" Caulking Composition is used in any temperature direct from the container as shipped without the necessity of adding solvents or heating.

other characteristics

Does Not Crack, Chip, Crumble or Peel—Due to the continuous quality of its elastic body.

Adheres to Any Dry Surface—It will adhere to practically any surface of metal, wood or masonry, if it is dry when the composition is applied.

Readily Removed—The Caulking Composition may be removed at any time without destroying the surface to which it adheres as it does not become hard.

Unaffected by:

Extremes of Temperature—Actual installations under the greatest extremes of temperature have shown no appreciable change in the composition.

Vibration—This does not affect the materials or their adhesive qualities in any way.

Moisture—As the material is waterproof, water or moisture has no effect on it.

Acid Fumes—These do not affect the composition.

years of service in actual installations

Kuhls "Elastic" Composition has been specified and used by architects and builders for over 50 years for caulking between the joints of sash, doors and masonry, in buildings all over the country. Its reputation has been built on its "Elastic" quality which it retains for long periods of years. An example of its successful use was the bedding of glass in the metal frames of the so-called mooring mast of the Empire State Building. This is probably one of the most extreme exposures and constructions in the country. A list of buildings where it has been used near your office will be sent on request.

made in gun, knife and trowel consistencies

Colors—While the composition can be supplied, on special order, in any color including black, the stock color is a light gray. We recommend light colors as being more in keeping with colors for trim and sash and it will generally blend with them without painting. However, it can be painted without affecting the color of the paint.

Gun Consistency—The gun consistency is generally used in caulking between masonry and either steel or wood frames which have been installed and where a small neat joint will be exposed to view. The gun grade is shipped in cans, steel pails and steel drums of 1, 2, 5, 35 and 50 gals. It is also shipped in cartridge form—8 cartridges to the gallon; minimum case 8 cartridges; maximum case 40 cartridges. Weight 1½ lbs. per cartridge. *(Note: 7 gals. will fill approximately 1 cu. ft. of joint.)*

Caulking Guns—Kuhls Caulking Guns are supplied with interchangeable washers, for use with either bulk material or with cartridges. *(For illustration, see page 11.)*

Knife or Hand Caulking Consistency—This consistency is used for the same purpose as the gun grade when heavier composition is required. In such places as around store fronts and other easily accessible points where subject to possible defacement by children.

This grade is shipped in 1-, 2- and 5-lb. cans: 12½- and 25-lb. steel pails; 50- and 100-lb. steel drums. *(Note: 100 lbs. will fill approximately 1 cu. ft. of joint.)*

Kuhl's "Elastic" bedding mastic

Similar to the Gun Caulking Compound but is made in a special trowel consistency so that it can be spread on the frames of steel sash before setting.

It is supplied in the same size containers as the Gun Consistency but not packed in cartridge form.

specifications
caulking exterior doors and window frames

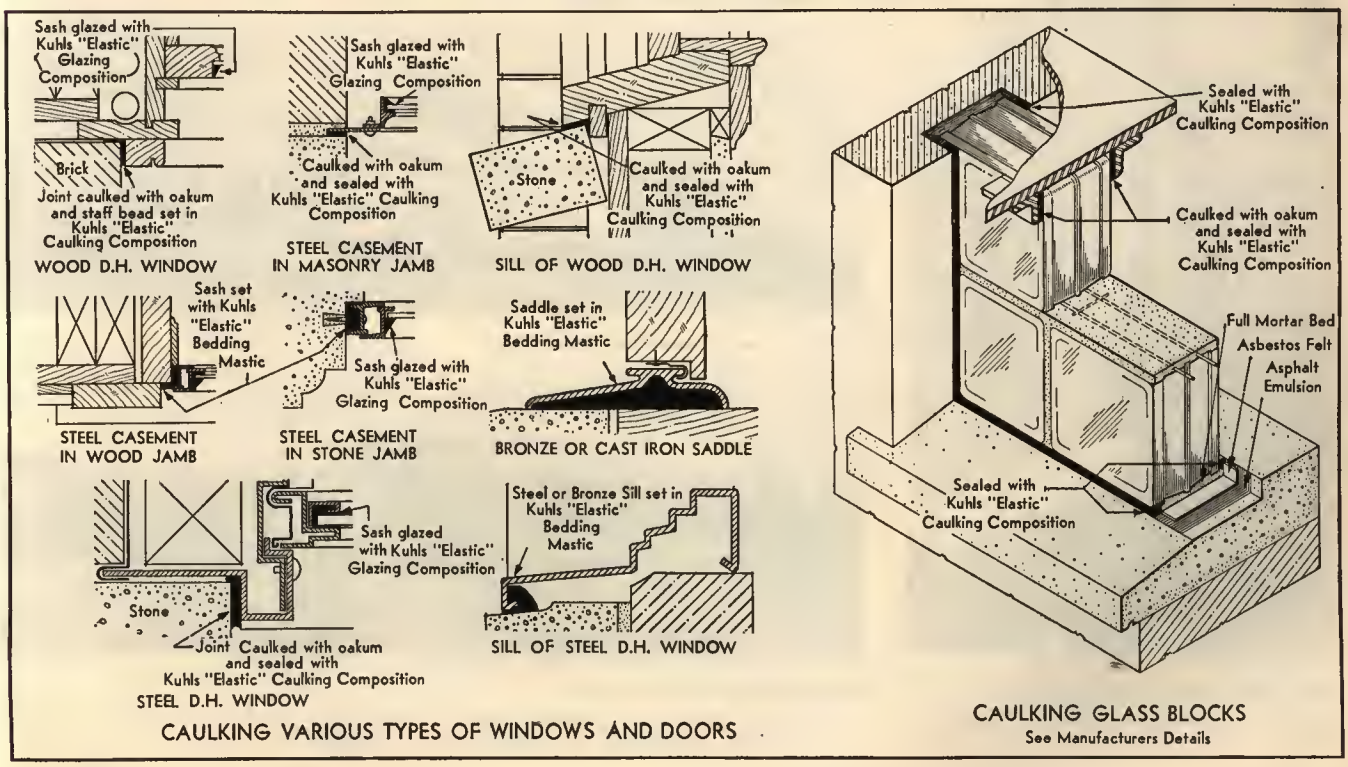
All exterior doors and window frames, unless otherwise noted, shall be caulked with Kuhls "Elastic" Caulking Composition as made by H. B. Fred Kuhls, Third Avenue and 65th Street, Brooklyn, N. Y. The color of the composition shall match as closely as possible the color of the frame and shall be non-staining, when painted with light colored paint; or over masonry. (It shall be free from asphalt and cutbacks.)

applications for new or old frames

The staff beads shall be removed and the joint, between the frame and the masonry, shall be completely filled to a depth of at least ¾ in. at head, jambs and sill and shall extend beyond the masonry enough to allow the bedding of the staff bead in the composition when the bead is replaced.

Joints, which are wide and deep on old or new work, shall be caulked with oakum to within ¾ in. of the surface, then caulk the remaining opening with Kuhls "Elastic" Caulking Composition as described above.

applications of Kuhls "Elastic" caulking and glazing compositions



pointing-up compositions

Tower of Chrysler Building, New York, N. Y.
Kuhls Elastic Pointing Composition used in construction.

No. 1 Wall Street, New York, N. Y.
23,000 lbs. of Kuhls Elastic Pointing Composition used in construction.

a non-staining "Elastic" composition for pointing-up joints in masonry

uses

copings	cornices	cap stones
water tables	brick walls	flashing pointing

projecting courses in all types of stone or terra cotta or concrete masonry, also for joints in enamel steel wall panels, metal spandrels, glass blocks, etc.

the pointing-up of joints in masonry

One of the most troublesome conditions in building construction is the pointing of exposed surfaces of masonry construction and connections between metal and masonry surfaces.

The ideal material for pointing up joints must adhere to the adjoining masonry under all types of temperatures and exposure, shrinkage and expansion, preserve a watertight joint and not stain the masonry.

qualities of Kuhls "Elastic" non-staining pointing-up composition

This material has fully demonstrated, for a number of years, that when properly applied, it forms an ideal seal for pointing-up joints in masonry under all types and conditions of exposure. It is especially made to be alkali-resisting.

Non-Staining—The Composition does not stain marble, limestone, terra cotta and other porous stones.

Elasticity—When set, a smooth tough skin forms on the surface which remains elastic and, with the elastic condition of the body, adheres to the adjoining surfaces and makes a watertight bond.

Adherence—Examples of the lasting qualities of the Pointing-up Composition have been found in the case of a building in New York City where the pointing of free standing terra cotta was exposed on all sides for 20 years and is still in perfect condition. It has also been exposed high in the air to sulphuric acid fumes. It makes a watertight bond to wood, stone, steel, glass or any other material.

Extremes of Temperature—Heat or cold or rapid changes of temperature do not affect it perceptibly or change its nature.

Acid Resisting—Acids, such as fumes or sulphuric acid encountered in the air, do not affect it.

John G. Shedd Aquarium, Chicago, Ill.

Chicago Natural History Museum.
Kuhls Elastic Caulking and Pointing-up Compositions used for general Re-pointing of exterior on the above buildings by the Great Lakes Contracting Co., Chicago, Ill.

how supplied

Colors—This is made in any color to match that of the adjoining material with which it is to be used.

Made in Gun or Knife Consistency—Gun Consistency can often be used to advantage in filling the joints in masonry as it can be placed more rapidly and without spreading it on the stone.

Knife consistency can be used where the joints are close and the material has to be forced in.

Gun Grade—Shipped in cans, steel pails and steel drums of 1, 2, 5, 30 and 55 gals. *(Note: 7 gals. will fill approximately 1 cu. ft. of joint.)*

Knife or Hand Pointing Grade—Shipped in 1-, 2- and 5-lb. cans; 12½- and 25-lb. pails; 50- and 100-lb. drums. *(Note: 100 lbs. will fill approximately 1 cu. ft. of joint.)*

Application—The joints should be raked out to a depth of ¾ in. and brushed clean. Then paint the joints with one or two coats of Kuhls "Elastic" Joint Paint so that it shows a gloss.

Note: **Painting of Joints**—The painting of the joints seals the surface and acts as an additional bond for the composition. Although about 50% of the installations are made without painting we recommend its use as better practice. This is also recommended by the Cast Stone Institute of America as a result of their tests and research.

specifications

For Pointing Joints in Copings, Tops of Cornices and all Projecting Courses in Granite, Marble, Stone, Terra Cotta, Architectural Concrete and Flashings.

The joints shall be raked out to a depth of ¾ in. and thoroughly cleaned. Joints shall then be thoroughly painted with one or two coats (or so that it shows a gloss) of Kuhls "Elastic" Joint Paint, as manufactured by H. B. Fred Kuhls, Third Avenue and 65th Street, Brooklyn, N. Y.

The joints shall then be filled with this Kuhls "Elastic" Pointing-up Composition thoroughly worked and pressed into the joint, so as to fill the entire joint and shall then be neatly finished flush with the adjoining surface.

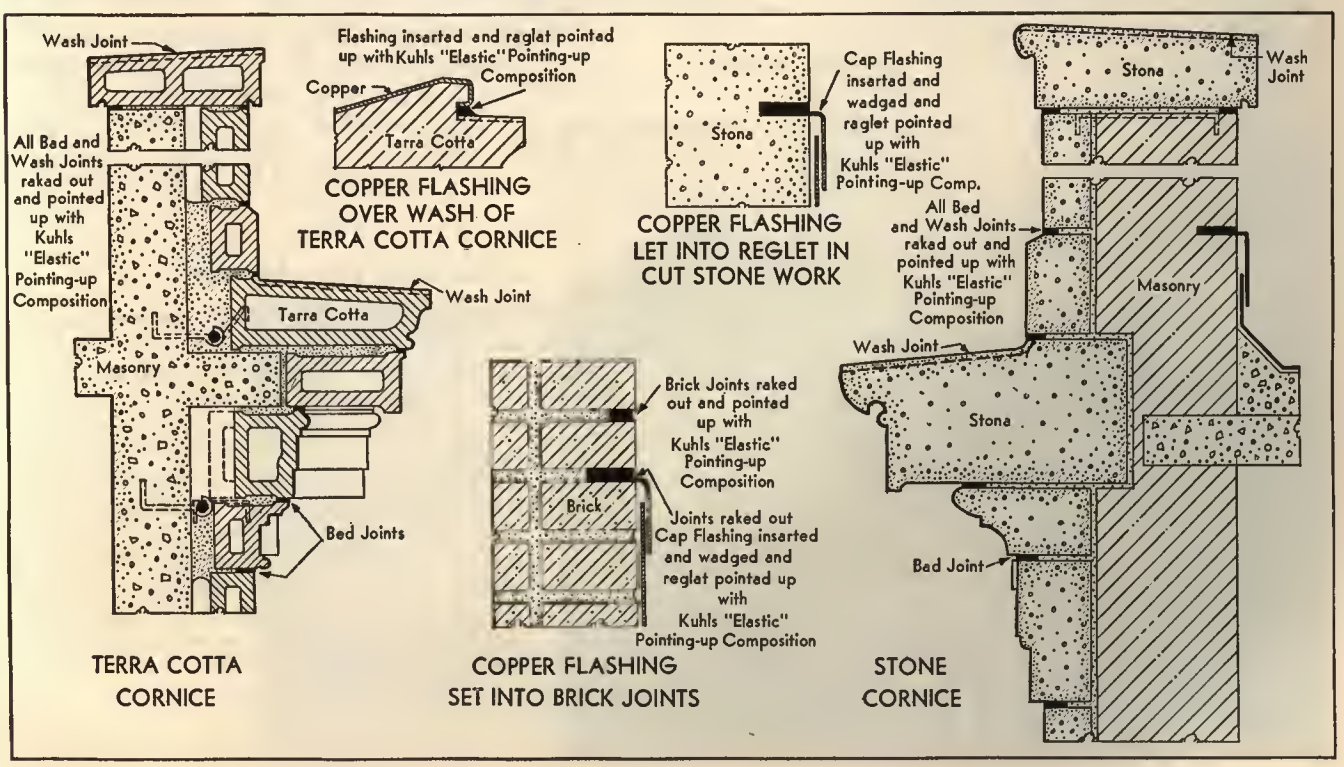
Color of Kuhls "Elastic" Pointing-up Composition shall be the color selected by the architect.

Mundelein College, Chicago, Ill.

North American Building, Chicago, Ill.

Kuhls Elastic caulking and pointing-up compositions used for repointing exteriors, Great Lakes Contracting Co., Chicago, Ill.

applications of Kuhls "Elastic" pointing-up compositions



glazing compositions

a non-hardening composition allowing glass to expand or contract whether set in wood or metal

uses

skylights
marquees
sheet metal windows
greenhouses
conservatories
office partitions
steel, bronze or aluminum windows

made in two types

Kuhls "Elastic" glazing composition for steel sash—also for bronze or aluminum sash

Kuhls "Elastic" glazing composition for wood sash

superior to ordinary putty

Kuhls "Elastic" Glazing Compositions are ideal materials for bedding and facing glass in wood or metal frames, with an elastic action entirely different from ordinary putty.

The function of a glazing composition is not only to bed or face the glass but to waterproof the joint between the glass and frame which holds it. To do this the composition must adhere to the glass and to the frame under all conditions of use and exposure. It must also have permanent elastic qualities to overcome the natural expansion and contraction of the adjoining material, and to withstand the pressure of wind and vacuum as well as shock and vibration. Kuhls "Elastic" Glazing Compositions meet all these requirements. Ordinary putty, exposed to the above conditions, dries out, cracks and crumbles, breaking the seal between the glass and the frame; causing corrosion of metal frames and deterioration of wood frames. This condition is prevented by Kuhls "Elastic" Glazing Compositions which remain elastic and maintain a tight seal between glass and frame in some cases for over 40 years.

Although a tough surface skin does form (which partly serves as a protection against defacing) Kuhls "Elastic" Glazing Compositions have never been known to lose their elasticity or become hard and brittle.

This elastic quality also helps to prevent the breakage of glass (especially where wire glass is used).

greenhouse glazing

In greenhouse glazing, where the composition is subjected to the most extreme climatic conditions, Kuhls "Elastic" Glazing Composition has proven its superiority. For 50 years it has been used in all types of greenhouses in United States and Canada and for replacing inferior grades in old construction.

Because of its elasticity Kuhls "Elastic" Glazing Composition simplifies the removal and resetting of panes following natural breakage due to accidents, storms, etc. It is easily removed without damaging the sash. Kuhls "Elastic" Glazing Composition has double the bulk of white lead putty and retains its efficiency practically indefinitely.

how supplied

Color—Kuhls "Elastic" Glazing Compositions are supplied in a light gray color and white, but in large quantities can be made in any shade.

For *Metal* or *Wood Sash*—Furnished in two consistencies:

Knife Grade—Shipped in 1-, 2-, and 5-lb. cans, 12½- and 25-lb. steel pails and 50- and 100-lb. steel drums.

• • •

still elastic after 42 years

The true test of a product is its condition after being in use over a period of years. The huge steel framed sections of the wire glass skylights over the concourse of the Pennsylvania R. R. station in New York City were puttied with Kuhls "Elastic" Glazing Composition in 1907. In 1922, 1926 and 1933 inspections were made by Investigating Committees of Architects and Engineers. They reported that the composition was still in good condition. Another inspection in 1946 shows no appreciable change in the composition. This test is an especially severe one as the glass is wire glass and the huge areas of steel, exposed to vibration of trains and to heat and cold, cause unusual conditions of expansion and contraction.

Gun Putty Composition – Used mostly for greenhouses. Shipped in drums of 1, 2, 5 and 7 gals., also in ½ bbl. (35 gals.) and 1 bbl. (50 gals.).

specifications for Kuhls "Elastic" glazing composition

For Bedding and Facing Glass in Sash, Doors, Skylights, Conservatories, Marquees or any other glass construction.

general specification (under glazing)

All glass unless otherwise specified, required for sash and doors of metal or wood, shall be bedded and set or puttied with Kuhls "Elastic" Glazing Composition as manufactured by H. B. FRED KUHLS, Third Avenue and 65th Street, Brooklyn, N. Y. It shall be secured either by clamps or metal or wood mouldings, sprigs, supplied by other contractors, or puttied as required. The "Elastic" Glazing Composition shall be delivered at the job or factory, where glazing is to be done, and the original containers shall not be opened until after inspection and approval of the architect.

Preliminary—Kuhls "Elastic" Glazing Composition shall be used in the same manner as ordinary putty in bedding and puttying glass.

For Wood Sash and Doors—On new work the wood shall first be primed, or on old work, the rabbets shall be scraped and painted before bedding and setting the glass in Kuhls "Elastic" Glazing Composition for Wood Sash.

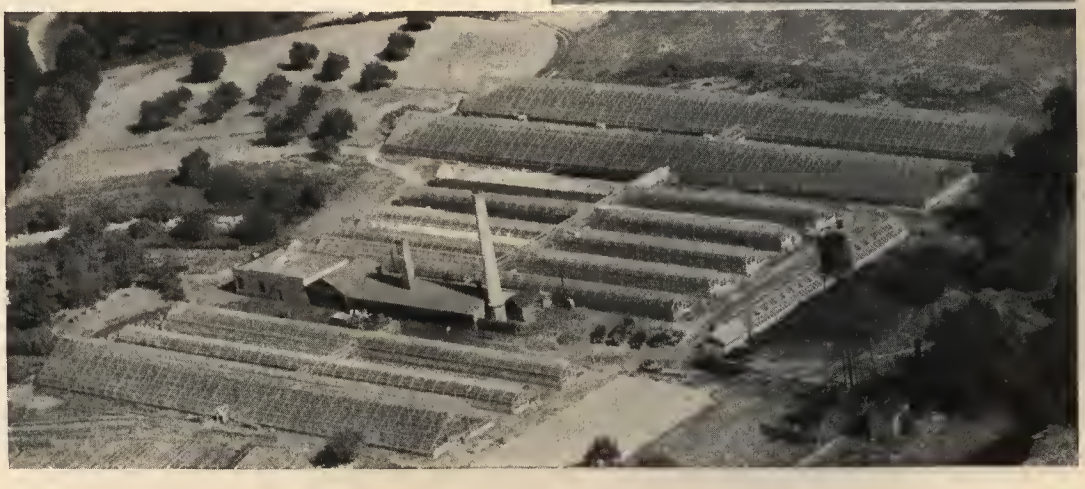
For Metal Glass Settings—The glass shall be bedded in Kuhls "Elastic" Glazing Composition for Steel Sash and secured in place with metal clamps, sprigs or mouldings, the composition smoothed off, as specified.

Mooring Mast of Empire State Building, New York, N. Y.

All glass sealed with Kuhls Elastic Glazing Compositian.

Riverside Church, New York City.

All leaded glass windows bedded in Kuhls Elastic Glazing Composition.



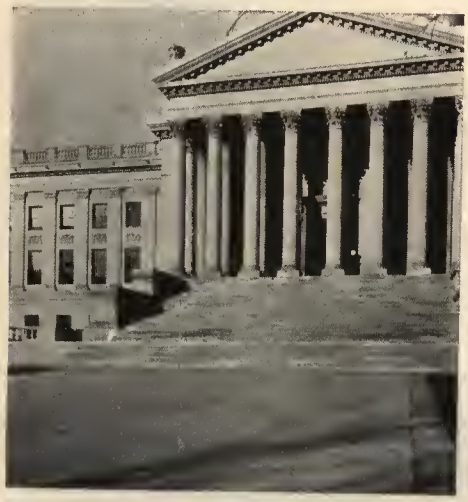
Traendley & Schenck Rowayton Greenhouses, Rowayton, Conn.

Thousands of Greenhouses throughout the country use Kuhls Elastic Glazing and Gun Putty Composition.

expansion joint compositions

Stadium Addition, University of Alabama, Tuscaloosa.

Kuhls Elastic Exponsion Joint Composition used for filling exponsion joints in concrete construction.



New State Capitol Walks around Capitol Building, Charleston, W. Va.

Kuhls Elostic Exponsion Joint Composition used in exponsion joints on oll wolkways.

Rockefeller Center, New York, N. Y.

Exponsion joints in promenode ond roofs filled with Kuhls Elostic Exponsion Joint Composition.

for expansion joints in

promenade tile roofing
stadiums
swimming pools
dams
faces of clocks
domes
sidewalks
sidewalk lights
masonry railings
bridges
concrete walls
monuments
seams or joints in wood floors

some important considerations regarding expansion joints

In selecting materials for expansion joints, too little attention is generally given to the factors which are of real importance if the results are to be successful.

The factors to be considered are as follows:

(1) **The Bonding Quality of the Joint Material**—In order to preserve a waterproof joint at all times, the joint composition must have, and retain, a natural adhesive quality for the materials between which it is placed.

(2) **Overcoming Extremes of Expansion and Contraction**—The width of the expansion joint and the temperature of the panels at the time the joint composition is installed has a considerable influence on the expansion joint filler. If it is installed when the panels are at extreme expansion, then it must be able to take up the enlarged width of joint under extremes of shrinkage. The joint composition should therefore have an elastic quality to take up the difference in the width of the joint.

(3) **The Size of the Panel Units**—The most desirable size of unit between which expansion joints should be placed, depends somewhat on the material of the panel unit and the condition under which it is to be installed. These conditions vary so much that it is difficult to make any set rules to follow. We will be very glad to make specific recommendations regarding the size of the panel unit or the width of joint to be used if full information regarding the conditions is sent to the main office or to the nearest branch office.

Kuhls "Elastic" expansion joint composition fulfills the above conditions

The essential quality of Kuhls "Elastic" Expansion Joint Composition is that it remains elastic. It adheres to the joint walls and it will expand or contract with the movement of the panel, so that the panel is influenced by heat and cold without breaking the joint.

proof of its elasticity

For years the terraces of the Capitol at Washington leaked and the water came through into the rooms under the terraces. In 1921 the joints in the terraces were filled with Kuhls "Elastic" Expansion Joint Composition. Since that time no trouble has been experienced from leaky joints. It has been used for this purpose for over 40 years and prominent installations for roof decks, walls, etc., in office buildings, hospitals, bridges, railroad stations, swimming pools, etc., throughout the country will gladly be given.

vibration or extremes of temperature do not affect it

Kuhls "Elastic" Expansion Joint Composition has been used for years by the railroads in joints of concrete roofs of station shelters where they are subjected to considerable vibration, expansion and contraction and to the acid conditions common to these exposed situations.

Extremes of temperature do not affect the composition. It will not soften under the heat of the sun and will not crack. It will make a joint which is watertight for years.

how supplied

Colors—Can be supplied in any color as ordered, the standard color, unless otherwise ordered is a light grey.

Knife Consistency Only—Shipped in 1-, 2-, and 5-lb. cans; 12½- and 25-lb. pails; 50- and 100-lb. drums. (100 lbs. will fill approximately I cu. ft. of joint.)

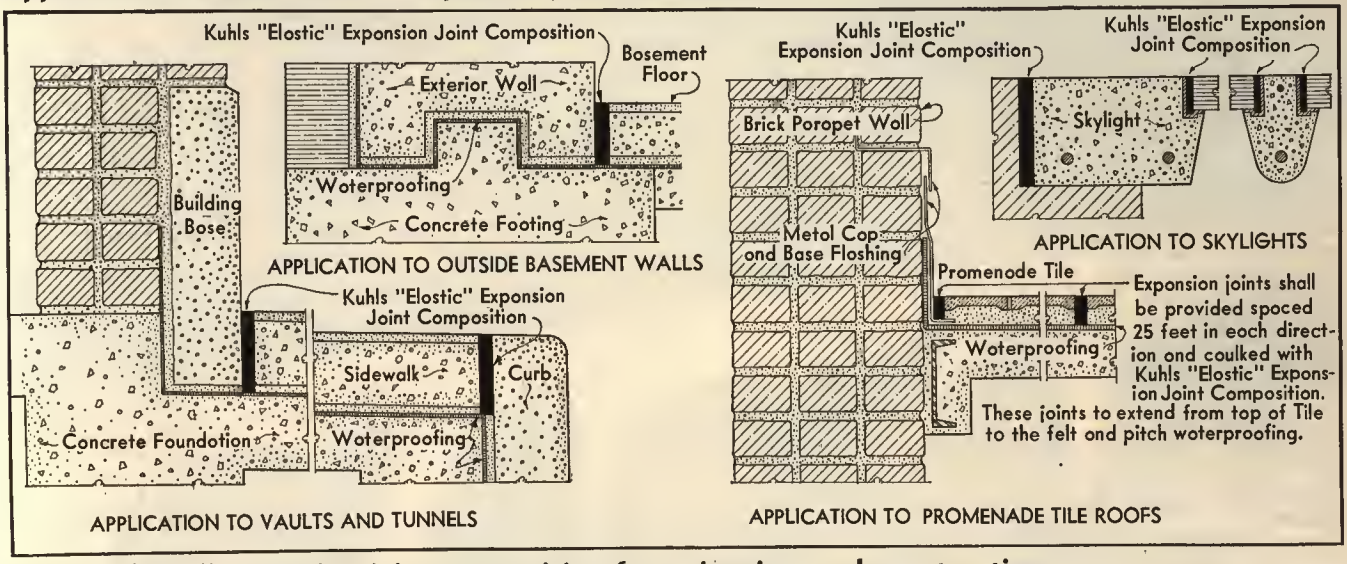
specifications for waterproofing expansion joints

All expansion joints as hereinafter noted (list joints to be treated) or indicated on the drawings, shall be waterproofed with Kuhls "Elastic" Expansion Joint Composition as made by H. B. Fred Kuhls, Third Avenue and 65th Street, Brooklyn, N. Y. The color of the composition shall be as selected by the architect.

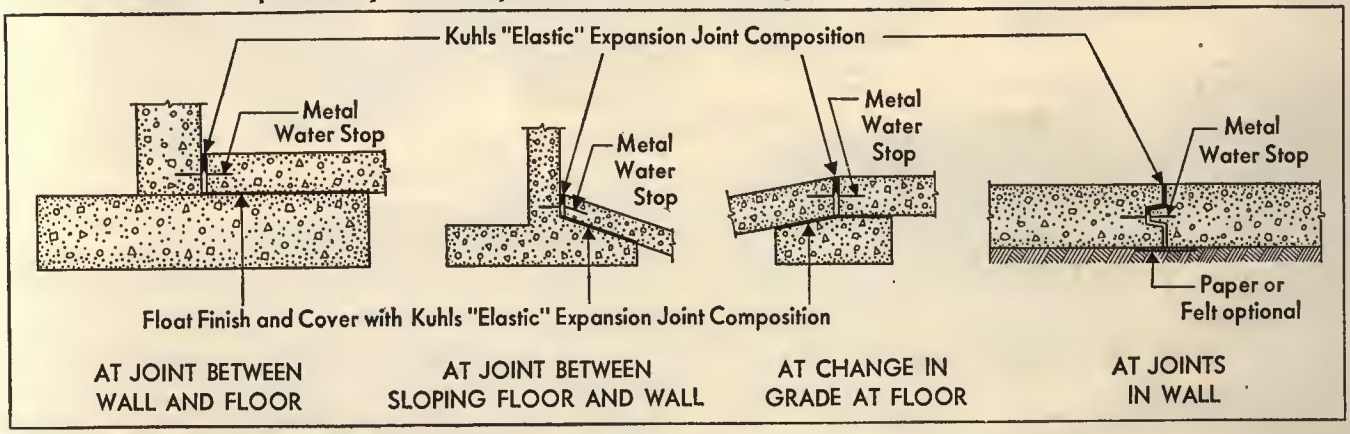
Cleaning and Painting—All expansion joints shall be cleaned down to the waterproofing course. The joints shall then be given one or two coats of Kuhls "Elastic" Joint Paint; or until the surface of the joint shows a gloss.

Joints shall then be pointed up with Kuhls "Elastic" Expansion Joint Composition, thoroughly working the material into the joint to fill the entire space; finish to be left crowned above the adjoining surfaces.

application of Kuhls "Elastic" expansion joint composition



Kuhls "Elastic" expansion joint composition for swimming pool construction



other Kuhls products

Specifications and further information on request.

ELASTIC TRANSPARENT WATERPROOFING
A colorless, non-staining liquid for waterproofing brick walls, stucco, stone and concrete.

ELASTIC SUCTION MASTIC
A non-staining mastic used for cementing of structural glass and other facing materials. Waterproof, elastic and tenacious.

ELASTIC WATERPROOF COATING
An elastic Fibrous composition for application with a heavy brush or trowel. Used for foundation dampproofing and waterproofing.

ELASTIC TILE BEDDING COMPOSITION
An elastic waterproof composition in semi-paste form. On slate or tile roofs it is used as an elastic waterproof bedding beneath the slate and tile.

ELASTIC CANVAS CEMENT
For cementing and waterproofing canvas on outside deck roofs, etc. Due to its extreme adhesive and waterproofing qualities it is an ideal preservative as well as a cement.

ELASTIC CANVAS PRESERVATIVE
For waterproofing, mildewproofing and preserving awnings, canvas covers, etc. Manufactured in five colors.

ELASTIC SEAM COMPOSITION No. 1
Used for filling of seams, checks, etc., in wood flooring.

ELASTIC LINOLEUM CEMENT
A waterproof elastic compound for cementing linoleum, rubber tile, etc., to iron, wood, steel or concrete.

INSULAST
A waterproof elastic insulation compound, used for cementing fiber glass or cork to iron, wood or steel.

KUHLS HAND PRESSURE GUN
For use with or without cartridges.

KUHLS POWER CAULKING GUN
Operates by compressed air. Designed to conserve man-hours by speeding the application of gun type compound.

A FEW BUILDINGS ON WHICH KUHLS ELASTIC WATERPROOFING COMPOSITIONS HAVE BEEN USED

ALABAMA
- Senior High School . . . Selma
- Psychiatric Bldg. . . . Tuscaloosa
- New Kress Store . . . Tuscaloosa
- Stadium Addition, Univ. of Ala. . . . Tuscaloosa

CALIFORNIA
- Builders Exchange Bldg. . . . Los Angeles
- Union Bank Bldg. . . . Los Angeles
- R.K.O. Theatre Bldg. . . . Los Angeles
- Citizens National Bank Bldg. . . . Los Angeles
- Haas Baruch Warehouse . . . Los Angeles
- Metropolitan Warehouse . . . Los Angeles
- Prudential Life Ins. Bldg. . . . Los Angeles
- Seeley Mudd Geology Bldg. . . . Pasadena
- Kerchoff Biology Bldg. (Calif. Inst. of Tech.) . . . Pasadena
- Crellin Chemistry Bldg. (Calif. Inst. of Tech.) . . . Pasadena
- Chas. Arms Geology Bldg. (Calif. Inst. of Tech.) Pasadena

DISTRICT OF COLUMBIA
- Arlington Memorial Bridge . . . Washington
- Commerce Bldg. . . . Washington
- New Printing Bldg. . . . Washington
- Dept. of Justice Bldg. . . . Washington
- Nat'l Gallery of Art, 1315 W St., N.W. . . . Washington
- Addition to Randall Jr. H. S. . . . Washington

FLORIDA
- Brentwood Park Housing Project . . . Jacksonville
- A. I. DuPont Bldg. . . . Miami

GEORGIA
- Barracks No. 7 . . . Ft. Benning
- Dormitories . . . Milledgeville
- Sunset Housing Project . . . Augusta
- Olmstead Homes Housing Project . . . Augusta

ILLINOIS
- National Biscuit Co. . . . Marseilles
- Great Lakes Naval Training Station . . . Great Lakes

KENTUCKY
- Fort Knox . . . Ft. Knox

LOUISIANA
- Magnolia St. Housing Project . . . New Orleans
- Minden School . . . Minden
- Southern Kraft Corp. . . . Spring Hill

MASSACHUSETTS
- Lawrence Swimming Pool . . . Lawrence

MICHIGAN
- State Police School Bldg. . . . East Lansing
- Ottawa St. Power House . . . Lansing

NEW JERSEY
- Singer Mfg. Co. . . . Elizabethport
- Muhlenberg Hospital . . . Plainfield
- Squibbs Bldg. . . . New Brunswick
- Public Service Elec. & Gas Co. . . . Hackensack

NEW YORK
- Federal Court Bldg., Foley Sq. . . . New York City
- New Post Office Bldg. . . . New York City
- Harlem Housing Project . . . New York City
- Cloisters Museum, Ft. Tryon Park . . . New York City
- New York Central R.R. . . . New York City
- New York University . . . New York City
- Consolidated Edison Co. . . . New York City
- Geo. Washington Bridge . . . New York City
- Mid-Town Tunnel Approach . . . New York City
- Federal Reserve Bank, 33 Liberty St. . . . New York City
- U. S. Naval Clothing Supply Depot . . . New York City
- Reiss Housing Project . . . New York City
- Williamsburg Housing Project . . . Brooklyn
- Red Hook Housing Project . . . Brooklyn
- Sea Wall-Narrows-Bay Ridge . . . Brooklyn
- Brooklyn State Hospital . . . Brooklyn
- Brooklyn Edison Co., 55 Johnson St. . . . Brooklyn
- Marcy Housing Project . . . Brooklyn
- Gowanus Housing Project . . . Brooklyn
- Swimming Pools, Mitchell Field . . . Long Island
- School No. 3, Baldwin . . . Long Island
- State Agricultural School, Farmingdale . . . Long Island
- Queens Court House, Jamaica . . . Long Island
- Sayville High School, Sayville . . . Long Island
- Meadowbrook Stadium, Meadowbrook . . . Long Island
- Queens General Hospital, Jamaica . . . Long Island
- Pilgrim State Hospital, Brentwood . . . Long Island
- N. Y. State Hospital for Tuberculosis . . . Raybrook
- Corning Glass Works . . . Corning
- Good Samaritan Hospital . . . Suffern
- Marcy State Hospital . . . Marcy
- Administration Bldg., Readers Digest Ass'n . . . Chappaqua
- Veterans Admin. Facility . . . Summount
- Willard State Hospital . . . Willard

NORTH CAROLINA
- Statesville Mfg. Co. . . . Statesville
- University Apartments . . . Durham
- U.S. Post Office . . . Dunn
- U.S. Post Office . . . Paducah
- Winston-Salem Teachers' College . . . Winston-Salem
- Sanatorium . . . Black Mountain
- Municipal Bldg. . . . Wilson
- State Hospital . . . Goldsboro
- Fort Bragg . . . Ft. Bragg
- Carolina Inn Apts. . . . Chapel Hill
- Textile Bldg. . . . Raleigh
- Adams Bldg., Dix Hill . . . Raleigh
- Chemical Bldg. . . . Raleigh
- Governors Bldg., Dix Hill . . . Raleigh
- Tuberculosis Bldg., Dix Hill . . . Raleigh

NORTH DAKOTA
- Ransom County Court House . . . Lisbon

OKLAHOMA
- Fort Sill . . . Ft. Sill

OREGON
- New Oregon State Library Bldg. . . . Salem

PENNSYLVANIA
- Naval Aircraft Factory, Navy Yard . . . Philadelphia

SOUTH CAROLINA
- New Textile Bldg. . . . Clemson
- Robert Mills Manor Housing Project . . . Charleston

TEXAS
- Anahuac School . . . Anahuac
- Pasadena Jr. High School . . . Pasadena
- Bryan High School . . . Bryan
- U.S. Post Office . . . Amarillo
- Sull Ross College . . . Alpine
- New Tech. Library, Texas Technological College . . . Lubbock
- Interstate Trinity Warehouse Co. . . . Dallas
- Fort Sam Houston . . . Ft. Sam Houston
- New Coca Cola Plant . . . Dallas

TENNESSEE
- Baroness Erlanger Hospital . . . Chattanooga
- College Homes Housing Project . . . Knoxville
- Western Heights Housing Project . . . Knoxville
- Impounding Dam . . . Livingston

VIRGINIA
- Roanoke Hotel . . . Roanoke
- Pembroke High School . . . Pembroke
- Va. State College for Negroes . . . Petersburg
- Naval Operating Base . . . Norfolk
- Ft. Monroe Hospital Addition . . . Ft. Monroe
- Barracks No. 161 . . . Ft. Monroe
- White High School . . . Charlottesville
- First Buckingham Community . . . Arlington

WEST VIRGINIA
- Pavements and Walks, W. Va. State Capital . . . Charleston

WASHINGTON
- Chemistry Bldg., Univ. of Wash. . . . Seattle

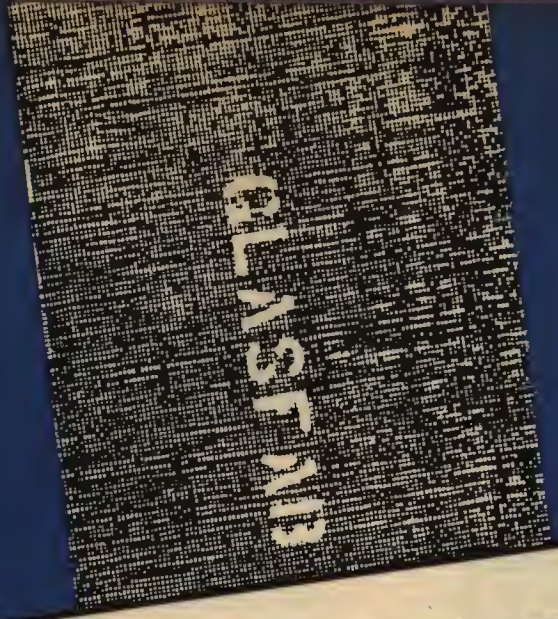
SOUTH AMERICA
NICARAGUA
- National Bank of Nicaragua . . . Managua

H. B. FRED KUHLS

MAIN OFFICE AND FACTORY: Third Avenue and 65th Street, Brooklyn 20, N. Y.

BRANCH OFFICES

812 Davison Building, Baltimore 1, Md.
613 Washington Blvd., Chicago 6, Ill.
51 Fremont St., San Francisco 5, Calif.
1331 So. Los Angeles St., Los Angeles 15, Calif.
909 Western Ave., Seattle 4, Wash.



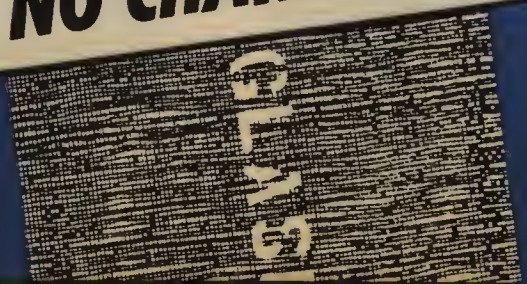
GLASFAB*

MADE OF FIBERGLAS†

THE NEW
INORGANIC
WATERPROOFING
MEMBRANE
FABRIC

OWENS-CORNING
FIBERGLAS
†

NO ROT • NO CHAR • NO WEAR • NO TEAR



The LEXINGTON SUPPLY Co.
4815 LEXINGTON AVE.
CLEVELAND 3, OHIO

GLASFAB*

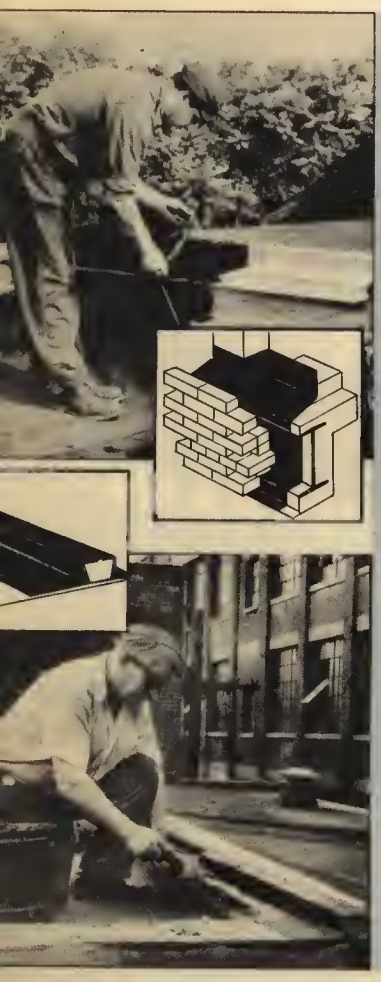
Any waterproofing membrane is only as strong and permanent as its reinforcing fabric. As long as the fabric is intact, the job stands up.

Heretofore the only fabrics available for this purpose were woven of cotton, jute or some other organic fiber.

Thus, the very strength of these fabrics is their weakness. Being organic, they are subject to all the forces constantly attacking such fabrics. Dampness leads to rot and decay. Wear and tear take their toll. Hot applications of tar or asphalt burn and char the fibers. The capillary or "wicking" action of the organic fiber carries moisture into the waterproofing composition and allows the escape of the volatile oils, thus weakening and shortening the usefulness of the entire membrane.

GLASFAB waterproofing membrane ends all this. It is a smooth, evenly woven mesh, made wholly of inorganic GLASS FIBERS. Being an "open" mesh it permits full penetration and impregnation by the waterproofing compound. Yet the fibers, being inorganic, resist all the destructive forces which commonly attack and shorten the life of all ordinary waterproofing membrane.

GLASFAB has been developed after intensive research and experiment and is woven wholly from inorganic glass fibers manufactured by the Owens-Corning Fiberglas Corp. The fabric, originated by the Lexington Supply Company is controlled by the Company's own rigid specifications and has a U.S. Patent Pending. Being inorganic, it is unaffected by hot bitumen, moisture, rot or decay. It possesses the highest strength-to-weight factor of any material used for waterproofing membrane specification work. GLASFAB is light in weight, easy to handle and is fully competitive in price with conventional organic fiber fabrics.



SPECIFICATIONS • APPLICATIONS

SCOPE OF WORK

The contractor shall furnish all labor and materials herein specified or shown on drawings for the proper completion of the following:

(List all areas where Glasfab is to be used)

MATERIALS

All waterproofing fabric shall be GLASFAB waterproofing fabric (specify type and size) as manufactured by the Lexington Supply Company, Cleveland, Ohio.

TYPE	SIZE
Asphalt Impregnated	(2" to 36" widths)
Coal Tar Impregnated	(2" to 36" widths)

All materials shall be delivered on the job in original package of manufacturer, seals unbroken.

GLASFAB Impregnated Membrane shall be applied at all areas to be waterproofed as specified, by first imbedding the fabric in a heavy bitumen mastic, followed by a second coating of mastic.

The fabric shall be applied without wrinkles or buckles and all coating shall be smooth and full.

The contractor shall apply the spandrel, lintel, flashing or wall waterproofing fabric as the masonry work progresses and work in full cooperation with the mason contractor so that there shall be no delay in the erection of the masonry work.

Details of typical waterproofing installations for spandrels less than 15 inches in depth are illustrated in Figs. 1 and 2. Waterproofing is continuous—full width of sheets.

For spandrels deeper than 15 inches, apply waterproofing fabric directly to the beam. Two things are accomplished—(a) the steel is completely protected, (b) sufficient space is allowed for a header brick course or anchors.

Figs. 3 and 4 illustrate the method used for a through-the-wall flashing application.

CAUTIONS

GLASFAB waterproofing fabric should be brought to within 1 inch of outer face of wall (see detail). Do not caulk this joint—allow moisture to escape.

Turn up cloth 6 inches around all columns, wind braces, etc., in exterior walls. (See detail A.)

Protect loose edge of fabric from all mortar droppings and damage, until wall has been built to a sufficient height to receive the fabric.

Prominent Users of *GLASFAB*

United States Government
Thompson Aircraft Products Company
General Motors Corporation
United States Steel Corp.
New York Central Railroad
General Electric Company
California Fruit Growers Exchange
American Structural Products Co.
United Gas Pipe Line Co.
B. F. Goodrich Research Laboratory
City Ice and Fuel Co.
Owens-Corning Fiberglas Corporation
Willard Storage Battery
Fort Stanton Reservoir
Ohio Bell Telephone Co.
Republic Steel Corporation
Studebaker Corporation
Swift and Company
Toledo Edison Co.
Wheeling & Lake Erie Railroad
American Car & Foundry Co.
Cleveland Electric Illuminating Co.

Wide Variety of Uses

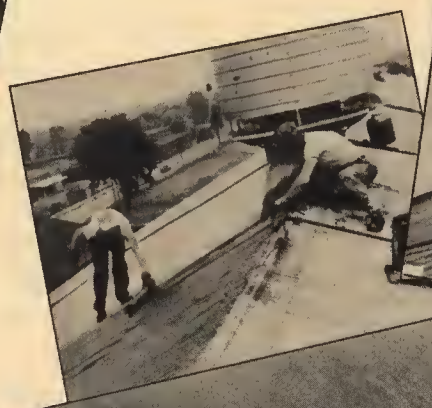
GLASFAB is versatile, lending itself to a wide variety of applications. A few are listed below, reports on other types of application are constantly being received.

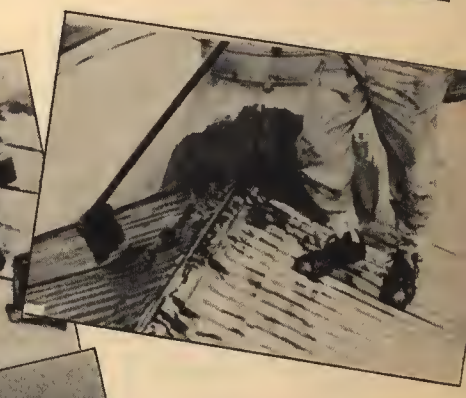
Bridges
Canal Construction
Cellar Waterproofing
Commercial Buildings
Dam Construction
Docks
Highway Construction
Industrial Buildings
Maintenance and Repair
Municipal Projects
Navy Department
Pipe Lagging
Pipe, Valve and Fitting Waterproofing
Public and Private Utilities
Railroad Bridges and Buildings
Reservoirs
Retaining Walls
Roof and Wall Flashing
Sewer Projects
Sidewalk Waterproofing
Steamlines (under and above ground)
Steamship Companies
Subways and Tunnels
War Department
Waterworks
United States Government Agencies

Studebaker Corporation, Empire Steel Division, Mansfield, Ohio. GLASFAB rolled into corrugations of old metal roof. Applied also as flashing on ventilators.

Fort Stanton Reservoir, Washington, D.C. GLASFAB used as reinforcing on concrete roof of reservoir. Note novel method of waterproofing expansion joints to prevent infiltration of surface water.

Willard Storage Battery Co., Cleveland plant. GLASFAB ends waterproofing failures on monitors.





American Structural Products Co., Muncie, Ind., subsidiary of Owens-Illinois Glass Co. GLASFAB applied as reinforcing by cold spray method to corrugated steel roof.

Toledo Edison Co., Toledo, Ohio, adds extra protection to valves and fittings on underground steam line.

ADVANTAGES OF GLASFAB

GLASFAB is a smooth, evenly woven mesh made wholly of INORGANIC GLASS FIBERS. Being an "open" mesh it permits full penetration and impregnation by the waterproofing compound. Adheres tightly to the surface and will not slide in a vertical position if fully imbedded in the bitumen.

WATERPROOF: GLASFAB fibers are not affected by water, even when in continuous contact.

NO ROT: Being wholly inorganic, GLASFAB is impervious to dampness and fungus. It cannot rot or decay, thus holds its strength throughout the life of the application.

NO CHAR: Unaffected by heat, GLASFAB will withstand hot applications of tar or asphalt up to 1000° F. Unlike ordinary fabrics, the fibers do not char but retain full strength for the life of the application.

NO WEAR AND TEAR: GLASFAB fibers are tough and durable. The fibers resist the strain and tension caused by even the slightest expansion and contraction of the masonry wall to which the fabric is applied. Their original strength is their ultimate strength.

NO WICKING: Being inorganic, there is no capillary or "wicking" action. Unlike ordinary organic fibers, no volatile oils are carried to the surface of the waterproofing compound. Thus the compound does not "dry out" and lose its elasticity. On the other hand, no moisture is carried down into the compound to rot the fibers and shorten the life of the fabric.

WEIGHT: GLASFAB weighs but 1/5 to 1/4 as much as ordinary organic fabrics. A 50 sq. yd. roll of GLASFAB weighs only 8 lbs. while a 50 sq. yd. roll of organic fabric averages better than 38 lbs. or 4 to 5 times as much. GLASFAB fabric weighs but 2.2 ozs. per sq. yd. Thus GLASFAB is 4 to 5 times easier to haul, carry, handle and apply. The pick-up factor, when fully loaded is 424%.

Organic Fabric
40,000 lb. Car
1,100 Rolls
55,000 Sq. Yds.

GLASFAB
40,000 lb. Car
5,000 Rolls
250,000 Sq. Yds.

GLASFAB equals or excels all standard waterproofing fabric specifications.

STRENGTH - TO - WEIGHT FACTOR: GLASFAB has the highest strength to weight factor of any material used for waterproofing specification work. The warp has a strength factor of 64 lbs. per inch wide strip and the fill 92 lbs. per inch wide strip. Thread count is 24 threads per inch for both warp and fill.

SPECIFICATIONS: GLASFAB requires no special tools or equipment; applied by the same methods and under the same specifications as any waterproofing membrane fabric.

GLASFAB can be used with any accepted waterproofing compound.

COSTS NO MORE: GLASFAB is fully competitive in price with any specification waterproofing membrane fabric and costs less to apply because it is lighter and easier to handle.

he Lexington Supply Co. • 4815 Lexington Ave., Cleveland 3, Ohio

the MASTER BUILDERS

CLEVELAND 3, OHIO

TORONTO, ONTARIO

INDEX

Type of Product	Trade Name	Description and Use	Page No.
CONCRETE ADMIXTURE	*POZZOLITH	Cement dispersing, water reducing, air entraining agent produces concrete with increased durability, minimum shrinkage, maximum strength and maximum economy.	4-5
MORTAR ADMIXTURES	*"O.M."—OMICRON MORTARPROOFING	Cement dispersing agent, with stearate, reduces water-cement ratio, cuts mortar shrinkage—the principal cause of leaky brickwork — increases bond strength, improves workability, reduces absorption.	6-7
	*BRIKRON	Cement dispersing agent without stearate. Checks shrinkage cracks, increases bond strength, improves workability.	6-7
CONCRETE FLOOR HARDENERS	*MASTERPLATE	Metallic hardener for heavy duty, sparkproof concrete floors—used up to 120 lbs. per 100 sq. ft.	8-9
	METALICRON—METALLIC HARDNER	Metallic hardeners for concrete floors—used up to 60 lbs. per 100 sq. ft.	9
	*MASTERMIX	Integral hardener for commercial and light duty concrete floors.	13
	SANISEAL	Chemical for hardening and dust-proofing concrete floors *after installation.*	15
COLORED CONCRETE FLOOR HARDENERS	*COLORED MASTERPLATE	Masterplate combined with stable oxides for wear-resistant colored concrete floors.	10-11
	DYCROME	Chemical compound for coloring and hardening concrete floors *after installation.*	11
MEMBRANE CURING COMPOUND	MASTERKURE	Synthetic resin solution for effective and economical curing of concrete. Spray or brush.	12-13
FLOOR FINISH	COLORWAX	Water and stain-resistant wax for colored concrete, tile and terrazzo floors.	13
TO PROTECT CONCRETE FROM CORROSIVES	CONCRETE PRESERVATIVE	Corrosion resistant protective coating for concrete and mortar.	15
INTEGRAL "WATER-PROOFINGS"	*POZZOLITH	Cement dispersing, water-cement reducing agent, reduces permeability and shrinkage, producing more watertight concrete at lower cost.	4-5
	STEAROX "100"	Integral type water-repellent treatment for mass concrete and mortars.	15
GROUTING, REPAIRS AND SURFACE "WATER-PROOFINGS"	*EMBECO	Non-shrink metallic aggregate for: grouting heavy equipment, concrete repair, bonding concrete and mortar, and surface waterproofing.	14
	METALLIC WATERPROOFING	Brush coat, metallic type for foundations and concrete and masonry surfaces to prevent leakage.	15
	*MASTERTEX	Cement base paint for decorating and protecting concrete and masonry surfaces, whether wet or dry.	12
	MASTERSEAL	Colorless surface pore and crack-filling penetrant for brick, tile, stucco and concrete; checks absorption, retards disintegration, resists corrosion.	13

*Products employing Cement Dispersion, which reduces water-cement ratio 15% and increases efficiency of cement.

Research in the Laboratory

FOR 30 years Master Builders have been working continuously to improve concrete and mortar. In field studies and laboratory investigations they have made valuable discoveries in and contributions to concrete workability, strength, watertightness, durability and economy.

This research has produced Cement Dispersion, which improves all concrete and mortar properties, Masterplate, which makes long-life, conductive, spark-resisting floors, and Embeco, which provides non-shrink concrete for grouting and reintegration.

Another important laboratory function is accurate control of manufacturing. This control insures uniform job results with Master Builders' products.

FIELD SERVICE

Job problems submitted to Master Builders' field engineers, who are located in all principal cities, constitute an important phase of the laboratory's continuing program of field service and research.

Much of the data resulting from this research work has been published in the following research papers. Copies of these papers, listed below, are available without cost on request.

RESEARCH PAPERS

No. 35—"Application of the Principle of Dispersion to Portland Cement."

No. 36—"Economics of Cement Dispersion."

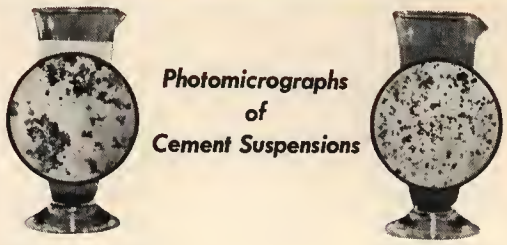
No. 37—"Relation of Dispersion to Special Cements."

No. 38—"Cement Dispersion and Admixtures."

No. 39—"Cement Dispersion and Air Entrainment."

No. 40—"Cement Dispersion and Concrete Floors."

No. E-2—"The Action of Embeco in Concrete and Mortars."



Photomicrographs of Cement Suspensions

FLOCCULATED **DISPERSED**

CEMENT DISPERSION

(Left)—Showing how cement particles clump together or flocculate when placed in water.

(Right)—The cement dispersing agent calcium lignosulfonate causes the particles to separate by imparting to them like electrostatic charges. Dispersion of the cement particles produces these important effects: the water which had been trapped within the particle clumps is released to become a part of the mixing or placing water; the surface area in contact with the water is greatly increased since the particles are no longer in contact with each other. A certain amount of additional air is entrained. By these means the cement is more effectively used to produce concrete and mortar of improved properties.

CEMENT DISPERSION

Produces these Fundamental Improvements

1. **Great Durability**—Increased watertightness and higher strength cement paste, resulting from cement dispersion, minimize the effects of freezing and thawing. Reduced permeability lessens the effects of corrosive solutions.
2. **Higher Strength**—Through reduction of the water-cement ratio, and more rapid hydration, cement dispersion produces higher early and ultimate strength.
3. **Water-tightness**—Greatly improved through reduction in permeability and freedom from cracks and gross defects.
4. **Volume Change**—Reduction in volume of water required with a dispersing agent lessens volume of the cement paste, reducing volume change or shrinkage.
5. **Uniformity**—Improved texture and freedom from gross defects results in greater uniformity and improved appearance.

ECONOMIC SIGNIFICANCE

Cement Dispersion by permitting reduction of the water-cement ratio and exposing the full surface area of cement particles, increases compressive strength 25% or more.

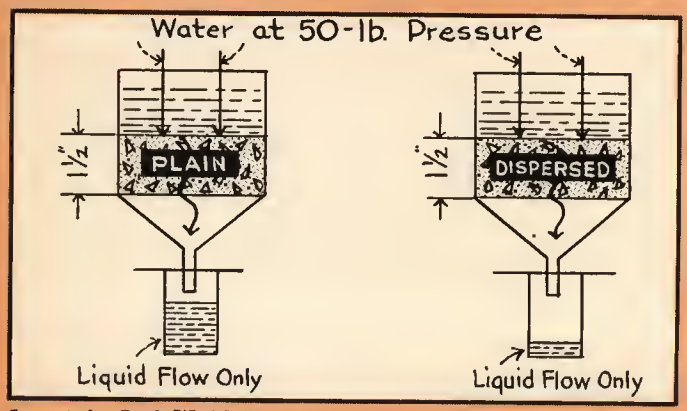
Inasmuch as the requirements of design and of specifications are based on strength, concrete and mortar mixes employing cement dispersion take full practical advantage of the potential value of cement and hence are far more economical in initial and long-term cost.

WORKABILITY

Pozzolith Produces Greater Workability With Less Water

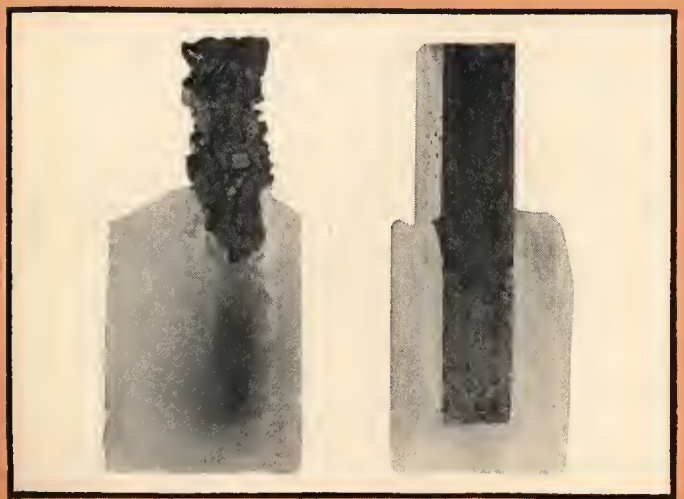
Plain Mix		Pozzolith Mix
6¾ gallons	W/C	5⅝ gallons
1¾ inches	SLUMP	2½ inches

WATERTIGHTNESS



In tests by Prof. W. M. Dunagan, Iowa State College, Pozzolith produced 45% greater watertightness. (Proc. ASTM Vol. 39, 1939, pages 866-880.)

DURABILITY



Plain Mix **Pozzolith Mix**

In other freezing and thawing tests by National Bureau of Standards, Pozzolith increased durability over 400%.

POZZOLITH FOR BETTER

Pozzolith improves the four essential qualities of concrete. It is the only concrete treatment that produces the important combination of: Increased Durability, Minimum Shrinkage, Maximum Strength and Maximum Economy because only Pozzolith's cement dispersion—

"puts all of the cement to work,"
gives optimum air content,
cuts water-cement ratio 15% and
complies with the water-cement ratio law.

Advantages of Pozzolith

FIRST, POZZOLITH PRODUCES BETTER, MORE DURABLE CONCRETE because it—

1. Reduces water-cement ratio up to 15%*.
2. Increases strength up to 25%*.
3. Reduces segregation; reduces bleeding up to 60%*.
4. Increases watertightness 20% or more.†
5. Increases resistance to freezing and thawing up to 500%*, with higher corrosion resistance.
6. Avoids excess cement content and excess heat and reduces shrinkage and cracks to minimum.

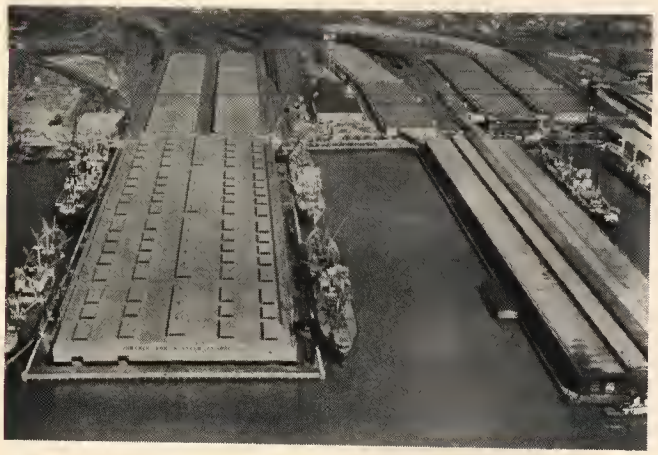
SECOND,

Normal concrete of *any given quality* is produced at lower cost with Pozzolith than by any other means, such as the addition of extra cement or of any other admixture either added at the mixer or interground. Pozzolith reduces costs through—

1. Lower materials-cost, because dispersed cement produces substantially higher strengths.
2. Lower labor costs, because of increased workability, easier placeability and less finishing time.
3. Lower maintenance costs, because of increased resistance to freezing and thawing and corrosion.

*War Department Report from the National Bureau of Standards.

†Tests by Prof. W. M. Dunagan, Iowa State College. (Proc. ASTM Vol. 39, 1939, pages 866-880.)



70,000 cu. yds. of Pozzolith Concrete used in construction of piles, piers and abutments of new Norfolk and Western Ry. Pier N (left). Largest single deck pier on Atlantic Seaboard. Contr.—McLean Contracting Co., Baltimore, Maryland.

MORE ECONOMICAL CONCRETE

High Early Pozzolith provides all the advantages of Standard Pozzolith, plus high early strengths; i.e., normal 3 day strength in 1 day, normal 7 day strength in 3 days, normal 28 day strength in 7 days.

When used for winter construction, High Early Pozzolith used with regular portland cement, reduces the period of heat protection 50% or more.

Conforms with ACI and ASTM Procedures

Authoritative methods for concrete design, specification and production are ACI (613-44) and ASTM (C94-47T)—both based on the water-cement ratio law. Pozzolith also conforms with the water-cement ratio law and when used with these methods produces the best, most economical results.

SPECIFICATIONS

1

Concrete shall be designed in accordance with the ACI Standard Recommended Practice for the Design of Concrete Mixes (ACI-613-44), with normal portland cement and an approved cement dispersing agent which reduces the water required for a given consistency and complies fully with the water-cement ratio law. The strengths, slumps, water-cement ratio, and top size aggregate of the different classes of concrete shall be (insert here, or) as called for on plans or elsewhere in the specifications. The concrete shall be so designed that the materials will not segregate and excessive bleeding will not occur.

2

To Provide Optimum Air Content in Concrete Subject to Freezing and Thawing:

Concrete shall be designed in accordance with the ACI Standard Recommended Practice for the Design of Concrete Mixes (ACI-613-44), with normal portland cement and an approved cement dispersing agent which reduces the water required for a given consistency and complies fully with the water-cement ratio law. The strengths, slumps, water-cement ratio, and top size aggregate of the different classes of concrete shall be as called for on plans or elsewhere in the specifications. All exposed concrete shall contain not less than 3% nor more than 5% total air, by volume, as determined by direct measurement or in accordance with ASTM Method C-138-44. The increased air content shall be obtained by adding at the mixer an air entraining agent which complies with the water-cement ratio law.

Here's Why POZZOLITH Produces Greater Workability, Watertightness, Durability and Economy

PLAIN CONCRETE — POZZOLITH CONCRETE

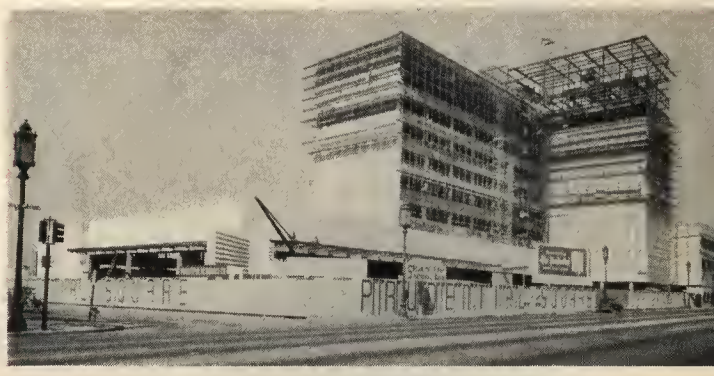
Only about two gallons of water are required to hydrate each sack of cement in a concrete mix.

Balance of water is used to make mix easy to work and place. In plain concrete of average design this mixing and placing water occupies about 10% of the entire mass.

Above left illustration shows the space represented by this water concentrated in one area, instead of being distributed throughout the mass in the form of voids, pores and shrinkage cracks.

Above right illustration shows the amount of this water in Pozzolith Concrete—one-third less than in plain concrete.

RESULTS — equal or greater workability, greater watertightness, durability, economy . . . because Pozzolith, Cement Dispersion, assures control of water in a concrete mix and complies with water-cement ratio law.



Prudential Insurance Co., Los Angeles, Calif. One of several outstanding structures built with lightweight aggregate Pozzolith concrete. Archts.—Walter Wurdeman and Welton Becket; Engrs.—Murray Erick Associates; Gen. Contr.—William Simpson Co., all of Los Angeles, Calif.

"O.M."—FOR WATE
MASONR

Cement Dispersing Agent for Masonry Mortars

"O.M."—Less Shrinkage, More Durability and Economy

One of the most valuable applications of Cement Dispersion is its use in Masonry Mortars, where it not only attacks the principal causes of leakage, but where it effects immediate savings in initial costs.

As formulated for mortar, it is named Omicron Mortarproofing or "O.M." In standard Master Builders' "O.M.", the dispersing agent is combined with a pozzuolanic plasticizer, and water repellent stearate, which results in minimum absorption. "O.M." is a light grey powder, which is added at the mortar box or mixer.

In addition to its neutral shade, "O.M." is made in six non-fading colors for mortars and stucco.

BRIKRON

BRIKRON differs from "O.M." in that it includes no stearate. Like "O.M.", it checks shrinkage cracks, increases bond strength, improves workability and increases durability.

"O.M." CUTS WATER REQUIRED FOR IDEAL WORKABILITY; REDUCED WATER CUTS SHRINKAGE

Shows Equal Workability with "O.M." Using 15% Less Water

Both Mixes—1 Cement: 1 Lime Putty: 3 Sand

Plain Mix		"O.M." Mix
6.0 gal.	w/c	5.1 gal.
2"	slump	2"

"O.M." THUS REDUCES BY 30-50% INITIAL SHRINKAGE

which Breaks Bond At This Point ➡ And Is The Major Cause of Leaks

OMICRON MORTARPROOFING

"O.M." Controls Mortar Shrinkage—

Shrinkage—the major cause of leaky brickwork—occurs in all mortars during the first forty-eight hours. With prepared masonry mortars and conventional cement and lime mixes, high initial shrinkage is inevitable, because more than twice as much water is required to produce workability as is needed to hydrate the cement.

The shrinkage caused by loss of excess water during the first 48 hours—while the bond between brick and mortar is still weak—frequently results in cracks and leaky brickwork.

Omicron Mortarproofing directly attacks this problem by producing ideal workability with 15-20% less water. Initial shrinkage is thereby reduced 30-50%, or generally below the critical point at which the bond is broken. "O.M." also overcomes the problem of leaky brickwork by (1) on the average increasing bond strength 25% and compressive strength 10% (2) lowering mortar porosity and reducing absorption 30% or more (3) reducing shrinkage by increasing water retentivity and minimizing need for re-tempering.

"O.M." Cuts Costs, Improves Quality—

Builders report that "O.M." cuts material costs by increasing mortar yield. Quantity and quality of work are improved because mortar is more workable, retains plasticity longer, spreads easier and farther and clings and slushes better.

"O.M." Cuts Maintenance Costs—

Entrance of water through shrinkage cracks damages the building itself and often the interior. Shrinkage control with "O.M." saves untimely and costly repairs. "O.M." also reduces maintenance costs by increasing durability.

Schuster's Stores Warehouse, Milwaukee, Wis. Archt.—Brust and Brust, Milwaukee; Gen. Contr.—Selzer-Ornst Co., Milwaukee.

IGHT, DURABLE
MORTAR

"O.M." For Glass Block—To meet the requirements of glass block construction a mortar should *first,* bond well to the blocks, *second,* hold blocks in place and prevent them from sliding. Because of its exceptional plasticity and cohesiveness, "O.M." meets these qualifications. In addition, "O.M." helps prevent leaky glass walls by developing strength rapidly, which, with greatly reduced shrinkage, preserves the mortar bond.

It is highly important that the bond be preserved in glass block construction because there is no "back up" to prevent water seeping through the wall to the interior of the building.

For Stucco—"O.M." is widely used in stucco to control shrinkage and cracking, to produce better workability and watertightness. (Pictorial directions for use on request.)

SPECIFICATIONS

Mortar for all Masonry or Plaster shall be composed of (designate mix) to which shall be added MASTER BUILDERS CO. "O.M." in the proportions of 1 lb. per each sack of portland or masonry cement and 1 lb. for each cubic foot of lime (hydrated or lime putty) in mix in exact accordance with the directions of the manufacturer.

Mortar for Glass Block—shall consist of 1 part portland cement; ½ part hydrated lime or lime putty; 4½ parts of well graded sand and 1 lb. of "O.M." for each cubic foot of cement and lime in the batch.

Master Builders BRIKRON—shall be added to mortar for all masonry in the proportion of ½ lb. to each sack (cu. ft.) of cement and ½ lb. to each cubic foot of lime (hydrated or putty) in the mix.

Philadelphia Electric Co., Southwork Station, Philadelphia, Pa. Designed by owner's engineering dept., with Paul Cret Associates, Consultants. Gen. Archt.—United Engineers & Constructors, Inc., Philadelphia.

Edward S. Harkness Memorial Hospital, New York City. Archt.—Voorhees, Walker, Foley & Smith; Contr.—Vermilya Brown Co., Inc.,—both of New York City.

Warner Bros. Distributing Corp., Minneapolis, Minn. Omicron Mortarproofing used throughout including glass block panels. Archt.—E. C. A. Bullock, New York City; Gen. Contr.—Standard Construction Corp., Minneapolis.

Sumner High School, Kansas City, Kansas. Archt.—Joseph W. Radotinsky; Engr.—Horner and Wyatt; Contr.—S. Patti Construction Co.—all of Kansas City, Kansas.

MASTERPLAT
HEAVY DUT

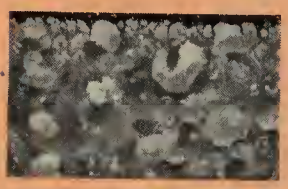
Here's Why MASTERPLATE Makes Floors Wear 5-6 Times Longer

A diamond, the hardest substance known, shatters under impact . . . metal merely flattens out.

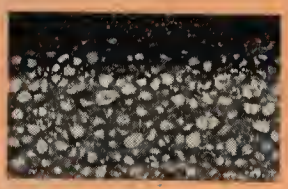
This fact shows that mere hardness is not the answer to longer floor life. It also explains why Masterplate floors, with their thick, ductile surface of cement-welded iron particles, wear up to 5—6 times longer than ordinary concrete floors. (See report on tests of 138 different types of concrete floor surfaces made by National Bureau of Standards. Copy on request.)

Before Master Builders' discovery of cement dispersion, only 30—40 lbs. of iron per 100 sq. ft. could be floated into a concrete floor and *kept at the surface*, retaining maximum strength and wear. Now with Masterplate, a steel blue granular material in which is combined specially processed iron particles and cement dispersion, up to 120 lbs. of metal can be used, producing a thick, ductile surface which resists grinding wear, impact and corrosion.

Compare the thickness . . .



Ordinary Metallic Aggregate Floor—30-40 lbs. per 100 sq. ft.



Masterplate Floor—120 lbs. per 100 sq. ft.

Here is a section of a Masterplate Floor. Note the depth to which the metallic aggregate is incorporated. It is this type of floor which is giving modern industry maximum wear-service.

Advantages of Masterplate

Because it frequently wears 5—6 times longer than ordinary concrete floors, Masterplate has been called "industry's toughest floor." In addition to its great durability, Masterplate possesses the following advantages:

Dustless—Due to the ductility of its metallic aggregate, Masterplate withstands heavy grinding wear without dusting.

Corrosion Resistance—Masterplate stands up well under the attacks of cutting oils, strong alkalies and many corrosive conditions encountered in industry.

Sparkproof—Sparks from floors can be caused either by friction or by static electricity. A Masterplate metallic-concrete floor has the right degree of conductivity of electricity to give full protection; a plain concrete floor has practically none. Where explosive conditions exist around combustible gases or dust, such as in aircraft hangars, garages, paint shops, hospital operating rooms, munition factories or chemical plants, a Masterplate metallic-concrete floor should be specified to provide positive and safe dissemination of the static electricity.

For sparkproof floors apply not less than 90 lbs. of Masterplate per 100 square feet—preferably more. (Full information on sparkproof floors furnished upon request.)

Non-Slip—A durable non-slip surface can be produced on a Masterplate floor by suitable finishing operations. (See specifications.)

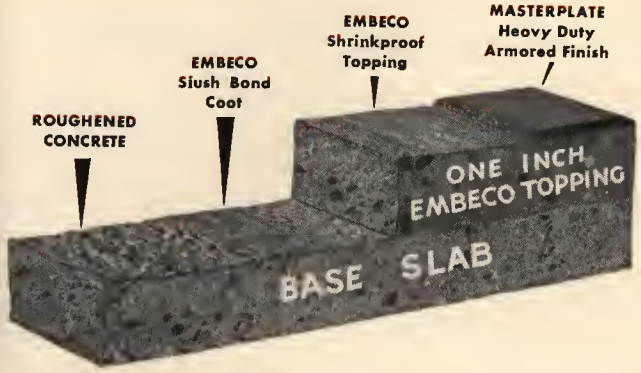
Easy to Clean—Masterplate Floors are easy to clean because of their smooth, non-absorbent surface, free from shrinkage cracks, pits and ruts. They stand up under steam and strong cleansing compounds.

Economical—The low original cost and wear-resisting qualities of a Masterplate floor make it the most economical in industry today.

Master Builders' installation technique insures proper results and eliminates much costly manual labor. Application is made by distribution over and floating into fresh concrete finish, in either monolithic or two course floors. (Detailed directions upon request).

Resurfacing Old Floors—Masterplate is used extensively for resurfacing, being incorporated in the fresh concrete topping placed over the old slab. (Detailed directions on request.)

for CONCRETE FLOORS



Showing use of Non-Shrink Embeco in resurfacing old concrete floors with Masterplate. (For advantages of Embeco in placing new and resurfacing old floors, see page 14.)

Specifications

Concrete floor shall be finished and hardened with a mixture consisting of 2 parts of MASTER BUILDERS CO. Masterplate* and 1 part of cement by weight, using (indicate quantity; see table below) lbs. of Masterplate per 100 sq. ft. and floor shall be cured with MasterKure, both used in accordance with the directions of the manufacturer, THE MASTER BUILDERS CO.

Type of Service	Lbs. Masterplate per 100 sq. ft.	Type of Floating
Light to Moderate Duty	30-60	Hand or mechanical
Moderate to Heavy Duty	60-90	Hand or mechanical
Heavy Duty	90-120	Mechanical only

*If non-slip feature is desired, insert (Non-slip finish).

METALICRON—METALLIC HARDNER . . .
For light duty concrete floors

Like Masterplate, Metalicron contains Master Builders pure graded metallic aggregate combined with a pozzuolana, Omicron, but does not contain the cement dispersing agent.

Metallic Hardner is a properly graded, clean, water absorbent metal aggregate, but does not contain the pozzuolana, Omicron or Master Builders' dispersing agent. Their effective use is limited to 60 lbs. per 100 square feet. (Detailed directions on request.)

MASTERKURE . . . For curing concrete floors

MasterKure is a liquid "Membrane Curing Compound" which is applied to the concrete floor with brush or spray as soon after finishing as surface has set sufficiently to prevent injury. MasterKure provides a seal which holds the moisture in the concrete and insures proper curing. (See page 12 for further information on MasterKure.)

Masterplate floors are sparkproof

Masterplate Metallic - Concrete Sparkproof Floor undergoing a friction test made with rapidly rotating steel brush. No Sparks! No Dust!

Plain Concrete Floor undergoing the same friction test, made with same rapidly rotating steel brush. Sparks and Dust!

International Harvester Co., Baltimore Parts Depot, Baltimore, Maryland, in which is installed 156,000 sq. ft. of Masterplate Floors. Floor Contr.—Ce-Mas-Co. Floor Co., Chicago.

Byron-Jackson Factory, Los Angeles, Calif. Masterplate provides easy-to-clean, long-wearing floor surface. Archt. & Engr.—Ellis Wing Taylor; Contr.—C. L. Peck, both of Los Angeles.

MASTERPLATE COLORED

COLORED MASTERPLATE

FOR PERMANENTLY COLORING AND HARDENING CONCRETE FLOORS

NILE GREEN | PERSIAN RED | FRENCH GREY

TERRA COTTA | TAN | SEAL BROWN

BATTLESHIP GREY | MAROON | TILE RED

Also available in Black

Color shades shown subject to slight variations with different brands of cements and aggregates.

Colored Masterplate is a combination of Cement Dispersion, Master Builders' pure, graded metallic aggregate, a pozzuolana and stable superfine oxides. Applied as a "shake" or "dust coat" when floor is laid, it produces a built-in wearing surface of deep, uniform color, highly resistant to wear. To enhance the color tone of the light colored finishes, a non-ferrous, tough, wear resisting aggregate, properly graded, is employed in Green, French Grey, Tan and Terra Cotta Masterplate.

Colored Masterplate is recommended for use either in two-course finish or where topping is omitted and base finished off as a wearing surface (monolithic).

The variety of pleasing colors available with Masterplate enables the architect to fit this long-life, economical floor into modern color schemes. Colored Masterplate floors not only contribute to an attractive and restful environment but help promote safety when used in plants for aisles and areas that should be specially marked.

Here is a section of a Colored Masterplate Floor. This "built in" colored iron-concrete surface assures many years' satisfactory service.

COLORED MASTERPLATE

Colored Masterplate possesses all the characteristics of standard grey Masterplate plus the addition of attractive colors having maximum permanence.

Advantages of Colored Masterplate floors are:

1. Many times more wear-resistant than plain cement finish. (See photo at lower left.)
2. Omicron, by reducing soluble salts through pozzuolanic action, checks efflorescence, assures deep, clear color; likewise checks attacks of corrosive agents present in industrial areas.
3. Increased cost is much *less* than keeping a plain floor painted.
4. Elimination of inconvenience and cost of interruption when repainting floors.

Non-Slip—A special formula of Colored Masterplate with non-slip aggregate is manufactured for use in finishing colored ramps, corridors, stairs, wet areas where slip-proof surface is desirable.

Where Used—Colored Masterplate is recommended for use on floors in industrial plants, commercial buildings, offices, schools, institutions, etc., where a decorative effect is desired on floors that will be subjected to heavy foot traffic or truck traffic.

Specifications

TILE RED, PERSIAN RED, MAROON, BROWN, BATTLESHIP GREY AND BLACK.

Concrete floor surfaces (indicate areas) shall be constructed and hardened with a mixture consisting of 2 parts of Masterplate* and 1 part of cement by weight, using (see Table below) pounds of the metallic aggregate per 100 square feet in strict accordance with specifications furnished by the manufacturer, The Master Builders Company.

Type of Service	Lbs. Masterplate per 100 sq. ft.	Type of Floating
Light Duty	30-45	Hand or mechanical
Medium Duty	45-60	Hand or mechanical
Heavy Duty	60-120	Mechanical only

For sparkproof floors apply not less than 90 lbs. of Masterplate per 100 sq. ft., preferably more.

*If non-slip feature is desired, insert (Non-slip finish).

CONCRETE FLOORS

Specifications

GREEN, FRENCH GREY, TERRA COTTA AND TAN

All floor surfaces (indicate areas) shall be constructed and hardened with a mixture consisting of 4 parts of Masterplate and 3 parts of cement by weight, using (see Table below) pounds of the Masterplate per 100 square feet in strict accordance with specifications furnished by the manufacturer, The Master Builders Company.

Type of Service	Lbs. Masterplate per 100 sq. ft.	Type of Floating
For Light Usage Only	30	Hand or mechanical
For Average Usage Only	45	Hand or mechanical
For Heavy Usage	60	Hand or mechanical

DYCROME . . . For Coloring and Hardening Concrete Floors Already Installed

Dycrome is the acid-stain method of coloring and hardening concrete floors after installation; it produces varied tones of single colors or two-color, duotone effects.

Colors: Flemish Oak, Weathered Bronze, Cordovan Brown, Palmetto Green, Nile Green, Jade.

SPECIFICATIONS

Existing Floors—Concrete Floor areas (as indicated) shall be colored and hardened with MASTER BUILDERS COMPANY (insert color) Dycrome. Floors to be Installed—Concrete for floors to be Dycromed shall be proportioned (mix desired) to which shall be added 2 lbs. of hydrated lime for each bag of cement in the mix.

Typical Colored Masterplate Floors

International Harvester Co. (Fred J. Green Co.) Live Oak, Florida—Display room and parts department.

Sears, Roebuck & Company, Boston, Mass. Archt.—Nimmons, Carr & Wright, Chicago, Ill. Contr.—Turner Construction Co., Boston, Mass.

Los Angeles Transit Lines Service Bldg., Los Angeles, Calif. Archt.—Owners. Contr.—J. A. McNeil Co., Los Angeles, Calif.

Coca Cola Plant, Ft. Worth, Texas. Archt.—P. M. Geren; Gen. Contr.—J. M. Gurley & Son Constr. Co.; Floor installed by Palmer & Adams—all of Ft. Worth, Texas.

MASTERKURE... MASTERTEX

MasterKure . . . for Membrane Curing of Concrete . . .

Curing is one of the most important stages of concrete making. If the curing is not done thoroughly, all the precautions taken in materials, methods, and costly supervision are wasted. Inadequate curing may result in the loss of as much as 40% of the strength. MasterKure is a solution of a synthetic resin and water-proofing compounds in an organic solvent. This solution spreads readily on wet concrete and deposits a hard, tenacious film which holds the moisture in the concrete.

MasterKure is a liquid, applied with brush or spray as soon after finishing as surface has set sufficiently to prevent injury.

●

Advantages

MasterKure eliminates the use of burlap, paper, sand, sawdust, straw and other less certain and often more costly curing methods. When used on floors, it protects against dirt, and the stains of plaster droppings.

In curing efficiency, the MasterKure "Membrane Curing Method" assures more thorough and complete curing of floors and slab concrete than any other practical means except ponding.

Applications

Among the more common applications that have proved the value of curing concrete by the MasterKure membrane method are: floors, highways, bridges, buildings, dams and walls.

Two Types

MasterKure No. 1 and MasterKure No. 2—both equally effective in curing action: No. 1 is colorless and is easily removed prior to waxing a colored floor. No. 2 may take on a yellowish cast with age; it is not as easily removable.

Mastertex . . . Cement Base Paint . . .

Mastertex is a water-resisting cement-base paint which protects and decorates exterior and interior surfaces of concrete, concrete block, brick, tile, stucco and other masonry. Can be applied directly to any of these surfaces. (Mastertex complies with Federal Specification—TT-P-21, Type II, Class A.)

An outstanding feature of Mastertex is the fact that it now contains Master Builders cement dispersing agent. Cement dispersion increases the durability of the hardened paint, particularly with respect to its resistance to checking.

Mastertex is distinguished from most other cement-base coatings by its stearate content, which gives the Mastertex finish minimum absorption and causes it to stay cleaner longer.

Mastertex is applied to a wet surface, forms a strong mechanical bond, can be brushed or washed repeatedly and has the distinctive feature of allowing the underneath concrete to "breathe." This prevents building up of water behind the film which causes blistering and peeling of oil, glue, casein and other non-breathing coatings.

General Specification

All surfaces as indicated on plans shall be given two coats of Master Builders Mastertex, cement-base paint, following the directions of the manufacturer, The Master Builders Company, Cleveland, Ohio.

Applications

Mastertex is highly recommended as the only satisfactory type of coating for interior of basement walls, concrete block, on swimming pools, garden pools, tanks, tunnels, and other masonry surfaces subjected to constant or intermittent moisture. Also recommended for inside white on porous masonry surfaces in dairies, laundries, and other places subject to steam, fumes and high humidity.

Standard Colors: White, Cream, Ivory, Green, Blue, Light Grey, French Grey, Dark Grey.

Pictorial directions for use on request.

This photo shows what can happen to oil paints which are applied on masonry surfaces. Mastertex contains no oil, glue, or casein—it will not flake, blister or peel. Mastertex bonds firmly to any clean, porous, masonry surface.

MASTERSEAL . . . COLORWAX . . . MASTER MIX

APPLYING MASTERKURE

SPRAYING METHOD BRUSH METHOD

Specifications

After the form is removed or when the surface is set sufficiently hard so that it will not be marred by the application, all concrete, floors, etc., shall be cured by the Master Builders Company Membrane Method with MASTERKURE (indicate No. 1 or No. 2, also whether for spraying or brush method) in strict accordance with the directions furnished by the manufacturer.

COLORWAX

Colorwax, which develops the full color and beauty of a floor, is especially made for use on Colored Masterplate, tile, terrazzo and all colored concrete floors. It combines the highest quality wax with the finest stable colors. Very economical to use because of greater covering capacity.

Colorwax protects the surface from traffic wear and gives an otherwise harsh floor a pleasant, "soft" feeling underfoot. Filling and sealing the pores with a water and stain-resistant film, Colorwax helps keep the surface clean and makes upkeep simple and inexpensive.

Where Used: department stores, theaters, schools, hotels, hospitals, office buildings, banks, etc. In addition to its wide use on hard-surface floors, Colorwax provides a protective and beautifying coating for linoleum, cork, composition, asphalt tile, rubber and other semi-soft type floorings. Unlike certain chemical preparations, Colorwax contains no ingredients that can soften or injure these materials.

Made in ten standard colors: also non-colored. (Complete directions sent upon request.)

MASTERSEAL . . . For Colorless Surface Coating

Masterseal seals pores of brick, tile, stucco and concrete without materially changing the appearance of the surface, producing a surface that is non-absorbent and corrosion-resistant. It retards disintegration, resists the corrosive action of smoke and fumes, checks staining and efflorescence.

Two types of Masterseal are available. Masterseal No. 1 is produced from a solid hydro-carbon base which is alkali and acid proof. It is distinguished from Masterseal No. 2 by its greater penetration, greater water-repellency and greater durability. No. 1 darkens the surface slightly but is longer lived; No. 2 does not appreciably affect the color or tone of the surface. Both can be applied to clean, dry, frost-free surfaces down to 50° F. with full efficiency. (Complete directions sent upon request.)

MASTER MIX . . . For Hardening Floor Slabs by Chemical, Integral Method

At a cost no greater than surface treatments, Master Mix hardens, densifies floor topping throughout, and converts the solubles where disintegration starts. Providing resistance to corrosion, Master Mix is important for floors in process industries.

Master Mix makes "dry" mixes easily placeable with 15% less water, because of cement dispersion, trowels easily to an excellent finish with a minimum of labor, and produces strong, dense concrete with minimum shrinkage.

In Master Mix, the Omicron ingredient adds strength to the wearing finish and increases its resistance to the corrosive attacks of acid and alkali solutions.

Specifications

Concrete floor areas (indicate areas) shall be hardened and finished with Master Builders Co. Master Mix in the proportions of 1⅔ lbs. of Master Mix per sack of cement used in the mix in exact accordance with directions of manufacturer.

Non-Shrink EMBECO

Non-Shrink EMBECO . . .

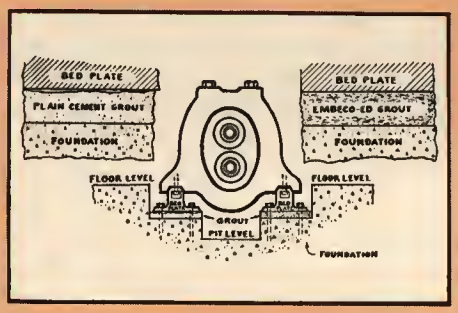
Non-Shrink Embeco is a dry powder compound composed mainly of specially prepared metallic aggregate and Master Builders' cement dispersing agent and reagents to promote oxidation and strength. Added to concrete or mortars it counteracts shrinkage.

For GROUTING . . .

The excess water required to make a normal mix sufficiently *flowable* for most grouting jobs causes: (1) serious shrinkage (2) slow set (3) low strength (4) extreme grout cavitation because of excess bleeding.

With Embeco these disadvantages of ordinary grouts are overcome because: (1) Cement Dispersion in Embeco produces greater placeability even though water content is reduced up to 15% (2) when mixed with sand, cement and water Embeco expands just enough to produce densification of the grout and sufficient pressure to make a complete, level contact. Other advantages of Embeco grout:

1. It is quick-setting, permitting the operation of equipment at the end of 12 hours if necessary.
2. It develops high strengths in 24 hours: greater than ordinary grouts in 7 days . . . ultimately 51% greater.
3. It is oil and water resistant.



Cross-section shows how slight expansion of Embeco Grout results in complete contact with bedplate.

For SETTING HEAVY FLOORTILE . . .

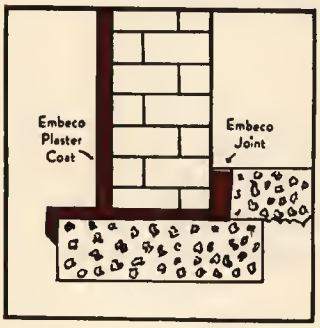
Non-Shrink Embeco Mortar is widely used to grout heavy industrial tile, quarry tile, vitrified brick, deck tile and other types of exposed floor tile units. It completely eliminates shrinkage of mortar joint and densifies mortar, thus preventing seepage of moisture and corrosive liquids into mortar and between mortar and tile. On Architectural Work as verandas, terraces, roof-decks and other suspended slabs—resists leakage into substructure. For Industrial Work, dairies, bakeries, bottling plants, meat packing houses—confines corrosion to surface, insuring long floor life. Procedure and specifications sent on request.

For FLOOR CONSTRUCTION . . .

Thorough bonding of the topping course, when placing a new floor or resurfacing an old one, can be insured by brushing into the surface of the rough slab, a slush bond coat of Embeco. Non-Shrink Embeco also recommended for topping course. See drawing page 9. (Detailed information sent on request.)

The joint between floor slab and walls is one of the greatest sources of leaks. The concrete slab shrinks and pulls away from the walls, leaving an easy entrance for water. This may be avoided at the time of construction by filling these joints (illustration below) with Non-Shrink Embeco Mortar. (Specification below.)

WATERPROOFING—Plaster Coat Method . . .



By adding Non-Shrink Embeco to the cement plaster coat on exterior foundation walls, a tight, leak-proof coating is obtained which is the most permanent and efficient protection against leaky basements. (Specifications below.)

For CONCRETE REINTEGRATION . . .

Non-Shrink Embeco is used in the rebuilding of spalled and eroded concrete surfaces. Since Embeco overcomes the natural shrinkage in patching concrete, the restored areas stand firm, resistant to the elements. Send for detailed specification.

Specifications

(a) EMBECO PLASTER COAT—All exterior surfaces (or interior, as conditions dictate) of foundation walls and footings below grade shall be pargeted with not less than ½ in. of mortar, consisting by volume of: 1 sack portland cement, 3 cu. ft. sand to which not less than 25 lbs. of Non-Shrink Embeco Aggregate shall be added per each sack of cement.

(b) GROUTING EMBECO JOINT AT FLOOR LINE—Junctures between basement concrete floor line and foundation walls shall be grouted with a mixture of: 100 lbs. Embeco, 2 sacks portland cement, 3 cu. ft. sand.

(c) For WATERPROOFING Concrete, Haydite or Cinder Block—The surface shall be prepared and an Embeco mixture shall be brushed on according to directions of manufacturer, THE MASTER BUILDERS CO., CLEVELAND. (For description see page 15 . . . EMBECO No. 5—Metallic Waterproofing.)

OTHER MASTER BUILDERS' PRODUCTS

EMBECO No. 5 . . .
METALLIC WATERPROOFING

. . . Brush Coat Type for Application to Concrete and Masonry Surfaces, Interior and Exterior.

Embeco No. 5 consists of an approved, pure, finely ground metallic aggregate, combined with an oxidation catalyst which is free from ammonia. This is important because the fumes caused by oxidation in some products will seriously retard a job. Successive brush coats (normally four coats) are applied, alternating Embeco No. 5 mixed with sufficient water to produce a brushable consistency, and a mixture of portland cement, Embeco No. 5 and fine aggregate. The iron in the mixture oxidizes and expands, filling the voids left by the water as it evaporates. This provides a metallic-cement sheath which tightly bonds to the surface and checks passage of water even under heavy pressure.

Like Mastertex, Embeco No. 5 metallic waterproofing has two distinct features: it can be applied to a wet surface, and it allows the concrete to "breathe." By permitting passage of vapor from the underneath concrete, Embeco No. 5 prevents collection of liquid behind the metallic-cement sheath which eventually forces off the coating. This is a common problem with non-breathing type materials.

Embeco No. 5 method is one of the most economical because of the low first cost and long life of the application.

Specifications

All masonry surfaces (indicate areas) shall be waterproofed with (indicate number of coats) Master Builders Co. Embeco No. 5 used and applied in exact accordance with directions of manufacturer.

STEAROX "100". . .

Stearate Type Integral Treatment for Mass Concrete and Mortars.

Stearox "100" (Powder), used to render pores water-repellent, contains 100% stearic acid. Because of its concentrated form, "100" assures maximum efficiency and economy.

Specifications

Stearox "100" shall be added in the proportion of .2 lb. per sack of cement, exactly in accordance with the directions of manufacturer, THE MASTER BUILDERS CO.

CONCRETE PRESERVATIVE . . . Protective Coating for Concrete and Mortar

Protects concrete from the attack of reagents which ordinarily cause rapid deterioration, such as solutions of alkalies, acids and salts. It is a moderately viscous amber solution of a non-volatile synthetic base, which, when applied on any dry concrete surface, penetrates and fills the pores with a corrosion resistant having greatly reduced permeability. An excellent alkali-resisting priming coat for oil paints where used on concrete or masonry. Forms a strong bond between paint and concrete, prevents blistering and peeling. Concrete Preservative is recommended for applications to all concrete exposed to severe corrosive conditions, such as floors in food manufacturing plants, bakeries, laundries, concrete tanks and vats, sewers, silos, bottling plants.

Specifications

Concrete floor (indicate areas) shall be treated with Master Builders Co. Concrete Preservative. To be applied direct from can with brush, after removing all surface dust, scale, etc., in exact accordance with directions of manufacturer. Surface may be used on following day or not less than 12 hours following application.

SANISEAL . . . Chemical Hardener for Floors Already Installed.

A powerful chemical hardener, which when mixed with water and brushed into the floor surface, deposits in the pores a hard, wear-resisting crystal. This arrests dusting and hardens the surface.

Saniseal is designed as a maintenance or corrective treatment for floors already installed. Not less than 2 lbs. of Saniseal should be used per 100 sq. ft.

Specifications

All concrete (or terrazzo) floors, after they have been cured and dried, shall be treated with Master Builders Co. Saniseal, used in exact accordance with directions of manufacturer.

INFORMATION FILMS

The film "Concrete Facts" tells the story of cement dispersion, an outstanding development that improves all concrete properties. It explains pictorially the action and benefits of both cement dispersion and air entrainment.

"The Story of Slab 37," another Master Builders' information film, tells about the development, features, and method of applying Masterplate—industry's toughest concrete floor.

Both films are available for private showing to interested groups of any size. Write for complete information.

FIELD SERVICE: Master Builders' thoroughly trained field representatives are located in all principal cities. We invite you to call on one of these men whenever confronted with a problem related to concrete and mortar.

MASTER BUILDERS BRANCH OFFICES

ALABAMA
Birmingbam, 1727 Sixth Avenue, North
Telephone: 7-3306

CALIFORNIA
Los Angeles 21, 1340 E. 6th St.
Telephone: Van Dyke 1619

COLORAOO
Denver, 1127 Adams St.
Telephone: Fremont 5645

FLORIDA
Umatilla, Box 92
Telephone: 2822

GEORGIA
Atlanta 3, 205 Luckie St., N.W.
Telephone: Walnut 8419

ILLINOIS
Chicago 1, 228 No. LaSalle St.
Telephone: State 2-4175
Danville, 2204 North Vermilion
Telephone: 2579-W
Rock Island, 1503 - 29½ St.
Telephone: 3-119

INDIANA
Indianapolis 4,
1039 N. Pennsylvania Ave.
Telepbone: Riley 7878

IOWA
Des Moines, 3321 S.W. 13 St. Pl.
Telephone: 4-7857

MARYLAND
Baltimore 18, 13 W. 25th St.
Telephone: Belmont 8740

MASSACHUSETTS
Boston 16, 80 Boylston St.
Telephone: Liberty 3351

MICHIGAN
Detroit 26, 604 Michigan Bldg.
Telephone: Cadillac 1246

MINNESOTA
St. Paul 3, 11 Como Avenue
Telephone: Cedar 6547

MISSISSIPPI
Jackson 103,
148 Millsaps, P. O. Box 326
Telephone: 47688

NEW YORK
Buffalo 1, 154 W. Huron St.
Telephone: Cleveland 5410
New York 17, 101 Park Avenue
Telephone: Murray Hill 6-1190

NORTH CAROLINA
Charlotte 7, 2010 Crescent Ave.
Telephone: 3-1974

DHIO
Columbus 2, 416 Garden Rd.
Telephone: Lawndale 1660

PENNSYLVANIA
Philadelphia 8, 401 N. Broad St.
Telephone: Walnut 2-8580
Pittsburgh 19, 304 Ross St.
Telephone: Grant 9580

TEXAS
Dallas 1, 103 Thomas Building
Telephone: Riverside 1053
Houston, 1539 Vermont St.
Telephone: Hadley 4872

WISCDNSIN
Milwaukee 4, 647 W. Virginia St.
Telephone: Broadway 2-1835

CANAOA
Toronto, Ontario
1107 Millwood Rd., Leaside
Telephone: Hyland 1193
Montreal, Quebec
1434 St. Catherine St. W.
Telephone: Harbour 6321

REPRESENTATIVES

ALABAMA
Mobile
Radcliff Gravel Co.
Reliance Equipment Co.

ARIZONA
Phoenix
Superior Sand & Gravel Co.

ARKANSAS
Fort Smith
Harry G. Barr Co.
Little Rock
Nevil C. Withrow Co.

CALIFORNIA
Bakersfield
Bakersfield Sandstone Brick Co.
San Francisco
Rolph, Mills & Co.

COLDRAOO
Denver
Colorado Builders Supply Co.
Pueblo
Fountain Sand & Gravel Co.

CDNNECTICUT
Bridgeport
Homer C. Godfrey Co.

DISTRICT OF COLUMBIA
Washington
A. P. Woodson Co.

FLORIDA
Jacksonville
Geo. P. Coyle
Miami Beach
Maule Industries, Inc.
St. Petersburg
E. L. March
Tampa
I. W. Phillips & Co.
W. Palm Beach
Burnup & Sims Co.

GEDRGIA
Augusta
Augusta Building Supply Co.
Savannah
John G. Butler Company

ILLINDIS
Moline
Moline Consumers Co.

INDIANA
Evansville
John L. Newman, Inc.
Ft. Wayne
Old Fort Supply Co.
Indianapolis
Spickelmeir Co.
Kokomo
Hansell Coal Co.
Lafayette
Kemmer Builders Supply Co.
South Bend
E. R. Newland Co., Inc.
Terre Haute
Reiman Lime & Cement Co.

IOWA
Cedar Rapids
Kings Crown Plaster Co.
Davenport
Austin Crabbs Inc.
Des Moines
A. J. Crawford
Dubuque
Conlons

KANSAS
Kansas City
Claude Cooke
Wichita
Allen's, Inc.

KENTUCKY
Ashland
Middle States Concrete Co., Inc.
Lexington
Clay-Ingels Co.
Louisville
American Builders Sup. Co., Inc.
Paducah
Geo. W. Katterjohn Co.

LOUISIANA
Alexandria
F. A. Flynn
New Orleans
C. A. King, Jr.,
Shreveport
Builders Supply Co., Inc.

MARYLAND
Baltimore
Pen-Mar Company
Cumberland
Cumberland Cement & Sup. Co.
Hagerstown
Victor Cushwa & Sons, Inc.
Salisbury
Booth Building Specialties

MASSACHUSETTS
Boston
J. P. O'Connell Co.
Wm. S. Simpson, Inc.
Springfield
Warren F. Hoye, Inc.
Worcester
Kesseli & Morse Co.

MICHIGAN
Flint
W. C. Dover & Co.
Kalamazoo
Miller Lumber Co.
Lansing
The Briggs Co.
Muskegon
Muskegon Building Materials Co.

MINNESOTA
Minneapolis
Frank P. White Co.

MISSISSIPPI
Jackson
The Fred Thrasher Co.

MISSOURI
St. Louis
Lange-Schmidt Co.

MONTANA
Butte
Archie W. Adams
Helena
Builders Supply Co.

NEBRASKA
Omaha
Earl S. Lewis & Co.

NEVADA
Las Vegas
Las Vegas Building Materials Co.

NEW JERSEY
Clifton
Campbell Morrell & Co.
Harrison
Harrison Supply Co.
Linden
Thorn-Wilmerding Co.
Newark
F. Bowden

NEW MEXICO
Albuquerque
Cobusco Steel Products

NEW YDRK
Binghamton
Binghamton Slag & Roofing Co.
Elmira
Harris, McHenry & Baker Co.
Jamestown
Lakewood Supply, Inc.
Niagara Falls
Empire Builders Supply Co.
Rochester
Hutchison-Rathbun, Inc.
Schenectady
Grimm Bldg. Material Co., Inc.
Syracuse
Paragon Supply, Inc.
Tarrytown
Cooney Brothers
Utica
American Hard Wall Plaster Co.

NDRTH CAROLINA
Asheville
Reed & Abee, Inc.
Charlotte
Tucker-Kirby Co., Inc.
Durham
Constructors Supply Company
Greensboro
F. D. Lewis & Son
Leaksville
Rockingham Concrete Company
Raleigh
Ready Mixed Concrete Company
Rocky Mount
M. P. J. Williams
Wilmington
S & G Concrete Company

OHID
Akron
The J. P. Loomis Coal & Sup.Co.
Barberton
Stuver Bros. Co.
Bellaire
Buckeye Sand & Supply Co.
Canton
Hursh & Schory Coal Co.
Cincinnati
Cinder Products Co., Inc.
Columbus
Howard S. Sterner Co.
Elyria
West Side Lumber Co.
Springfield
The Beckley & Myers Co.
Toledo
Kuhlman Builders Supply Co.
Youngstown
Youngstown Building Material & Fuel Co.

DKLAHOMA
Oklahoma City
Bissell Builders Supply Co.
Tulsa
Bissell Builders Supply Co.

OREGDN
Portland
McCraken-Ripley Company

PENNSYLVANIA
Aliquippa
P. M. Moore Co.
Beaver Falls
Frank Rieser & Sons
Bradford
E. W. Bisett & Son
Brownsville
Brownsville Constr. Co., Inc.
Dubois
John A. Kohlhepp & Sons
Erie
B. Schafer Wholesale Co., Inc.
Harrisburg
Pennsylvania Supply Co.
Hershey
Hershey Lumber Co.
Johnstown
John W. Walters Co.
Lancaster
J. C. Budding Co.
Latrobe
Pohland Brothers
Lebanon
Lebanon Ready Mix ConcreteCo.
Meadville
City Coal & Supply Co.
Pittsburgh
McCrady-Rodgers Co.
Scranton
Scranton Ready-Mix Concrete Co.
Wilkes-Barre
Wm. H. Pierce
Williamsport
Cement Products Co.
York
Service Supply Co.

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H. R. Horton Co.

SOUTH CAROLINA
Charleston
Van Smith Building Material Co.
Greenville
J. C. Plowden
Sumter
Sumter Concrete Company

SOUTH DAKDTA
Sioux Falls
George H. Brown

TENNESSEE
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Sewanee Coal & Supply Co.
Knoxville
Harris Supply Corp.
Nashville
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West Texas Brick & Tile Co.
Amarillo
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Dallas
Macatee, Inc.
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Booker-Walker Supply Co.
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Fort Worth Sand & Gravel Co.
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Houston
A. M. Bowles
Lubbock
Lubbock Building Products
Marshall
Logan & Whaley
San Antonio
Rufus A. Walker
Waco
Oscar F. Moore Co.

UTAH
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Cobusco Steel Products

VIRGINIA
Luray
Barnes Distributors
Lynchburg
Campbell-Payne, Inc.
Norfolk
Batchelder & Collins
Portsmouth
Geo. T. McLean Co., Inc.
Richmond
Ruffin & Payne, Inc.
Roanoke
C. Grady Cates

WEST VIRGINIA
Bluefield
Citizens Coal & Supply Co.
Charleston
Oscar F. Henry & Co.
Morgantown
McClain Sand Company
Parkersburg
Parkersburg Ice & Fuel Co.
Wheeling
H. L. Seabright Co.

WISCONSIN
Green Bay
Gagnon Clay Products Co.
LaCrosse
Louis E. Meir
Madison
Findorff Lumber & Supply Co.
Milwaukee
Wauwatosa Fuel & Supply Co.

CANADA
Calgary, Alberta
Alberta Transit Mix Concere Co.
Edmonton, Alberta
C. W. Carry, Ltd.
Vancouver, B. C.
The O'Neil Co., Ltd.
Victoria, B. C.
Wm. N. O'Neil Co., Ltd.
Winnipeg, Manitoba
Cowin & Co., Ltd.
Halifax, N. S.
W. H. Noonan
Hamilton, Ontario
Howard Construction Materials
Kirkland Lake, Ontario
Hill-Clark-Francis, Ltd.
New Liskeard, Ontario
Hill-Clark-Francis, Ltd.
Ottawa, Ontario
Webster & Sons, Ltd.
Port Arthur, Ontario
W. V. Barker & Co., Ltd.
Sudbury, Ontario
Hill-Clark-Francis, Ltd.
Timmins, Ontario
Hill-Clark-Francis, Ltd.
Windsor, Ontario
E. H. Arnold
Bourlamaque, Quebec
Hill-Clark-Francis, Ltd.
Noranda, Quebec
Hill-Clark-Francis, Ltd.
Quebec, Province of Quebec
Webster & Sons, Ltd.
Saskatoon, Saskatchewan
MacKenzie & Thayer, Ltd.

THE MASTER BUILDERS COMPANY

7016 Euclid Avenue • Cleveland 3, Ohio

IN CANADA: THE MASTER BUILDERS CO., LTD. TORONTO, ONTARIO

Research Laboratories: Cleveland

Factories: Cleveland, Buffalo, Toronto

Printed in U. S. A.

TRADE MINWAX MARK

For 41 Years a Complete Service for Waterproofing and Dampproofing

Minwax service to Architects and Builders consists of products and experience in the proper way of using them. We and our representatives welcome inquiries and the opportunity of presenting full information.

Our products are for Waterproofing, Dampproofing, Caulking and Surface Protection. Brief descriptions and specifications are suggested in the paragraphs which follow. Our experience covers a period of 41 years and all types of construction.

MINWAX MEMBRANE WATERPROOFING

Description—Consists of alternate layers of Minwax Waterproofing Asphalt and Minwax Cotton Cord Cloth, forming a built-up blanket or mat constructed to envelop or cover the portion of the structure to be waterproofed. This creates a tough, stretchable elastic membrane that gives maximum protection against leakage due to cracking, temperature or vibration movement.

Specifications—Membrane shall generally consist of primer, 3-ply fabric and 4 moppings asphalt laid on dry, smooth, solid surface and protected against damage by other trades. Where minimum quantities are desired, use 2-ply and 3 moppings. Detailed specifications on request. Minwax Cotton Cord Cloth weighs 4 oz. per yard unsaturated and minimum 11 oz. saturated. Complies with requirements of Federal Specification H.H.C.-581A and A.S.T.M. Specification D173.

Note: For dampproofing foundations see Minwax Asphaltic Dampproofings.

MINWAX EXPANSION JOINT CEMENT

Description—A black, solid, elastic, asphalt compound, which is a blend of special Minwax Asphalts and colloidal mineral fillers. Heated and poured into a joint, it will form an elastic, water-tight bond to masonry, steel, or glass. For over thirty years this material has been meeting all conditions of exposure and service in this field, and has established an outstanding record for effectiveness.

Minwax Asphalt Primer

A penetrating solution of Minwax Asphalts for application to sides of joint to kill dust and insure a permanent bond for the Expansion Joint Cement.

Triboro Bridge, New York, N. Y.
Minwax Expansion Cement used in all expansion joints in the deck

Specifications—Horizontal Joints—A. (For joints in bridge decks, landing fields, sidewalk slabs, swimming pools, reservoirs, and other conditions where no continuous underslab exists.) Joints shall be thoroughly dry, clean, and free from all dust and loose material and shall be primed with a saturating coat of Minwax Asphalt Primer which shall dry before joint is poured. Caulk the bottom one-third of the joint with spun oakum packed firmly but not driven hard. Heat Minwax Vault Light Cement until thoroughly liquid.

B. *(For joints of tile roofs and slabs over membrane in flashing groove or other joints in double slab construction.)*

Note: In general these joints should be not less than 1 in. in width and spaced so as to break the slab or roof into squares approximately 20 to 25 ft. in size and should extend through to membrane weatherproofing. Joints should also be formed against the parapet or similar wall surface.

Proceed as above (**A**) but *omit* packing bottom of joint with oakum.

Sloping Joints—For sloping joints (more than ¼ in. per ft. slope) proceed as specified under **A** or **B** but imbed in the center of the poured joint ¼ in. below surface a length of standard manila rope fastened at upper end.

Vertical Joints—Where filling is required for vertical joints Minwax Asphalt Caulking Compound or Minwax Grey Caulking Compound should be substituted for Minwax Vault Light Cement where an elastic filler is required.

SPANDREL WATERPROOFING

Minwax Full Seal Fabric

A heavy, closely woven cotton fabric saturated and sealed with Minwax Waterproofing Asphalt. This presents a strong, flexible, elastic and puncture-resistant membrane that will not expand and contract under temperature movements as do metal sheets. Its flexibility insures minimum reduction of bond and normally it causes no reduction in the structural strength of the wall. It is waterproof in itself but should be laid in and coated with Minwax Trowel Coat Dampproofing. This material weighs minimum 7 oz. per yard unsaturated and minimum 17 oz. per yard saturated.

Specifications for Spandrel Waterproofing

Scope of the Work—Damp courses, flashing or spandrel waterproofing shall extend from ½ in. of the face through the wall, turn up 3 in. on the inside, and above windows extend 6 in. beyond jambs, ends turning up 1 in. to form pan; as shown on drawings.

Preparation—All surfaces to receive waterproofing shall be smooth, hard, and free from projections to the satisfaction of the dampproofing contractor.

Application—This contractor shall apply one layer of MINWAX Full Seal Fabric laid in a full coat of Minwax Trowel Coat Dampproofing and top coated with one full trowel coat of the same material. Laps shall be not less than 6 in. Turn-up on back of wall shall be installed as above. Where fabric turns up on steel it shall be turned up not less than 6 in.

Massachusetts General Hospital, Boston
Coolidge, Shepley, Bulfinch & Abbot—Arch.
Minwax Full Seal Fabric for Spandrel Waterproofing
Minwax Trowel Coat Dampproofing on exterior steel columns

For Pages on Minwax Wood Finishes see Sweet's File Index

MINWAX COMPANY, INC.

11 WEST FORTY-SECOND STREET • • NEW YORK 18, N. Y.

Branch Office: 232 E. Erie St., CHICAGO 11, ILL. Factory: DELAWANNA, N. J.

Minwax Dampproofing and Caulking Materials . . .

Minwax Superseal Fabric

This material is a factory prepared fabric for waterproofing at spandrel, through wall flashing, etc., ready for installation. It is a strong woven cotton fabric saturated and heavily coated with a plastic asphalt compound. It is waterproof in itself. The only mastic required is for sealing laps and spot-bonding on the surface to which it is applied. This material weighs 4 oz. per yard unfinished and minimum 40 oz. per yard saturated and coated.

Specifications for Spandrel Waterproofing

Application—This contractor shall apply one layer of Minwax Superseal Fabric extending as above specified bonded to the masonry and at laps which shall be not less than 6 in. with Minwax Trowel Coat Dampproofing. Turn-up on back of wall shall be bonded with Trowel Coat Dampproofing. Where Fabric turns up on steel it shall be fully bonded with Trowel Coat Dampproofing and turn-up shall be not less than 6 in.

ASPHALT DAMPPROOFINGS *for Dampproofing Under Plaster and for Foundations*

Minwax Asphalt Dampproofings are designed (1) for dampproofing the inside of masonry walls above ground where plaster is applied directly against the dampproofing; and (2) for dampproofing the outside of foundation walls where backfill is placed directly against the dampproofing. Made from Minwax Waterproofing Asphalts they are of proved permanence and are made in three consistencies.

1st. **Minwax Spray Coat**—For spray or brush application. Specify for protection against built in moisture and normal exposures. Specify 2 coats, using 70 sq. ft. per gal. per coat.

2nd. **Minwax Fibrous Brush Coat**—With asbestos fibre. Works smoothly and well under the brush. Specify for additional protection 2 coats, using 70 sq. ft. per gal. per coat.

3rd. **Minwax Trowel Coat**—Reinforced, filled and bodied to create a self-priming mastic applied with trowel to insure a heavy, absolutely continuous dampproof film on all masonry surfaces. Specify where maximum protection is desired, one trowel application, using 1 gal. to each 12 sq. ft. for $\frac{3}{32}$-in. film thickness.

Specifications

Preparation—(Specify also under masonry.) All wall surfaces to receive dampproofing shall be left by the mason contractor smooth, sound, free from holes or cracks and from projections or mortar clinkers.

(a) *Dampproofing Under Plaster*—Dampproof the inside of all exterior walls from first floor line to roof, extending 6 in. out on all ceilings, behind all interior partitions and connected carefully to spandrel and through flashing turn-up. *Caution:* These materials not recommended under plaster on ceiling, on cast concrete wall surfaces, nor under cement plaster.

(b) *Dampproofing Foundations*—Dampproof the outside of all exterior walls from bottom of footing to grade.

MINWAX CAULKING MATERIALS

Designed for sealing joints around window or door frames to prevent the penetration of moisture or air; also for an elastic weatherproof seal for any masonry joints, particularly in extending members, such as capstones, copings, cornices, belt courses, watertables, etc. May be applied with either a hand tool, hand gun or power gun, either on new work or old. They are highly resistant to conditions of heat, cold, smoke or fumes, etc. They bond satisfactorily to wood, stone, steel, glass or other building materials and will remain plastic and render efficient service for many years.

There are two types of material:

Minwax Caulking Compound

In three standard colors: white, grey and buff. It is recommended for all locations where an elastic caulking of light color or one to take paint is desired. In two consistencies: No. 1 (soft) for gun application only; No. 2 (heavy) for knife or hand tool.

Minwax Asphalt Caulking Compound

Made in black only and is recommended for industrial work or for surfaces where dark color is satisfactory. It cannot be painted over. It is non-staining and can be used against limestone and similar surfaces. Made in one consistency, suitable for hand or gun application.

PITTSBURGH TESTING LABORATORY REPORT

Covering actual jobs on which Minwax Caulking Compounds have given up to 9 years' service without renewal or replacement cost. Report gives detailed facts on condition of prominent buildings, just as if you yourself had made a personal inspection of these jobs.

Here is authentic proof that Minwax Caulking Compound will deliver many years' trouble-and-expense-free service.

Send for your copy.

Specifications

Exterior Caulking—*Wood or Kalamine Doors or Windows*—Remove all exterior moulds and clean out and caulk all joints between frames and masonry.

Steel or Hollow Metal Doors or Windows—Clean out and caulk all joints between steel (or) hollow metal doors and window frames and masonry.

Sub-frames—Caulk all joints between sub-frames, and door and window frames.

Metal Spandrels—Caulk all jambs between spandrel and masonry and at joint between sill and spandrel and window head.

Shelf Angles—Clean out and caulk all joints between masonry and underside of steel shelf angles.

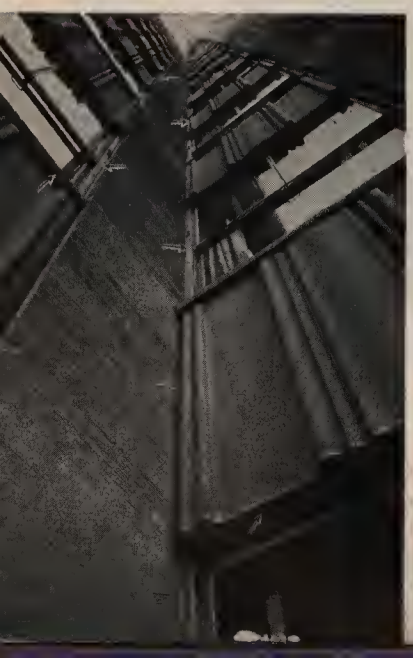
Half Timbering—Clean out and caulk all joints between masonry and wood half timbering, wood lintels.

Sills and Saddles—Wood (or) metal window sills and door sills (or) saddles shall be set in a bed of caulking compound.

Pointing Stone, Terra Cotta, etc.—All joints in stone and terra cotta on the top of copings, cornices, belt courses, washes and sills shall be raked out to a depth of $\frac{5}{8}$ in., and filled solid with Minwax Caulking Compound, color as selected. (See also "WEATHERCAP.")

Glass Block—Caulk outside joints between glass and steel, wood or masonry at head and jambs of all glass block panels and on inside face caulk the joint at head, jambs and sills of all such panels.

Application—Pack all joints with oakum and fill solidly from the outside with Minwax Caulking Compound to a depth of not less than $\frac{3}{4}$ in. The sills shall be caulked from the inside also. The caulking shall be done before staff beads are set.



R.C.A. Building, Rockefeller Center, New York

All caulking, in all buildings throughout Rockefeller Center, is with Minwax Compound. Grey caulking in the copings, asphalt in the spandrels and window joints

WEATHERCAP

Req. U. S. Pat. Off.

U. S. Patent No. 2016968

Canadian Patent No. 358723

for MASONRY JOINT PROTECTION

"WEATHERCAP" is a formed strip of pure soft lead, the purpose of which is to create a permanent, waterproof seal for horizontal and sloping joints in masonry, such as copings, cornices, water-tables, balustrades, steps, etc. "WEATHERCAP" is embedded in Minwax Caulking Compound. The compound provides an elastic, adhesive, waterproof filler for the joint.

"WEATHERCAP" is furnished in two shapes (Type A and Type B) as shown opposite. Each type is made in three sizes, to provide for varying widths of masonry joints.

"WEATHERCAP" serves to seal the compound in the joint, and protect the compound against deterioration from the action of sunlight and atmosphere.

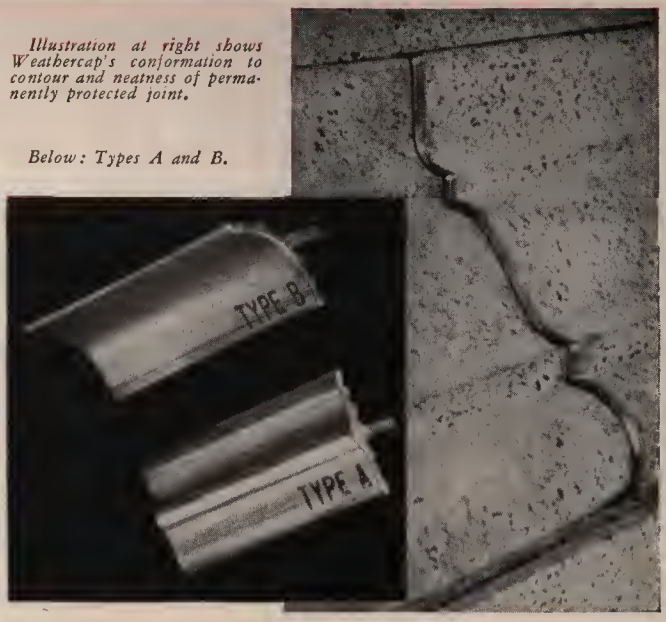
As "WEATHERCAP" is pure soft lead, it is easily cut to size on the job. Its anchor can readily be notched, permitting it to be easily bent around corners. It is very malleable, and will therefore conform to the contour of rough masonry surfaces. It produces a beautiful even joint, and will not discolor or stain any surface to which it is applied. Its neutral grey color harmonizes with all building materials.

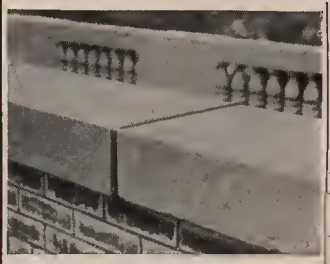
Specifications

Joints are raked ⅞ in. deep, cleaned, primed with Minwax Colorless and caulked with an excess of Minwax Grey Caulking Compound. "WEATHERCAP" cut to size and notched for corners, is then set in the compound and pressed to a solid bed, thereby forcing the excess compound out on both sides, and filling all bonding grooves. Excess compound is then removed, leaving the masonry surface neat and clean.

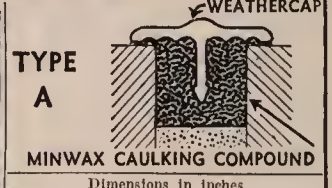
Illustration at right shows Weathercap's conformation to contour and neatness of permanently protected joint.

Below: Types A and B.





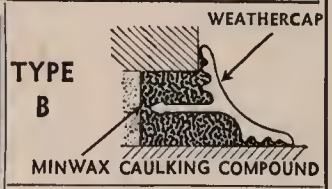
Type A Weathercap



Dimensions in inches

Size	W	D	To Cover Joints
2	9/16	5/16	Up to 3/8
3	11/16	3/8	3/8 to 1/2
4	1	7/16	1/2 to 3/4
6	1½	1/2	3/4 to 1¼

Type B Weathercap



Dimensions in inches

Size	W	D	To Cover Joints
2	3/8	5/16	Up to 5/16
3	9/16	3/8	3/8 to 1/2
4	3/4	7/16	1/2 to 5/8

MINWAX TRANSPARENTS

Minwax Transparents are recommended for preventing staining, weather and frost erosion, and for preventing and correcting leakage through exposed masonry walls above grade without objectionable change in color or texture. These materials have a record of successful use of over 30 years with construction industries. Joint defects caused by structural movement which are likely to recur should be cut out, primed with Minwax Colorless and caulked with Minwax Caulking Compound.

Two Types of Materials Are Made

Minwax Clear—For red brick, concrete, and darker colored porous surfaces. Brings out the underlying colors of the surface. No work should be done with this material at a temperature below 60° F.

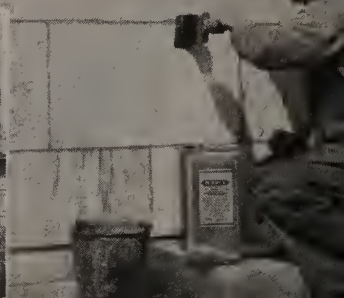
Minwax Colorless—For limestone, artificial stone, stucco, and light colored, close textured surfaces. It can be used on the lightest colored surfaces without appreciable change in color. No work should be done with this material at temperatures below 50° F.

Specifications

Preparation—*New Work:* All mortar joints shall be full, solid, free from holes, cracks, or defects.

Old Work: Cut out and replace with high lime mortar, all loose, cracked and defective mortar joints before application of first coat. Cut out and recaulk as necessary with Minwax Caulking Compound No. 1 Gun Grade all joints in coping, around windows, etc.

Application—Apply not less than two coats of either Minwax Clear or Minwax Colorless. The surface must be clean, dry and warm enough so the material will not congeal. Work should progress downward. Two coats are usually required. For unusually absorbent surfaces three coats. Each coat should be generously applied. Runs should be brushed out so as to leave no excess. Allow 12 hours between coats.



Minwax Colorless applied to exterior marble on New York Public Library. Also all defective joints caulked with Minwax Caulking Compound and capped with Weathercap—1946: Standard Waterproofing Corp., Application Contractor

MINWAX REPRESENTATIVES

CALIFORNIA
Norman Huff
217 E. Market Street
Los Angeles 12, Calif.

CANADA
E. T. Sompson & Co., Ltd.
2040 Victoria Street
Montreal 2
Herbert J. Loney
119 Pender Street W.
Vancouver, B. C.

COLORADO
Clyde M. Paddock Distributors
3143 Yates Street
Denver 12, Colo.

FLORIDA and SOUTH GEORGIA
M. O. Huck Co., Inc.
Union Terminal Building
Jacksonville

ILLINOIS
Minwax Company, Inc.
232 East Erie Street
Chicago 11

KENTUCKY
Martin R. Ayers Co., inc.
1000 E. Kentucky Street
Louisville 4

MARYLAND
D. C. Elphinstone, Inc.
115 So. Calvert Street
Baltimore 2

MICHIGAN
Fred G. Gardner
13985 Archdale Rd.
Detroit 27

MINNESOTA
Frank P. White Company
205 Girard Ave., No.
Minneapolis 5

MISSOURI
Protective Materials Co.
1511 South 8th Street
St. Louis 4

NEW ENGLAND
Edmund M. Finn
84 Rogers Street
Cambridge 42, Mass.

NORTH and SOUTH CAROLINA and NORTH GEORGIA
J. B. Shatzer
P. O. Box 3200
Charlotte, N. C.

OHIO
Mills Building Products, Inc.
2036 E. 22nd Street
Cleveland 15
Alvan Tallmadge
8 East Long Street
Columbus 15

OREGON
Gilmer Building Specialties
314-316 S. E. Madison St.
Portland 14

PENNSYLVANIA
Lee J. Dawson
1920 Cherry Street
Philadelphia 3

TENNESSEE
Cook & Nichol, Inc.
440-460 Decatur Street
Memphis, Tenn.

WEST VIRGINIA
John H. Froelich
1471 Worthington Street
Fairmont, W. Va.

WISCONSIN
Lake Shore Supply, Inc.
2410 No. Murray Ave.
Milwaukee 11

MINWAX BRICK AND CEMENT COATING

Preserves, Beautifies and Protects All Masonry Surfaces

McCormick & Company, Baltimore, Md.
Minwax Brick & Cement Coating
on exterior concrete
Klicos Painting Co., Application Contractor

Minwax Brick and Cement Coating is a two purpose material: decorative coating combined with a protective preservative treatment for masonry surfaces. Its ability to protect and prevent frost action and leakage in both industrial and residential construction makes its use economically sound.

Produces a clean, even color with a soft, natural, non-painty effect particularly suitable for fine work.

Specifications—General—(1) Surfaces to which Minwax Brick and Cement Coating is to be applied should be thoroughly cured, sound, free from dust, sand, scale or other loose material and thoroughly dry when the material is being applied.

(2) Apply . . . . coats of Minwax Brick and Cement Coating colors as selected, with brush or air spray, allowing 24 to 48 hours between coats. Thin first coats as directed with Minwax B. & C. Thinner only; apply final coat straight without thinning or adulteration.

Extent of Work—On all exterior masonry extend the coating work in such a manner as to prevent the possibility of moisture getting into the wall back or above the treated surfaces. Where there is an open joint caulk with Minwax Caulking Compound.

Number of Coats—Two coats will give excellent results under most conditions. *In all cases* to assure uniform color "touch up" of suction spots which show light after first coat, is important. *Three coats* are recommended for very porous surfaces, as *common brick*, for severe exposures, and where maximum life and service is desired.

Covering Capacity—200 to 300 sq. ft. per gallon per coat.

Colors—White, Cream, Yellow, Caenstone, Limestone, Terra Cotta, Brownstone, Cement Grey, Green, Blue.

TERRAZZO FLOOR FINISH

Minwax terrazzo Floor Finish penetrates and seals the surface, producing a uniform protective polish. It protects the surface against wear and staining and reduces the cost of maintenance.

Directions for Application

Apply a light coat with a cloth. Spreading in a uniform, thin film and when dry (30 minutes to 1 hour) polish to a hard, dry surface with an electric polishing machine. When two coats are required allow 12 hours between coats and apply second coat as directed above. Covering capacity 600 to 1000 sq. ft. per gallon per coat.

MINWAX CONCRETE FLOOR FINISH

A penetrating sealer and dustproofer for concrete floors. It acts by penetrating and depositing tough mineral gums deeply in the pores of the concrete, adding *Toughness* and *Density* and creating a non-dusting, wear-resistant, stain-resistant surface. Supplied in clear only. Apply with a mop two saturating coats to dry floor twenty-four hours between coats. Coverage: 200 to 400 sq. ft. per gal. per coat.

TRADE MINWAX MARK

MINWAX COMPANY, INC.

11 West 42nd St., New York

AQUELLA

Reg. U. S. Pat. Off.

for the Control of

WATER SEEPAGE

and

DAMPNESS

Interior or Exterior . . . Above or Below Grade

***on* BRICK, CONCRETE, CEMENT PLASTER,**

STUCCO AND CONCRETE MASONRY UNITS

PRIMA PRODUCTS, INCORPORATED, *National Distributor*

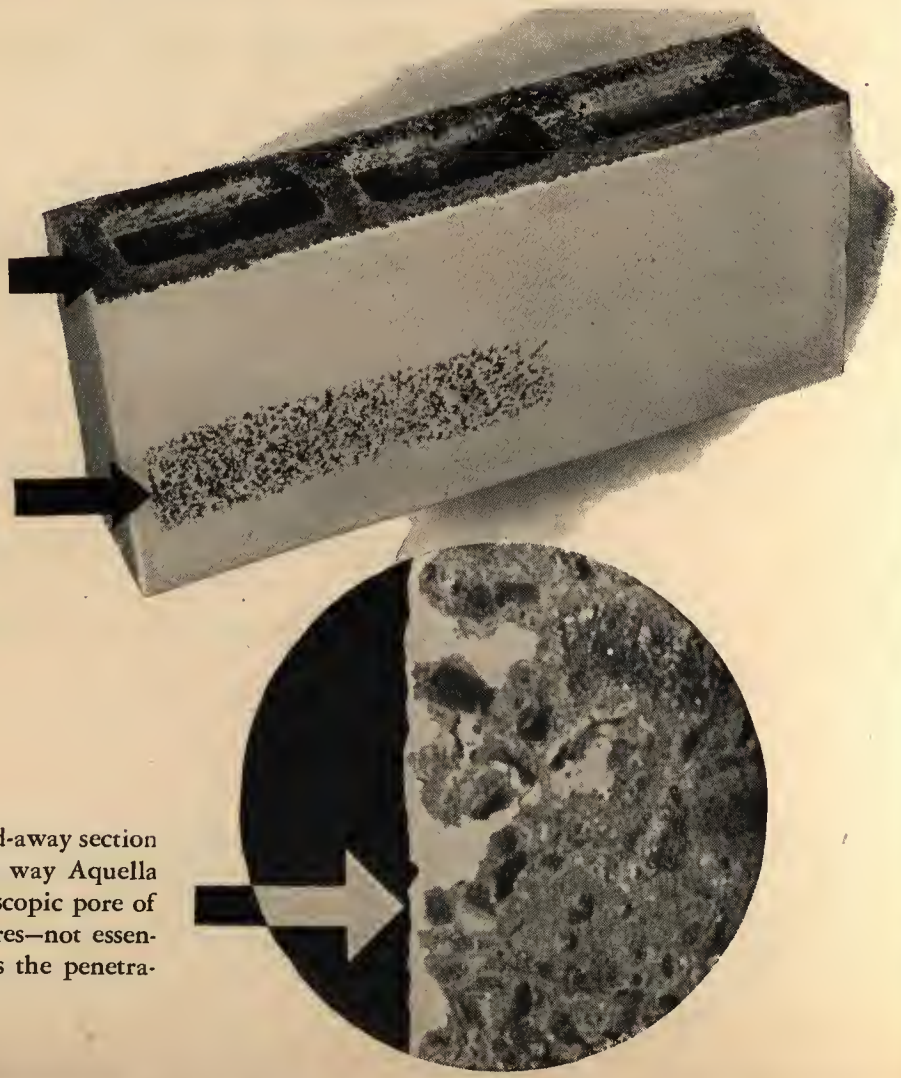
10 East 40th Street, New York 16, N. Y.

What AQUELLA Is . . .

• AQUELLA IS A WHITE POWDER, composed of properly balanced, and very finely ground, inorganic ingredients. When mixed with water, it produces an excellent decorative surface coating for the control of water seepage and dampness on interior and exterior porous masonry surfaces. AQUELLA contains no organic binder, hygroscopic salts or stearate. Because of its minutely dispersed aggregates, AQUELLA fills and closes the microscopic pores of the surface to which it is applied.

• CONTRARY TO THE SHRINKAGE PHENOMENA of most waterproofing materials, AQUELLA expands minutely upon curing, insuring a quantitative filling of the pores and a better bond. Because of the filling of the pores with AQUELLA, the presence of a hydrostatic head of water on the unprotected side does not impair the integrity of the treated surface nor its property to resist capillary action or seepage of water.

The principle on which AQUELLA works



1 Here is an Aquellized concrete masonry unit filled with water. Naturally, there is no leakage.

2 But what happens if the Aquella surface coating is scraped off? To answer that, we scraped away this portion, and there's still no leakage. This may be slightly puzzling until you study the photograph of the third step . . .

3 The enlargement of a small, sawed-away section of the above block, which shows the way Aquella penetrates to fill and close each microscopic pore of the surface. It is the filling of the pores—not essentially the surface coating—which stops the penetration of water.

AQUELLA WITHSTANDS HYDROSTATIC PRESSURE TEST OF 500 LBS. PER SQUARE FOOT

The two columns you see here were set up to determine the effect of a hydrostatic pressure created by an 8-ft. head of water on a surface treated with Aquella.

Both columns were made of highly porous cinder blocks, with an absorption rate of 22-25% by weight.

First, both columns were tested in their natural state and showed that they had identical coefficients for permeability. After such tests, the column on the left was treated with Aquella, while the one on the right was not.

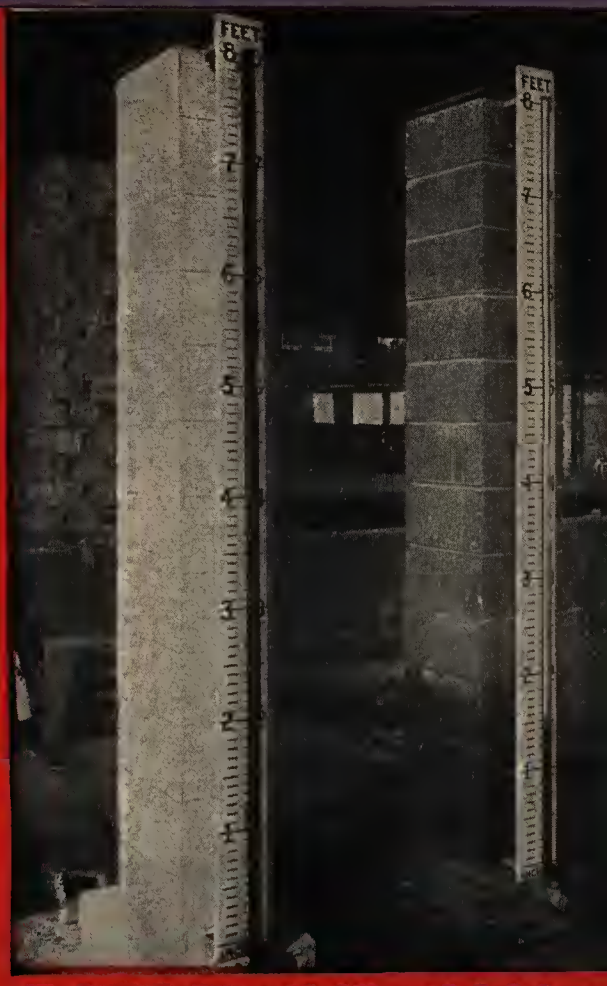
The Aquellized column withstood the pressure of an 8-ft. head of water, equivalent to a hydrostatic pressure of approximately 500 lbs. per sq. ft., at the base.

The untreated column could not be filled with water higher than 18 3/4", because at that point the seepage was equal to the intake, which was at the rate of 2 gallons per minute.

Tests prescribed by the U. S. Bureau of Standards call for a maximum 2-inch head of water, or 10 lbs. pressure per sq. ft. The test described here is therefore approximately 50 times more severe than that prescribed by the U. S. Bureau of Standards.

Aquella having proved its effectiveness under conditions as extreme as this, must necessarily be equally successful when applied to other types of masonry construction such as concrete, brick, stucco or cement plaster.

AQUELLA IS A 'MUST' ON EVERY CINDER BLOCK



The Aquellized column, at left, holds an 8-ft. head of water (500 lbs. per sq. ft. at the base); the untreated column offers no practical restriction to the flow of the water through its walls.

An Unusual Waterproofing Problem:

HOLDING BACK A 4 FT. HIGH TIDE in an Elevator Pit.

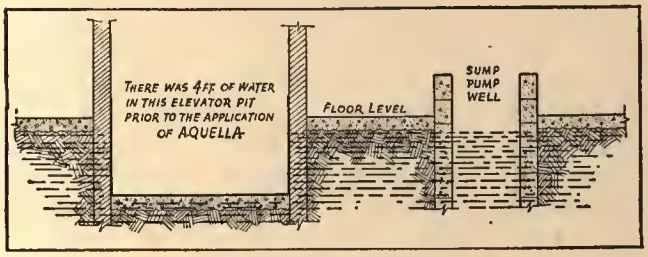


Diagram illustrating the problem.

● The PROBLEM: To control water seepage in the elevator pit of the Barnum Garage, Bridgeport, Conn. Located directly over an old river bed, the pit daily filled with water up to four feet when the tide came in. Continual seepage caused cables and mechanism to rust; breakdowns were frequent. After so-called "waterproofing paints" were proven ineffective, a three-foot sump pump well was installed with an oversized pump, having a two-inch main. The pump worked constantly; literally it was pumping a river. But even this did not work, because of mechanical and electrical failures.

● The SOLUTION: The application of AQUELLA.

The elevator pit after it was treated with Aquella in January, 1945. According to L. Levitt, garage operator, it hasn't leaked since it was Aquellized 20 months ago.

● The RESULT: As Mr. L. Levitt, operator of the garage, describes it: "Since January 1945, when the elevator pit was Aquellized, we have had the sump pump disconnected — even though the water in the sump pump well rises up to the cellar floor level. This proves that the floor and walls of the pit are surrounded by water held back by Aquella."

Questions and Answers concerning AQUELLA

How many formulae of AQUELLA are there?

There are two. AQUELLA No. 1 for *interior* use and AQUELLA No. 2 for *exterior* use.

What finishes does AQUELLA produce?

AQUELLA produces a smooth egg-shell-like finish; if properly applied and cured it will not powder, rub off, blister, peel or flake.

On what surfaces may AQUELLA be used?

AQUELLA is made for use on concrete, masonry blocks, such as cinder concrete blocks, stone concrete blocks, sand-grit blocks, lightweight concrete blocks and structural clay tile (terra cotta) blocks, brick, cement plaster, cement, stucco and any similar porous masonry surface. AQUELLA may not be applied over bituminous, kalsomined, whitewashed, painted, or other surfaces which have been previously treated with a waterproofing compound, unless such coat has been completely removed.

Does AQUELLA come in colors?

Stock AQUELLA is white. It may be painted over with any type of paint in the desired color after it is thoroughly cured. AQUELLA may now also be obtained in gray, green, buff and rose.

How many coats of AQUELLA are recommended?

For interior surfaces of walls above grade, one coat of AQUELLA No. 1 is sufficient, unless the surface is exceedingly porous or located in high wind areas, in which case two coats are recommended. For interior surfaces of walls below grade, two coats of AQUELLA No. 1 are recommended. For exterior use, two coats of AQUELLA No. 2 are recommended.

What conditions are best during Aquellizing?

AQUELLA must not be applied in the rain or when the temperature is below 40°F or likely to be reached within 48 hours. A moist atmosphere is helpful. High winds, strong sunshine, and excessive heat may cause AQUELLA to dry too quickly and render the coating ineffective. Under such conditions, extra precaution must be taken to keep the entire surface moist.

How are surfaces prepared?

Cleanse the surface thoroughly of all dirt, dust, loose particles, oil, grease, lacquer, paraffin, paint, or any other substance which would prevent AQUELLA from striking in or bonding into the masonry pores. Suggestions for preparing unclean and previously treated surfaces are contained in every bag.

How is AQUELLA mixed?

To prepare one gallon, mix contents of one gallon container into approximately three quarts of clean, cold water *until it reaches a heavy, creamy consistency.*

Add the powder to the water gradually, stirring constantly until all lumps have completely disappeared and the mixture made creamy. Allow mixture to stand for ten minutes before using. The mixture must be kept uniform by stirring at frequent intervals.

After mixing, AQUELLA must be

used within two hours or it will set. Therefore, mix only the required quantity for use within this time.

How are cracks treated?

AQUELLA is ideally suitable for the filling of cracks, holes and the pointing up of defective joints in masonry surfaces. Rake out cracks deeply and remove loose joint mortar; clean and wet thoroughly. Prepare a paste of putty consistency by mixing AQUELLA with a small quantity of water. Then force the AQUELLA paste into the cracks or joints with a flat knife. For large cracks, the paste should contain one part AQUELLA, one part fine sand and one part Portland cement.

How is AQUELLA applied?

AQUELLA NO. 1 and AQUELLA NO. 2 are applied in the same manner, as follows:

(1) Saturate surface with clean water, using hose with spray. A superficial dampening with a wetted brush or sponge is not sufficient. Spray surfaces from all directions (up, down, left and right) at least four times. Allow sufficient time between sprayings for water to soak in. If the surface dries rapidly, as it may under certain conditions, redampen before Aquellizing. Surfaces should be uniformly moist, not dripping wet or have a visible water film when AQUELLA is applied. If surfaces are NOT saturated, they will absorb too much of mixing water from AQUELLA thereby depriving it of moisture required for proper chemical action and hardening. AQUELLA should not be applied while there is a flow of water on the surface as it will wash away the mixture.

(2) Apply the first coat of AQUELLA with a stiff fibre fender brush. Thorough and vigorous scrubbing of AQUELLA into every pore of the surface is essential.

(3) When AQUELLA has hardened sufficiently to prevent damage, usually six to twelve hours after application, it must be kept moistened for at least 48 hours by using a fine spray at frequent intervals. Under some conditions, especially on exterior applications, AQUELLA may dry in a much shorter period—from a few minutes to a few hours. If this happens, apply a fine spray to the Aquellized surface, keeping constantly moist while wind and sun are present.

(4) Where two coats are required, apply and water-cure the second coat in the same way as described for the first, dampening the first coat before application of the second.

NOTE: *Complete and detailed instructions for applying* AQUELLA *are contained in every bag.*

May AQUELLA be applied on floors?

Yes. Two coats of AQUELLA should be applied on concrete, cement, brick and similar porous masonry floors. Floors should first be tested for porosity. Simply pour about an ounce of water on the floor and observe if water is immediately absorbed. If water does not disappear in a very few minutes then, in order to Aquellize it, floor must first be etched with muriatic acid and then hosed down with clean water. Floors when thoroughly cured, should be protected from abrasion by the application of a heavy-duty floor paint or other protective covering.

Where can AQUELLA be used?

In addition to the use of AQUELLA to control water seepage and dampness on the walls of buildings, AQUELLA is also used in swimming and wading pools, mine shafts, tunnels, fish ponds, underside and roofs of concrete canopies.

What is the covering power of AQUELLA?

Covering power necessarily varies with porosity of surfaces. The following is an average estimate:

On wire cut tapestry brick surfaces: 1st Coat: 60 to 70 sq. ft. per gal. 2nd Coat: 175 sq. ft. per gal.

On common brick surfaces: 1st Coat: 90 to 110 sq. ft. per gal. 2nd Coat: 250 sq. ft. per gal.

On other brick surfaces: 1st Coat: 100 to 120 sq. ft. per gal. 2nd Coat: 260 sq. ft. per gal.

On rough plaster and stucco surfaces: 1st Coat: 60 to 70 sq. ft. per gal. 2nd Coat: 200 sq. ft. per gal.

On poured concrete surfaces: 1st Coat: 90 to 130 sq. ft. per gal. 2nd Coat: 250 sq. ft. per gal.

On concrete blocks: 1st Coat: 110 to 130 sq. ft. per gal. 2nd Coat: 250 sq. ft. per gal.

On cinder blocks of rough aggregates: 1st Coat: 60 to 70 sq. ft. per gal. 2nd Coat: 200 sq. ft. per gal.

On cinder blocks of fine aggregates: 1st Coat: 100 to 120 sq. ft. per gal. 2nd Coat: 250 sq. ft. per gal.

How is AQUELLA packed and stored?

AQUELLA is available in one gallon moistureproof bags. AQUELLA will keep indefinitely when stored in a dry place in its original sealed container.

Remember AQUELLA will function effectively if

(1) *Applied on untreated and clean porous masonry surfaces in accordance with manufacturer's directions.*
(2) *Surfaces are properly wetted before and after application of each coat.*
(3) *Dampproofed and waterproofed surfaces are not pierced by means of screws, nails, toggle bolts and the like.*

For how long is AQUELLA effective?

We are frequently asked: "How long will AQUELLA be effective?" To this question we can only answer that AQUELLA was used in the Maginot Line in 1934 and is as effective today as when first applied! AQUELLA has been used in the United States since 1942 and there has been no failure when properly applied. Therefore, actual experience in the use of the product shows that AQUELLA is effective for a period of *not less* than 12 years.

Key to AQUELLA Specification Types (condensed)

Spec. PP-3

Dampproofing Work

Section No.....

DAMPPROOFING WORK
(short form)

1. SCOPE OF WORK

(a) The work under this Section shall consist of furnishing all labor, materials, equipment and appliances necessary and required to do completely all dampproofing work required by the Drawings and as specified herein, including, but not limited to the following:

(b) Dampproofing with one (1) coat of surface coating for dampproofing on the inside face of all exterior masonry walls above grade, including all reveals of doors, windows, fireproofing of columns, wall beams and other projecting members. Dampproofing shall extend 12" out on the underside of unexposed floor and roof slabs.

2. MATERIALS

Surface coating for dampproofing shall be a white powder composed of properly balanced inorganic ingredients approved by the Board of Standards and Appeal of the City of New York, known as Prima Products' "AQUELLA No. 1". Material shall be delivered to the premises in unbroken containers, plainly marked and labeled with the name of the manufacturer thereon.

3. WORKMANSHIP AND APPLICATION

(a) No dampproofing work shall be applied when the atmospheric temperature is below 40 degrees F.

(b) The Contractor shall use care in the application of all materials specified under this Section in order to protect any work which will be exposed in the finished work. Where such surfaces become smeared they shall be thoroughly cleaned.

(c) PREPARATION OF SURFACES—Surfaces required to receive surface coating for dampproofing shall be cleaned free from dirt, dust, loose particles, oil, grease, paint, or any other substance which would prevent the surface coating from keying or bonding with any affected surfaces. All holes or open joints shall be completely filled with mortar before application of surface coating.

(d) MIXING—Surface coating for dampproofing shall be mixed in full accord with the manufacturer's directions.

(e) APPLICATION—Method of application shall be in full accord with the manufacturer's directions.

Spec. PP-4

Waterproofing Work

Section No.....

WATERPROOFING WORK
(short form)

1. SCOPE OF WORK

(a) The work under this Section shall consist of furnishing all labor, materials, equipment and appliances necessary and required to do completely all waterproofing work required by the Drawings and as specified herein, including, but not limited to the following:

(b) Waterproofing with two (2) coats of surface coating material on all surfaces noted "W.S.C." on the Drawings. (Note to Architect — In lieu thereof state which interior and exterior porous masonry surfaces are to receive the waterproofing surface coating).

2. MATERIALS

Surface coating for waterproofing shall be a white powder composed of properly balanced inorganic ingredients, approved by the Board of Standards and Appeal of the City of New York, known as Prima Products' "Aquella No. 1" (for interior surfaces) and "Aquella No. 2" (for exterior surfaces). Material shall be delivered to the premises in unbroken containers, plainly marked and labeled with the name of the manufacturer thereon.

3. WORKMANSHIP AND APPLICATION

(a) No waterproofing work shall be applied when the atmospheric temperature is below 40 degrees F.

(b) The Contractor shall use care in the application of all materials specified under this Section in order to protect any work which will be exposed in the finished work. Where such surfaces become smeared they shall be thoroughly cleaned.

(c) PREPARATION OF SURFACES—Surfaces required to receive surface coating for waterproofing shall be cleaned free from dirt, dust, loose particles, oil, grease, paint, or any other substance which would prevent the surface coating from keying or bonding with any affected surfaces. All holes or open joints shall be completely filled with mortar before application of waterproofing surface coating.

(d) MIXING—Surface coating materials shall be mixed in full accord with the manufacturer's directions.

(e) APPLICATION—Method of application shall be in full accord with the manufacturer's directions.

Examples of the Nation-Wide Use of AQUELLA

Home at Fort Lauderdale, Florida
Aquellized inside and out

Artificial Pool — Memphis, Tennessee

Residence — Stockton, California

Residence — Fairfield, Connecticut

Examples of the Nation-Wide Use of AQUELLA

Fight Water

PLASTIMENT 1
CONCRETE DENSIFIER AND RETARDER

SIKA NO. 3A 2
INTEGRAL FOR CONCRETE AND MORTAR

SIKA NO. 1 3
INTEGRAL FOR CEMENT COATS

SIKA-KOTE 4
COATING FOR CONCRETE AND MASONRY

SIKA HARDENER 5
FOR SURFACE IMPREGNATIONS

SIKA-SEAL 6
BLACK PROTECTIVE COATING

SIKA IGAS 7
EXPANSION JOINT SEALER

SIKA CAULKING 8
GUN GRADE CAULKING COMPOUND

MAINTENANCE 9
PROBLEMS AND SOLUTIONS

SIKA PRODUCTS 10
CHECK LIST AND DESCRIPTION

Sika

SIKA CHEMICAL CORPORATION
MANUFACTURERS ▲ ENGINEERS
35 - 49 Gregory Ave. PASSAIC, N. J. Phone PAssaic 3-0607

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NEW CONSTRUCTION

Produce "concrete-with-a-plus" with PLASTIMENT. Why tolerate poor performance in concrete when a few pennies more spent for PLASTIMENT insures high quality? PLASTIMENT is a scientifically prepared integral compound. It prolongs the life of concrete through increased densification with resultant impermeability, through increased retardation of set and reduced water content with resultant shrinkage reduction, through increased strength with resultant cracking reduction. Concrete once poured cannot be improved. Therefore, for that "plus" in concrete specify PLASTIMENT, the Concrete Densifier for which there is no equal.

CONCRETE

1 For FLOORS *specify* PLASTIMENT

Concrete floors or mortor toppings dust due to cement accumulotion, scum ond surfoce laitonce. They foil through crocking or crazing coused by shrinkoge, insufficient strength or bond to steel. Injurious solutions cause scoling. Plastiment will overcome these defects. Tests and field installations prove thot Plastiment (a) increoses surface hordness between 25% ond 35%, (b) increoses flexurol strength 15% to 20%, (c) increoses odhesion to steel 30% to 100%, (d) increoses resistonce to injurious solutions 80% to 100%, (e) reduces shrinkoge 15% to 20%, (f) reduces obsorption 20% to 40%. Retorded set couses slower heat development, minimizes stresses and, therefore, crozing. The combinotion of these influences results in o superior concrete floor or mortor topping thot dusts considerobly less, resists obrosion, hos longer life ond durobility thon does untreoted or surfoce treoted concrete.

1 For SUB-STRUCTURES *specify* PLASTIMENT

Leaks through sub-surfoce concrete work ore coused by foulty construction joints, honeycombs, or porous non-uniform sections. Plostiment effectively helps to produce woter-tight concrete. It increoses workobility ond uniformity. It reduces scum ond loitonce formotion ond retords setting time. This eliminotes poor construction joints ond "cold" joints. Decreosed shrinkoge ond increosed strength reduces crocking. Increosed density prevents leokoge through concrete.

1 For PRE-CAST CONCRETE *specify* PLASTIMENT

Plostiment performs equolly well with light-weight or grovel or crushed stone oggregotes. Its fovoroble influence on oll properties of concrete results in precast products of high crushing strength, reduced obsorption, crazing, ond cracking. These charocteristics ore essentiol for concrete pipes, floor ond roof slobs, concrete mosonry units, lintels, columns ond the like.

2 For WATER-TIGHTNESS *specify* SIKA NO. 3A

The use of Siko No. 3A integrol woter-resisting compound is necessory where close control of concrete proportioning is impossible. Siko No. 3A is recommended for oll concrete in contoct with eorth, woter, or dompness. (On projects requiring more thon 200 cubic yords of concrete the use of Plostiment is odvisoble.)

Siko No. 3A will not only increose the plosticity of mortor or concrete but will improve ond occelerote the crystollizotion of cement. It will oct os an onti-freeze for concrete or mortor. The occeleroted rote of hordening mokes prolonged curing unnecessory. Increosed workobility of Siko No. 3A concrete results in greater uniformity. Less segregotion tokes plোce. Siko No. 3A permits o reduction in the woter-cement rotio, therefore it increases density, woter-tightness ond ultimote strength.

●***Specification:*** Mix oll concrete (specify where—in *contoct with eorth* or *exposed to woter or dompness*) with ot leost 5½ bogs of cement per cubic yord. Add Siko Chemicol Corporotion's SIKA NO. 3A liquid to concrete mix in proportion of 1½ gollons per cubic yord of concrete. Execute oll work in occord with Monufocturer's printed instollotion directions.

1 For TANKS, POOLS, etc., *specify* PLASTIMENT

Such structures ore usuolly thin-walled ond heovily reinforced. High odhesion to steel, low shrinkage, high density, ond resistance to injuriaus solutions ore important. Plostiment will considerably improve oll properties named. (See heoding: For FLOORS specify PLASTIMENT.)

The impermeability of Plostiment concrete reduces volume changes coused by olternate wetting ond drying. As o result of more uniform ond increosed odhesion to steel, less deformotion will occur under looding or unlooding stresses. Crock formotion is thereby reduced.

1 For STRUCTURAL CONCRETE *specify* PLASTIMENT

Plostiment is recommended for structurol concrete obove ond below grode such as columns, beoms, girders, exposed walls, slabs ond the like. Impermeobility of Plostiment concrete and uniform bond to steel prevents rusting of reinforcing ond resultont concrete spolling. Reduced shrinkoge ond high flexurol strength minimizes crocking. Higher uniform strength permits design of thinner members. This soves 'heod room ond weight.

●*Specification:* PLASTIMENT

DENSIFIER: Add Siko Chemicol Corporotion's PLASTIMENT reddish-brown, non-hygroscopic powder to concrete mix. Use in the following locotions: (specify where — *concrete floors or mortor toppings; foundotions; sub-surfoce concrete work; tunnel ond shoft linings;* pump *concrete; pre-cost concrete; tonks; swimming paols; settlement bosins; silos or other thin-wolled, heovily reinforced structures; structurol concrete, such os columns, slobs, girders, retoining wolls ond the like.)*

PLASTIMENT proportions: 1 pound per bog of cement, unless otherwise directed by Architect. Reduce woter quontity when odding densifier to obtoin some workobility os for ploin concrete. Execute oll work in occord with Manufocturer's printed instollotion directions.

SUPERVISION AND GUARANTEE

Siko Chemicol Corporotion will furnish ot nominol cost the services of experienced field engineers to supervise concrete instollotions contoining Plostiment or Siko integrol woter-resisting compounds. Where required, guorontee will be furnished covering the woter-tightness of such instollotions.

●***Specification:*** Controctor sholl orronge with Siko Chemicol Corporotion of Possaic, N. J. for supervision ond guorontee covering the woter-tightness of concrete in which Monufocturer's products hove been used. Controctor sholl notify Monufacturer not less thon 5 working doys before concrete is to be ploced. Contractor sholl follow the recommendations of Monufocturer's supervisor.

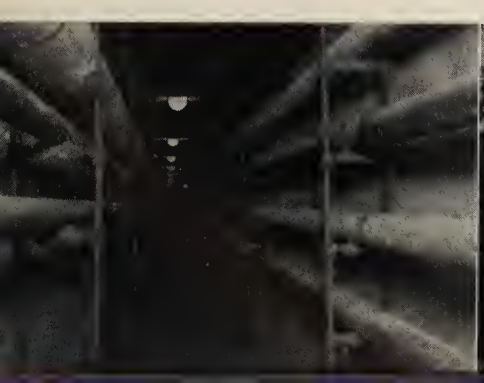
Contractor ond Monufocturer sholl guorontee the concrete to remoin woter-tight for o period of 5 yeors from the date of instollotion. This guorontee shall not be construed to hold the Monufocturer or Controctor responsible for leokoge coused by circumstonces beyond their control, such as leokoge coused by settlement, exponsion, controction, shrinkoge crocks, deteriorotion of concrete due to freezing, or domoge from excessive use or obuse of the structure, or coused by ony other circumstonces beyond their control.

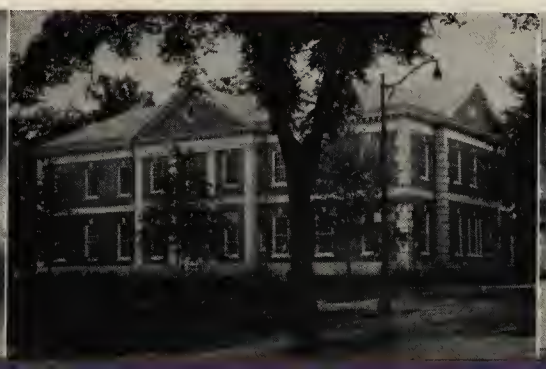
Contractor to supply lobor, Monufocturer to furnish supervision ond his moteriols without chorge to the owner to repoir ond moke woter-tight during the guorontee period any leoking concrete not due to circumstonces beyond their control.

STEAM TUNNEL, BOGOTA, N. J. Owner: George M. Brewster & Son. *Architect:* Voorhees, Wolker, Foley & Smith, New York. *Contractor:* Fronk W. Bogert, Hockensock. *Products:* PLASTIMENT in concrete, IGAS in joints.

JULIUS FORSTMANN LIBRARY, PASSAIC, N. J. Owner: City of Possoic. *Architect:* Hugh A. Kelly, Jersey City. *Contractor:* Fronk W. Bogert, Hockensock. *Product:* SIKA NO. 3A in sub-structure, woter-proofing guorontee ond supervision.

MAY COMPANY CRENSHAW STORE, LOS ANGELES, CALIF. *Architects:* Albert C. Mortin & Assoc., Los Angeles; Samuel A. Morx, Chicogo. *Engineers:* Perliter & Soring, Los Angeles. *Contractor:* Joshuo H. Morks Co. *Product:* PLASTIMENT in pump concrete for exteriar wolls ond sign wings.





MORTAR

3 For CEMENT COATS *specify* SIKA NO. 1

Sika No. 1 increases the water-tightness of mortar. It improves the crystallization of cement, fills voids, makes mortar water-repellent, and increases its adhesive properties. The decrease in absorption results in greater resistance to injurious solutions. One gallon of Sika No. 1 is required for 80 square feet of 1" thick woter-resistant cement coats or toppings.

● ***Specification:*** Apply water-resistant cement coots on (specify where — *inside of structures below grade; exterior surfaces of cinder or concrete masonry unit construction; surfaces subject to continuous water pressure; boiler, elevator or other pits*). Prepare surfaces by hacking, cleaning and moistening. Apply 1½" thickness on floors, ¾" thickness on walls in form of bonding, water-resisting and finishing coats. Gage mortar with solution of 1 part Sika Chemical Corporation's SIKA NO. 1 in 10 parts water. Execute all work in accord with Manufacturer's printed installation directions.

2 For MASONRY MORTAR *specify* SIKA NO. 3A

Pre-cast building units such as bricks, concrete, cinder and glass blocks should be laid in plastic water-resisting mortar. Sika No. 3A will increase fattiness and plasticity of the mortar, accelerate its setting time and aid curing. It permits faster construction and octs as an onti-freeze during cold weather. It reduces bleeding of the cement mortar, increases its water-tightness and early and ultimate strengths. The proportion used is varied depending upan the temperature. Standard portland cement, blends of portland with naturol cement ar lime, or masonry cement are used to equal advantage.

● ***Specification:*** Gage mortar (specify where — *brick, stucco, pargeting and the like*) with a solution of 1 part Sika Chemical Corporation's SIKA NO. 3A in not more than 12 parts water. Execute all work in accord with the Manufacturer's printed installation directions. (Add regular mortar specification for mortar composition and its manner of placing.)

SURFACE PROTECTION

4 For CONCRETE and MASONRY *specify* SIKA-KOTE

Siko-Kote will economicolly protect, decorate and preserve exterior and interior surfaces of concrete or masonry. Sika-Kote is a finely ground powder of cementitious nature manufactured in white or standard non-fading colors. Properly cured, Sika-Kote produces an eggshell-like finish free from dusting and flaking. It seals effectively against dampness. Two coats require approximately 1 pound of Sika-Kote for 10 square feet.

● ***Specification:*** Apply two brush coats of Sika Chemical Corporation's SIKA-KOTE (specify color) on masonry surfaces (specify where). Acid wash smooth surfaces. Properly patch imperfections. Saturate surface with water. Gage SIKA-KOTE powder with water to creamy consistency. Rub in first coat with a stiff fiber brush. Fill all pores. Paint the second coat on after the first coat has hardened. Keep work moist for two days. Execute oll work in accord with Manufacturer's printed installation directions.

5 To HARDEN SURFACES *specify* SIKA HARDENER

Sika Hardener is manufactured in crystal form and os o solution ready to use. It neutralizes free lime ond recrystallizes hydrated cement. It increases the resistance to injurious solutions. Two impregnotions require 1 pound or 1 gallon of Sika Hardener for 50 to 80 square feet.

● ***Specification:*** Harden concrete floors and mortar toppings (specify where — *include inside of tonks and other surfaces*) with two impregnations of Siko Chemical Corporotion's SIKA HARDENER. Mop solution liberally and uniformly on surfoces. Clean and dry surfaces to be treated before each impregnation. Execute all work in accord with Manufacturer's printed installation directions.

6 For DAMPPROOFING *specify* SIKA-SEAL

Sika-Seal forms a black, flexible, duroble film. It hos an excellent affinity for wet or dry concrete, mortar, steel and other metal or non-metal surfaces. Sika-Seal is not an emulsion. It protects against woter or inorganic solutions. It is recommended as a primer for Igas Joint Sealer. A reflecting, silvery finish results by mixing 2 pounds aluminum powder per gallon of Sika-Seal. One gallon of Sika-Seal is required for 50 to 80 square feet for 2 coats or for 300 lineal feet of joints, 1" x 2" in size.

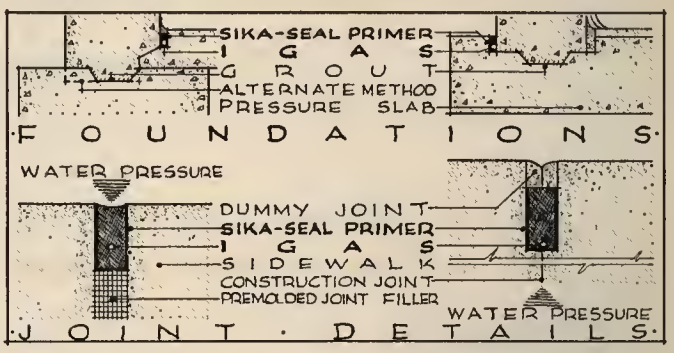
● ***Specification:*** Apply two brush coots of Sika Chemical Corporation's SIKA-SEAL on exterior masonry or concrete surfaces below grade (specify where — *include structural steel work, inside of tanks and the like*). Properly patch imperfections; cure surfaces. Rub in first coat with a stiff brush ta fill all pores. Paint the second coat on after the first one has dried. Execute oll work in accord with Manufacturer's printed installation directions.

JOINTS AND CAULKING

7 For JOINTS *specify* IGAS JOINT SEALER

Contraction and expansion joints are effectively sealed by the installation of Igas Joint Sealer. Igas is a durable, non-drying black mastic manufactured in knife grade consistency. It will not form a skin, sag at high temperatures nor become brittle due to cold weather or age. It is resistant to water and to almost all acids, alkalies and injurious solutions. The jaints ore first primed with Sika-Seal, then filled with Igas. In case of back pressure Igas is covered with cement mortar. One gallon of Igos is required for every 25 lineal feet of joints ¾" wide by 1" deep.

● ***Specification:*** Provide expansion and contraction joints (specify where — *basements, swimming pools, tanks, between sidewalks and buildings, in sidewalks, pavements, between sections of retaining walls, around pipes, bolts, steel beams and the like*) when pouring concrete. After curing, clean and dry cuts thus formed. Impregnate the lower holf of joints with Siko Chemical Corporation's SIKA-SEAL and fill with Sika Chemical Corporation's IGAS JOINT SEALER. Fill remainder of joint with cement mortar. Execute oll work in accord with Manufacturer's printed installation directions.



8 For CAULKING *specify* SIKA CAULKING

Sika Caulking is a durable gun grade compound. It is non-staining and forms a thin, tough skin on the exposed surface. It does not sag or become brittle. Sika Caulking is olso manufactured in colored grades to match adjacent work. Special types are gosoline and oil-resistant.

● ***Specification:*** Caulk all jaints around exterior windows, door and louver frames, sills and coping joints with Sika Chemical Corporation's SIKA CAULKING. Clean and dry joints befare caulking. Execute all work in accord with Manufacturer's printed installation directions.

SEE PAGE 4 FOR MAINTENANCE PROBLEMS AND SOLUTIONS AND FOR CHECK LIST ON PRODUCTS

LIBERTY TUBES, PITTSBURGH, PA. *Engineers:* Allegheny County Dept. of Public Works. *Contractor:* George Vong, Inc., Pittsburgh. *Products:* Joints sealed with quick-setting SIKAS and IGAS, Supervision and Guarantee furnished.

GLENSIDE SWIMMING POOL, CHELTENHAM TOWNSHIP, PA. *Engineer:* George Hesselbacher. *Contractor:* Township Forces. *Products:* IGAS JOINT SEALER, quick-setting Sikas, SIKA NO. 1.

BORG-WARNER CORPORATION, MUSKEGON, MICHIGAN PLANT. *Owner:* Norge Machine Products Division. *Own Engineers. Contractor:* Bitucrete Company, Detroit. *Product:* PLASTIMENT in floors.

LET SIKA SOLVE YOUR CONCRETE PROBLEMS

Sika Chemical Corporation's Field Engineers are experienced construction men with an intimate knowledge of current practices, competent to suggest the best and most economical solution to any waterproofing and dampproofing problem. Detailed specifications, information and sketches are available on problems of new construction and repair work. Our Engineering Department is at your service.

9 MAINTENANCE

PROBLEMS AND SOLUTIONS

TO SEAL LEAKS AGAINST PRESSURE

Leaks are easily and effectively sealed on the exposed side with quick-setting Sika mortar. It is not necessary to relieve the pressure. Sika No. 2 is used against heavy pressure or against bleeders, Sika No. 4A against seepage, Sika No. 3 under still water.

Small quantities of cement are mixed with the Sika liquids. The resulting quick-setting mortar is applied directly against the hacked, leaking concrete surface. Sika No. 3 and Sika No. 4A may be diluted with water and mixed with cement and sand. The setting time can be controlled thereby and slight seepage or dampness sealed effectively with such cement-sand mortar.

Neat cement mixed with Sika No. 2 will produce mortar with an initial set of 20 seconds, a final set of 30 seconds. Sika No. 3 and Sika No. 4A mortars have an initial set of less than 1 minute, a final set of less than 5 minutes.

After all leaks are dried with Sika No. 4A or in bad cases with Sika No. 2 mortar, protective Sika No. 1 water-resisting cement coats are applied. (See heading: For CEMENT COATS specify SIKA NO. 1 on preceding page.)

TO SEAL JOINTS OR CRACKS

Igas Joint Sealer will seal joints and cracks even against pressure and continual movement. Igas will not sag, dry out, become brittle, or lose its adhesion. Rigid cement mortar cracks and permits leakage when movement occurs, but Igas will expand and contract and thereby durably seal the joints.

Joints and cracks are cut out. If leaking, they are dried with quick-setting Sika mortar as outlined above. Sika-Seal primer is applied and the cut filled in layers with Igas Joint Sealer. Igas is left exposed where water pressure is exerted against the face of the joint, such as in sidewalks, inside of tanks and the like.

Covering with cement mortar is necessary where back pressure is anticipated, such as in tunnels, basements, retaining walls and the like.

TO REPAIR NON-LEAKING SURFACES

Work can often be done when water does not penetrate through surfaces to be sealed or when only dampness exists. The use of the quick-setting Sikas may then be omitted. When the surface is damp it is necessary to apply a bonding and one trowel coat with Sika No. 4A mortar. The work otherwise consists simply of the application of water-resistant Sika No. 1 mortar built up ¾" thick on the properly prepared walls and 1" to 1½" thick on the floors. A cove is formed of all corners and all work cured. (See heading: For CEMENT COATS specify SIKA NO. 1, on the preceding page). It is to be ascertained that walls, and particularly floors, are of sufficient strength to withstand any later developing water pressure that might cause cracking.

Existing cracks or joints are treated as explained above under the heading: TO SEAL JOINTS OR CRACKS.

The application of Sika-Kote instead of trowel coats prevents future penetration of moisture where no actual water pressure exists.

TO REPAIR THE OUTSIDE OF STRUCTURES

Brick, concrete, or masonry structures that develop leaks or disintegrate are effectively repaired using various methods.

Good results are obtained with stucco or gunite coats containing either Sika No. 3A or Gunite Sika. If desired, surface treatments may be applied in addition thereto. Satisfactory work is also obtained by cutting out and patching imperfections and applying Sika-Kote. This can be followed by impregnations of Sika Transparent, water-repellent liquid. This product is also used where the appearance of a brick building has to be preserved. For very porous brick work one coat of Sika Wax Emulsion should be given instead of Sika Transparent. Before impregnations start all joints are to be painted or slushed. Curing of all cement work is important. It is essential that all copings, window and door frames, sills and lintels are properly caulked with Sika Caulking, gun grade.

TO PLACE GUNITE OR PRESSURE GROUT

When guniting is done against leaking concrete, rock and the like or on structures exposed to the tides, the mortar has to set before water washes it away. With 6 pounds or over of Gunite Sika per bag of cement, the mortar will have an initial set of less than 1 minute and a final set of less than 10 minutes. Smaller proportions are used to increase the adhesion of gunite mortar to damp or dry areas and to increase its water-resisting qualities.

It is often necessary to accelerate the hardening rate of cement grout when foundations of dams, powerhouses, or rock adjoining tunnels or shafts are grouted to consolidate the sub-grade or to seal underground currents or washouts.

Sika No. 4 diluted with water will accelerate the set and in addition thereto increase the adhesion of grout to rock and the cohesion of the mortar so that it is not washed away.

To pressure grout fine fissures or where no running water occurs Plastiment is to be added to the grout to delay its set and to increase its penetrating power, strength and adhesion.

10 PRODUCTS

CHECK LIST

PLASTIMENT ***Reddish-brown Powder*** — Concrete densifier and retarder.

SIKA NO. 1 ***Yellow Paste*** — Integral for water-resistant cement coats.

SIKA NO. 2 ***Red Liquid*** — Quick-setting sealer for heavy pressure leakage.

SIKA NO. 3 ***Green Liquid*** — Accelerator for neat cement or mortar.

SIKA NO. 3A ***Yellow Liquid*** — Integral water-resisting plasticizer, accelerator and anti-freeze compound for concrete and masonry mortar.

SIKA NO. 4 (Grout-Sika) ***Brown Liquid*** — Accelerating, bonding, and oil-resisting compound for cement, mortar and pressure grout.

SIKA NO. 4A ***Pale Liquid*** — Quick-setting sealer for moderate pressure leakage.

SIKA CAULKING — Grey or colors. Gun grade caulking compound.

SIKA CLEAR COATING — Resinous impregnation for acid and alkali resistant floors.

SIKA HARDENER ***Crystals or Liquid*** — Surface impregnation for new or old concrete.

SIKA RETARDENT FORM COATING ***White Liquid*** — Delays setting adjacent to forms; eliminates hacking prior to surface treatments.

SIKA VINYL COATINGS ***Clear and Colors*** — Acid, alkali, oil, and corrosion resistant coating for floors, tanks, etc.

SIKA-KOTE ***Powder*** — Cementitious coating for concrete and masonry; white, colors.

SIKA-SEAL ***Black Liquid*** — Protective dampproofing coating and primer for concrete, masonry and steel.

SIKA TRANSPARENT (Conservado No. 5) ***Colorless Liquid*** — Water-repellent impregnation.

SIKA WAX EMULSION ***White Liquid*** — Water-repellent impregnation for porous masonry.

BINDA ***Powder*** — Tile-setting compound.

GUNITE SIKA ***Grey Powder*** — Accelerating and water-resisting compound for gunite mortar.

IGAS JOINT SEALER ***Black Mastic*** — Knife grade expansion and contraction joint compound.

KEMOX A ***Granules*** — Metallic Floor Hardener.

KEMOX B ***Fine Granules*** — Metallic compound for expanding, grouting and water-resisting mortar.

PLASTOCRETE ***Powder*** — Plasticizer for concrete or mortar.

SIGUNIT ***Gray Powder*** — Accelerator for pneumatically-applied mortar.

SIKA, IGAS, KEMOX, PLASTIMENT, PLASTOCRETE, BINDA, SIGUNIT and CONSERVADO, trademarks registered—United States Patent Office.

SIKA CHEMICAL CORPORATION

MANUFACTURERS ▲ ENGINEERS

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Sonneborn

building construction and maintenance materials

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SONNEBORN "BUILDING SAVERS" SERVICE AND DISTRIBUTION

The Sonneborn technical staff, as well as trained field representatives, will at all times be glad to assist in the solution of construction or maintenance problems involving: Wood Preservation and Finishing • Paints and Protective Coatings • Concrete Floor Treatment • Waterproofing and Dampproofing • Caulking and Roof Maintenance. Literature descriptive of any Sonneborn "Building Saver" is available on request. Prompt delivery and service are assured through conveniently located Sonneborn Distributors.

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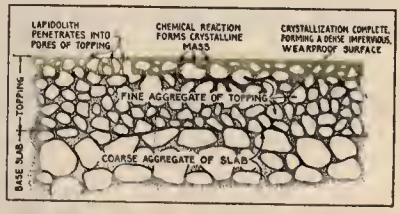
concrete floor treatments

Product	use and description	advantages	application data*
LAPIDOLITH	For hardening, wearproofing and dustproofing concrete and terrazzo floors, and vertical concrete surfaces. LAPIDOLITH is a colorless solution of low surface tension containing a chemically active concrete hardening agent. LAPIDOLITH penetrates into the concrete, reacts chemically with the free lime and calcium carbonate in Portland cement, and binds the loose particles into a close-grained, granite-hard, vitreous topping so that constant heavy traffic and trucking cannot tear the cement from its bedding. The LAPIDOLITH treatment is equivalent to the slow process of infiltration of mineral salts by which soft clays are petrified to the condition known as flint. Laboratory tests show that *Lapidolized* floors are substantially harder than untreated concrete floors, and are highly impermeable to the action of many oils and chemicals. *Patented for 100% Better Wetting Action and Penetration* LAPIDOLITH has a wetting action that is 100% better than that of other floor hardening solutions of the same concentration. This means deeper penetration, more thorough hardening. The higher wetting action assures a more effective reaction with the concrete because LAPIDOLITH reaches down into the tiny voids which ordinary hardeners cannot penetrate. This effective penetration overcomes the "blocking off" caused by surface reactions to which ordinary hardeners are subject. LAPIDOLITH is patented.  Magnified concrete section showing penetrating and hardening action of LAPIDOLITH.	• Wearproofs concrete and terrazzo floors for heavy-duty use. • Dustproofs concrete and terrazzo floors. • Protects concrete floors, walls and tanks against the effects of many chemicals, oils and greases. • Protects floors against the effects of alternate freezing and thawing. • Strengthens concrete wainscoting. • Easy to apply—no interruption of production schedules. • Hardens concrete floors containing iron filings or other special aggregates. • Provides excellent base for painting—neutralizes free lime content on concrete surface. • Economical—the first cost is the only cost. *Note:* LAPIDOLITH will not make a pitted floor smooth, color concrete floors, or cover floors with a film. Concrete floors treated with LAPIDOLITH may be painted with CEMCOAT F & D. (See page 8.) *Many Tests Prove Superiority of LAPIDOLITH* Actual laboratory tests—for Hardness, Wetting Ability, Penetration, Water-Permeability, Protection Against Oils, Protection Against the Effects of Alternate Freezing and Thawing, Maintaining the Light Reflectivity of White Portland Cement, Hardness of LAPIDOLITH vs. Metallic Filings — clearly demonstrate the effectiveness of the LAPIDOLITH treatment. Details of tests are available on request.	LAPIDOLITH is not intended for integral use. Three applications are necessary, as described below. New concrete must be thoroughly set and dry. *Uncolored Concrete Floors:* First Application: Prepare solution of one part LAPIDOLITH to two parts water. Flush solution on surface and distribute with a long-handled floor brush. Mop up any excess solution. Second Application: Prepare solution of one part LAPIDOLITH to one part water. Follow procedure as in first application. Third Application: Prepare a solution of two parts LAPIDOLITH to one part water. Follow procedure as in first application. After last application has dried, flush the floor with water and allow to dry for 24 hours. *Covering Capacity* *(These coverage figures are conservative estimates subject to variation depending on surface porosity and other job conditions.)* Type of Surface — LAPIDOLITH required for 3 applications Uncolored Concrete Floors* — 1 gal. per 100 sq. ft. Colored Concrete Floors — 1 gal. per 150 sq. ft. New and Old Terrazzo Floors — 1 gal. per 150 sq. ft. Vertical Concrete Surfaces — 1 gal. per 100 sq. ft. **On wood-floated or broom-swept floors only, if fourth application is necessary, apply it at rate of 1 gal. per 150 sq. ft.* *Complete directions available covering application to integrally colored concrete floors, residential floors, terrazzo floors, vertical concrete surfaces and wood-floated or broom-swept floors.*
FERROLITH H	FERROLITH H consists of a uniformly graded oxidizable metallic aggregate, a pozzuolanic agent and, if color is desired, an oxide pigment. When used in a Portland cement mix, the pozzuolanic agent reacts with the free lime in the cement, increasing workability, while the metallic aggregate becomes an integral part of the cement surface, producing a tough, metal-reinforced surface. Available in Standard (natural), Red, Brown, Green and Maroon.	• Hardens concrete floors. • Makes concrete floors resistant to grease, oils and alkalies. • Reduces the danger from sparking of static electricity. • Integrally colors concrete floors where color is desired.	FERROLITH H is applied to monolithic and two-course floors during the process of installation. *Covering Capacity* FERROLITH H Light traffic — 30 lbs. per 100 sq. ft. Medium traffic — 40 lbs. per 100 sq. ft. Heavy traffic — 50 lbs. per 100 sq. ft. Extra-heavy traffic and also for increasing electrical conductivity — 120 lbs. per 100 sq. ft.

***Application data is necessarily condensed. For complete directions, write or, if you have Sonneborn's Technical Service Portfolios, refer to specific product folder.**

Product	use and description	advantages	application data*
LIGNOPHOL Penetrating Finish	LIGNOPHOL Penetrating Finish is a clear, amber-colored liquid whose ability to withstand severe usage has made it the ideal wood treatment. The greatest advantage that LIGNOPHOL Penetrating Finish has over the usual surface treatments is its positive ability to penetrate into wood, depositing toughening resins, life-imparting oils and fungicidal chemicals which resist molds, fungi and wood-destroying organisms. Reports prove that LIGNOPHOL Penetrating Finish not only retards swelling and cupping of wood, but it resists moisture transfusion through the wood, improves compressive mechanical properties and greatly reduces decay. Available in Natural, Light Brown and Dark Brown.	● Is toxic to the fungus organisms to which wood is normally susceptible – mildew, dry and wet rot, etc. ● Contributes to the preservation of the original composition and elasticity of the living wood. ● Penetrates the wood both against and with the grain. ● Retards shrinkage, warping, cracking, curling and splintering. ● Saves time, effort, expense – only one application required. ● May be tinted with colors in oil for special effects. ● Leaves no film to wear off. ● Provides an excellent base for subsequent painting or waxing.	LIGNOPHOL Penetrating Finish is recommended as a preservative treatment for interior and exterior wood structures and prefabricated wood units, including plywood forms, sash, frames, siding, railings, outdoor furniture, ladders, etc. It is also used as a penetrating finish for floors subject to heavy duty in armories, gymnasiums, department stores, schools, institutions, factories, and similar buildings. Excellent for the following woods: Beech, birch, gum, maple, Masonite Presdwood, plywood. Coverage Hard Woods: 700 sq. ft. per gal., one coat Soft Woods: 600 sq. ft. per gal., one coat
LIGNOPHOL Quick-Drying Finish	LIGNOPHOL Quick-Drying Finish penetrates, preserves, seals and finishes interior wood floors in one quick-drying application. It leaves a satin gloss finish that highlights and enhances the natural beauty of the wood. LIGNOPHOL Quick-Drying not only is highly resistant to abrasion, chipping or cracking, but is practically impervious to the action of water and alcohol. Available in Natural and Brown.	● Saves time, effort and expense—only one application is required on most woods. ● Penetrates the wood both against and with the grain. ● Leaves no film to wear off. ● Preserves the original appearance and resiliency of the wood. ● Provides a surface which can be easily waxed. ● Is highly resistant to marring or scratching—does not lap or spot. ● Practically impervious to the action of water and alcohol.	LIGNOPHOL Quick-Drying Finish is recommended as a preservative and finish for interior wood floors where a quick-drying, satin gloss finish is desired, including residential and industrial buildings, offices, stores and similar installations where time limit for application is an important factor. Excellent for the following woods: Beech, birch, chestnut, cherry, gum, mahogany, maple, oak, pine. Coverage Hard Woods: 700 sq. ft. per gal., one coat Soft Woods: 600 sq. ft. per gal., one coat
LIGNOPHOL Wax Finish	LIGNOPHOL Wax Finish in one application adds beauty and distinction to residential wood floors and woodwork. This handsome wood finish does not cover up the natural beauty of the wood. Instead, it actually highlights the subtle appearance of the grain itself, increasing the attractive appearance of the wood. LIGNOPHOL Wax-Finished floors and woodwork are rich looking and have a dignity all their own. Available in Natural, Light Brown, Medium Brown and Dark Brown.	● Saves time, effort and expense—only one application is required. ● By its penetrative action it serves to an appreciable extent as a dampproofer. ● Leaves no superficial film to wear off. ● May be tinted with colors in oil for special effects. ● Provides a surface from which dust and dirt can be easily removed. ● Gives an exceptionally long-lasting finish. ● Easy to use—requires no thinning or special preparation.	LIGNOPHOL Wax Finish is recommended as a preservative and finish for doors, paneling and trim, and can be used on residential floors where a soft, medium gloss finish is desired. Excellent for the following woods: Beech, birch, chestnut, cherry, gum, mahogany, maple, oak, pine, plywood, Flexwood. Coverage Hard Woods: 700 sq. ft. per gal., one coat Soft Woods: 600 sq. ft. per gal., one coat

concrete and mortar admixtures

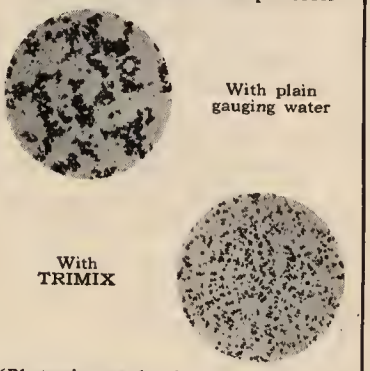
Product	use and description	advantages	application data*
TRIMIX	TRIMIX is a multi-purpose liquid admixture for concrete, mortar, stucco and cement plaster. TRIMIX makes the mix easier to prepare, handle, transport and place. It cuts construction time and cost by substantially reducing normal working time required to attain safe working strength. TRIMIX boosts compressive strength, increases durability and dimensional stability, provides smoother, finer finished surface texture. TRIMIX is an effective anti-freeze—speeds and facilitates laying, pouring, and handling of cement mixes during sub-freezing weather. TRIMIX offers equal advantages when used in ready-mixed concrete. Scientifically formulated to overcome many uncertain human factors usually present on construction jobs, TRIMIX has proved its efficiency in actual construction for many years.	• Improves workability of mix. • Accelerates set — produces high early compressive strength. • Improves quality of finished concrete. • Aids winter concreting. *How TRIMIX Increases Cement Dispersion*  With plain gauging water With TRIMIX *(Photomicrographs by reputable independent laboratory)*	TRIMIX is added directly to gauging water. Quantities recommended are predicated on withholding about 15% of the amount of gauging water normally required. *Quantities Required:* For reduction of water ratio; for high early strength; for improved workability and homogeneity; for more thorough curing; for set acceleration; for reduction of bleeding and laitance; and for integral hardening — 1 quart TRIMIX per bag of cement. For mortars containing lime—1 quart TRIMIX per bag of lime in addition to amount required per bag of cement. For improving bonding efficiency of concrete floor topping to base slab, and of Portland cement stucco to masonry walls—1 part TRIMIX to 20 parts water. As an anti-freeze—1½ quarts TRIMIX per bag of cement at 25°F., and an additional ½ quart with each 5°F. drop in temperature.
HYDROCIDE Admixtures	HYDROCIDE Admixtures (Paste and Powder) are especially formulated to aid in the protection of mass concrete in below-grade construction such as swimming pools, foundations and basement walls, and in above-grade structures such as retaining walls and storage tanks. They are also used as mortar admixtures to obtain tighter joints on brick, stone and glass-block wall construction. HYDROCIDE Paste is a colloidal, non-settling suspension of stearates. When added to concrete mixes, it reacts with the free lime, producing a water-repellent metallic soap. As the concrete sets, this water-repellent compound is deposited in the internal pores of the concrete, decreasing porosity and lessening the possibility of entrance and transmission of water. HYDROCIDE Powder is a dry mixture of calcium stearate and lime-reactive finely powdered aggregate. When added to a dry concrete mix, it coats the sand and aggregate components with water-insoluble calcium stearate, lines the internal pores and capillaries, and imparts a negative water capillarity to the finished concrete.	• Help to maintain a dimensionally stable concrete structure. • Minimize the danger of cracking and spalling. • Reduce free lime content. • Increase water impermeability of concrete by decreasing water absorption. • May be used with cements containing air-entraining agents.	HYDROCIDE Paste is first diluted by the addition of an equal volume of gauging water. When thoroughly dispersed, it is added to cement mix containing remainder of gauging water. HYDROCIDE Powder is dispersed in dry mix before adding gauging water.

Table for Estimating Quantities of HYDROCIDE Admixtures

	100 sq. ft., 1 in. thick		One Cubic Yd.		100 Cubic Ft.	
	HYDROCIDE Admixture	Bags of Cement	HYDROCIDE Admixture	Bags of Cement	HYDROCIDE Admixture	Bags of Cement
1:2:3 Concrete	2 lbs.	2	7 lbs.	7	26 lbs.	26
1:2:4 Concrete	2 lbs.	1¾	6 lbs.	6	22 lbs.	22
1:2 Floor Finish	4 lbs.	4	12 lbs.	12½	46 lbs.	46
1:3 Brick Mortar	3 lbs.	3	9 lbs.	9½	35 lbs.	35
1:2 Plaster Coat	4 lbs.	4	12 lbs.	12½	46 lbs.	46
1:3 Stucco	3 lbs.	3	9 lbs.	9½	35 lbs.	35

(For each bag of lime used, add 1 lb. of HYDROCIDE Paste or Powder.)

***Application data is necessarily condensed. For complete directions, write or, if you have Sonneborn's Technical Service Portfolios, refer to specific product folder.**

Product	use and description	advantages	application data*
HYDROCIDE Colorless	HYDROCIDE Colorless is a transparent non-staining water-repellent compound which, when applied to a structurally sound exterior concrete or masonry surface above grade, soaks into and fills the internal pores and voids with water-repellent agents, sealing the surface with a protective, invisible film. Two consistencies: HYDROCIDE Colorless D for highly porous light colored surfaces: concrete, sandstone, stucco, Indiana limestone, asbestos cement board. HYDROCIDE Colorless G for relatively dense surfaces: red brick, limestone, colored natural stone and colored stucco.	● Acts as preservative for old masonry. ● Reduces danger from effects of freezing and thawing. ● Helps preserve original appearance of exterior walls. ● Minimizes absorption of dust, soot and stains. ● May be applied in warm or cool weather, but not below 40° F. ● Easy to use—economical.	Brush or spray, working from top down. Surface must be clean, thoroughly dry, and structurally sound. Best results are obtained at temperatures above 40° F. HYDROCIDE Colorless G should be applied in two coats, the second after the first is dry. HYDROCIDE Colorless D requires only one coat. *Coverage*—100 sq. ft. per gal., one coat. 150 to 200 sq. ft. per gal., second coat, depending on character of surface.
FERROLITH W	FERROLITH W is a uniformly graded, oxidizable metallic powder designed for metallic reinforcing of interior and exterior concrete and masonry surfaces above grade, and interior surfaces below grade, including walls and floors in tunnels, mines, dams, etc.	● Helps to prevent cracking and spalling. ● Reinforces extremely porous surfaces. ● Increases resistance of concrete and masonry to various alkalies, oils and greases.	Three brush coats are necessary where normal, constant hydrostatic pressures are encountered. *Coverage*—40 lbs. per 100 sq. ft., 3 brush coats, depending on character of surface.

NOTE. The following HYDROCIDE COATINGS are quality bituminous compounds (free of coal tar) for treating specific conditions of dampness affecting building surfaces, interior and exterior, above and below grade. In some cases, aside from their plasterbond functions (not with Portland cement mixes) HYDROCIDE COATINGS are also used for stonebacking and as protective or, as they are known in the trade, dampproof coatings. When used for this purpose, HYDROCIDE COATINGS provide protection only if the building is structurally sound and so long as the coating remains intact and continuous.

HYDROCIDE Mastic	A heavy fibrated asphalt compound for use on exterior porous surfaces below grade, and interior surfaces above grade.	● Equal in efficiency to conventional 5-ply membrane system. ● Ready to use—requires no heating or thinning. ● One coat is sufficient.	Trowel only. One coat. Surface must be clean and dry. *Coverage*—100 sq. ft. per 4 to 5 gals., depending on character of surface.
HYDROCIDE Semi-Mastic	Semi-fibrated asphalt compound for interior surfaces above grade, exterior surfaces below grade, and as plasterbond. Superior to lighter dampproofing materials of paint-like consistency.	● Equal in efficiency to conventional 3-ply membrane system. ● Ready to use—requires no heating or thinning.	Brush or spray. Surface must be dry. Allow first coat to dry 24 hours before applying second coat. *Coverage*—30 to 35 sq. ft. per gal. per coat, depending on character of surface.
HYDROCIDE 600	A non-settling bituminous emulsion containing not less than 55% asphalt. For damp walls—interior above grade, and exterior below grade.	● May be applied to wet or dry surfaces. ● Can be freely reduced with water, without separation. ● Non-inflammable.	Brush or spray. Moisten surface with water. Thin first coat 10% with water and apply second coat undiluted. Allow first coat to dry 24 hours before applying second coat. *Coverage*—75 to 100 sq. ft. per gal., one coat, depending on character of surface.
HYDROCIDE 633	A non-fibrated black compound for interior dense surfaces above grade, and as plasterbond. Dries to a tacky, elastic film. Permits plastering as early as two days or as late as 28 days after application.	● May be used with or without furring strips. ● Remains tacky for an exceptionally long period.	Brush or spray. Coating should be continuous and absolutely free of pinholes or other breaks. Allow first coat to dry 24 hours before applying second. *Coverage*—75 to 100 sq. ft. per gal., one coat, depending on character of surface.

waterproofing, dampproofing, caulking

Product	use and description	advantages	application data*
HYDROCIDE 648	A non-fibrated asphalt coating. Provides stainproof backing for building stones set in cement. Also used as protective coating against dampness on exterior foundations below grade.	• Not affected by lime and water-soluble salts in cement. • Withstands temperature changes without cracking or losing continuity.	Brush or spray. Apply to dry surfaces only. Allow first coat to dry 24 hours before applying second coat. For stone-backing, one coat is required. Do not handle stone until coating is dry. Coverage—Stonebacking: 125 to 175 sq. ft. per gal., one coat. Other uses: 75 sq. ft. per gal., first coat; about 125 sq. ft. per gal., second coat. (Depending on character of surface.)
HYDROCIDE 700	An emulsified mastic compound for protecting exterior surfaces below grade against dampness. When HYDROCIDE 700 is applied to any concrete, masonry or stone surface below grade, it bonds to the surface and produces an elastic, membrane-like coating that is resistant to penetration of moisture from soil.	• Ready to use—requires no heating or thinning. • Adheres firmly to damp surfaces. • Equal in efficiency to conventional 5-ply membrane system.	Apply cold with trowel in 1/16" continuous coating without breaks or pinholes. Moisten surface prior to application. Do not apply at temperatures below 40°F. Backfill may be made 48 hours after application. Avoid injury to film while backfilling..
KAUKIT	KAUKIT is a quality caulking compound formulated for efficient protection and long-lasting adhesion to any surface—wood, metal, glass, concrete, stone, oakum or similar fibrous filler. Remains elastic underneath its tough, weather-resisting surface film. Expands and contracts with temperature changes. Does not sag, slump or run out of vertical or inclined joints. Gun and knife grades; also cartridges. Colors: Natural, Gray, White and Black.	• Easily workable—makes placement work easier, • Will not turn brittle or harden, like putty. • Color-fast—KAUKIT colors will show little or no fading after long periods of use. • Can be painted over.	Rake and clean out up to ¾" all openings, cracks, crevices to be caulked. Fill in with KAUKIT and thoroughly compress compound into openings. Coverage—Gun Grade: 150 linear ft. per gal. Knife Grade: 225-350 linear ft. per gal. Cartridges: 15 linear ft. per cartridge. (Based on joints of average depth and width.)

paints and protective coatings

MARVELWITE Enamel and Semi-Gloss	Synthetic white coatings specially designed for industrial interiors. Withstand heat, corrosive fumes and vapors. Contain synthesized oils which are highly resistant to yellowing, and pigments of high tinctorial strength and maximum color retention. Retain initial whiteness and gloss for unusually long periods. Available in two types: MARVELWITE T — a high-gloss enamel; MARVELWITE S—a semi-gloss paint. For priming: MARVELWITE Undercoat, a Sonneborn pigmented primer-sealer.	• Stay white—highly resistant to yellowing and loss of gloss. • Withstand effects of moisture, heat (up to 200°F.), chemical fumes and vapors. • Possess high light reflection and diffusion values. • High opacity—one coat covers any reasonably clean painted surface. • Washable—do not streak or discolor. • Resistant to oils and greases.	Brush or spray. New or unpainted surfaces should be clean and dry. On wood surfaces, apply two coats of MARVELWITE Undercoat, then finish coat of MARVELWITE T or S. Eliminate second priming coat when painting metal surfaces. On previously painted surfaces, wire-brush to remove loose particles, sand and apply one or more coats of MARVELWITE T or S. Dark colored or badly worn surfaces should be primed with MARVELWITE Undercoat before application of MARVELWITE T or S.
CEMCOAT Enamel Gloss	A specially processed enamel coating for all interior surfaces. Remains uniformly attractive longer. Leaves a tough, smooth finish that is highly resistant to steam and moisture. White only. May be tinted to any shade by adding colors in oil.	• Dries to an even-textured film overnight. • Retains color longer without yellowing. • Easily washable without streaking. • Can be applied over surfaces previously painted, whitewashed, or coated with cold-water paint.	Brush or spray. Two coats generally recommended. Surface must be clean and thoroughly dry. Coverage—Sq. ft. per gal., one coat: Brick and Concrete—250; Plaster—300; Wood—350; Metal—400.

***Application data is necessarily condensed. For complete directions, write or, if you have Sonneborn's Technical Service Portfolios, refer to specific product folder.**

Product	use and description	advantages	application data*
CEMCOAT Interior Flat	A decorative oil-base coating for all walls and ceilings, including cement, brick, plaster, wood, wallboard and metal. Free of gums. Dries to a smooth, even-textured film without crazing or checking. White only. May be tinted to any shade by adding colors in oil.	● Better light reflection. ● High opacity. ● Free flowing—holds a wet edge, minimizing danger of lapping.	Brush or spray. Surface must be clean and thoroughly dry. One coat is usually sufficient on properly primed surfaces. *Coverage*—500 to 600 sq. ft. per gal., one coat.
WONDERCOTE	An oil-base paint of semi-paste consistency which primes, seals and finishes most interior surfaces in one application. Applicable to brick, concrete, plaster, wood, calcimine, wallpaper. Gives controlled penetration. Sets solidly in one hour. Dries to a velvet-like angular sheen in about eight hours. Greater resistance to lime than conventional paints. White only. May be tinted to any shade by adding alkali-resistant colors in oil.	● Saves 47 to 64% in materials alone as compared to conventional two and three-coat systems. ● Exceptional hiding power—good leveling. ● Will not streak, crawl or become spotty under reasonable temperature changes. ● Can be extended to provide 37½% more paint by thinning.	Brush or spray. Surface should be clean, free of dirt, oil and loose particles. Loose paint should be removed with wire brush, scrubbing or sanding. Surfaces which require washing must be permitted to dry out thoroughly before painting. WONDERCOTE may be satisfactorily sprayed when reduced with three pints of mineral spirits or turpentine to the gallon. *Coverage*—600 to 700 sq. ft. per gal., one coat.
HIDE-N-SEAL	An efficient interior primer and sealer with controlled penetration and effective sealing action. Brushes easily, dries tough and hard with high opacity and excellent sealing qualities over porous surfaces. For use on plaster, cement, brick, wood, wallboard and Celotex.	● Dries to a smooth, uniform film overnight. ● Does not drag when brushed. ● Is not absorbed—penetrates sufficiently to give a positive seal.	Brush or spray. On extremely porous surfaces, two coats may be necessary. *Coverage*—400 to 500 sq. ft. per gal., one coat.
CEMCOAT Exterior Flat	A flat paint of exceptional hiding power designed to give maximum exposure service. Withstands heat, cold, salt water spray, wind and sleet. For cement, brick and stucco surfaces. White only.	● Exceptional hiding power. ● Retains color-fastness for long period of time.	Brush or spray. Allow to dry thoroughly 24 to 36 hours, depending on weather conditions. Second coat should be applied without reduction. *Coverage*—150 to 200 sq. ft. per gal., two coats.
S. R. P. "Sure Rust Prevention"	A specially formulated rust-inhibitive coating designed to prevent rusting of old or new metal surfaces, indoors and out. Penetrates through and combines with previously formed rust to form a firm, lasting bond with the clean metal beneath. Non-toxic. Resistant to the action of chemical vapors, moist air and salts in normal industrial concentrations. Two consistencies: Primer and Finish. Colors: S. R. P. 75 (primer)—Red only. S. R. P. 87 (finish)—Red, Black, Gray, Light Green, Medium Green, Light Red and Aluminum.	● Superior in rust inhibitive efficiency and chemical resistance. ● Non-toxic—eliminates red lead painting hazards. ● Firm rust need not be removed. ● Easy to apply—no expensive preparation is needed.	Brush or spray. Remove all loose rust scales. Firm rust need not be removed. Allow priming coat (S. R. P. 75) to dry thoroughly before applying finish coat (S. R. P. 87 in color as selected). *Coverage*—500 to 600 sq. ft. per gal., one coat.

paints and protective coatings

Product	use and description	advantages	application data*
SONOLASTIC Aluminum Paint	A high-quality aluminum coating which provides maximum brilliance, better leafing and greater penetration into subsurface. Specially formulated vehicle enables this coating to resist moisture, corrosion, chemical fumes, gases and vapors. For interior and exterior surfaces where temperatures do not exceed 200°F.	• Ready to use—needs no special preparation. • Better leafing assures continuity, uniformity of film and absence of pin-holes. • Retains leafing qualities even after prolonged storage.	Brush or spray. Surface must be cold, clean, dry and free of dirt, grease, loose paint scales or rust. *Coverage*—300 to 600 sq. ft. per gal., one coat. (For metal surfaces subject to heat up to 600° F. use Sonneborn's Heat-Resisting Aluminum Paint.)
SONOLASTIC Asphalt Paint	A heavy duty, weather-resistant coating recommended for wood, metal, concrete, brick and masonry surfaces. Entirely free of coal tar. Will not sag or crawl in hot weather or crack in cold. Colors: Black, Red, and Green.	• Highly resistant to acids, alkalies, gases, moisture, smoke, chemical fumes, salt sea air and the actinic rays of the sun. • Dries to a smooth, glossy finish in about 15 hours. • Can be applied over all roofing except coal tar.	Brush only. Do not apply over fresh tar surfaces or to surfaces subject to frequent handling. Surface must be dry, clean and free of all rust scales or loose paint particles. *Coverage* Metal: 400 sq. ft. per gal., one coat. Wood and Concrete: 300 to 350 sq. ft., per gal., one coat.

other floor treatments

CEMCOAT F & D	A specially formulated oil-base filler and dustproofer for cement and wood floors. A floor and deck enamel of superior quality. Protects and decorates. Gives maximum penetration. Bonds firmly to the surface, giving a finish that is exceptionally colorful, tough and long-lasting. Unaffected by transient contact with acids, oils or other chemicals when properly maintained. Ideal for dado painting. Available in Transparent and the following colors: Black, Battleship Gray, G. M. Gray, Maroon, Dark Brown, Green, Brick Red, Gray, and Autumn Brown.	• Sanitary—provides a surface from which waste, dirt and dust are easily removed. • Dries to bright, colorful finish overnight. • Flows freely—spreads easily. • Affords a high degree of resistance to abrasion. • Offers planned system for economical maintenance of finish on aisles, corridors, stair treads and areas subject to unusually heavy traffic.	Brush or spray. New concrete floors should not be painted until thoroughly dry. Old concrete floors must be dry, free of dust, dirt, loose particles, oil and grease. Aisles, corridors and stair treads can be treated with a mixture of colored and Transparent CEMCOAT F & D. *Coverage*—500 sq. ft. per gal., one coat. 275 sq. ft. per gal., two coats. (Depending on porosity of surface.)
HYDROCIDE Curing Compound	Ready-to-use concrete curing compound. Prevents rapid evaporation of water content from freshly laid concrete during initial hardening period. Produces better, more efficient cure.	• Maintains proper water-cement ratio throughout setting cycle. • Permits attainment of maximum strength of concrete. • Contributes to complete hydration of Portland cement particles.	Spray or brush. Should be applied as soon as concrete has reached its initial set and after surface water has disappeared. For poured concrete, apply as soon as forms have been removed. *Coverage*—250 sq. ft. per gal.
FLOORLIFE 69	A high-gloss wood floor varnish that seals and finishes in the same application. Produces a long-wearing gloss finish. Serves as excellent base for waxing. Dries to a hard film that is extremely durable and serviceable. Withstands more than ordinary wear.	• Dries dust-free in about five hours. • Can be colored with oil-soluble dyes for staining effects. • Flows easily—spreads smoothly—self-leveling. • Will not whiten on contact with water.	Use long-handled varnish brush or lamb's wool applicator. Surface should be dry and free of stains or foreign matter. If two coats are necessary, reduce with 20% turpentine or mineral spirits. *Coverage*—500 sq. ft. per gal., first coat; 600 sq. ft. per gal., second coat.

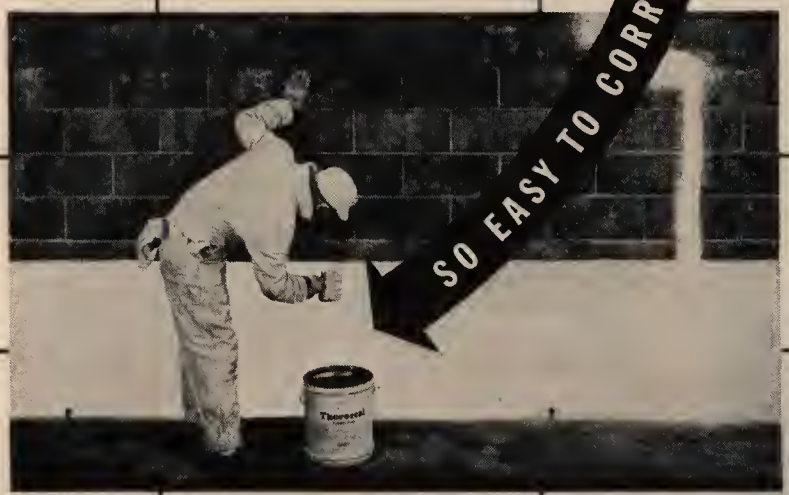
***Application data is necessarily condensed. For complete directions, write or, if you have Sonneborn's Technical Service Portfolios, refer to specific product folder.**

BP 6016

Printed in U. S. A.

The **THORO** *System*

INTERIOR AND EXTERIOR SURFACE WATERPROOFING



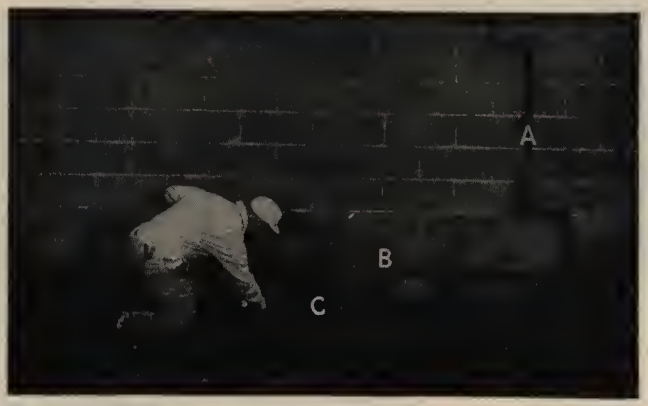
Waterplug
to stop the leaks

Thoroseal
to fill and seal the surface

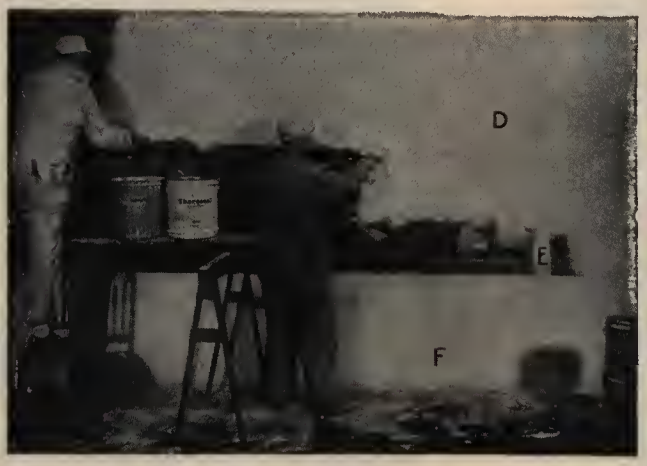
Quickseal
for a beautiful finish

Standard Dry Wall Products Inc.

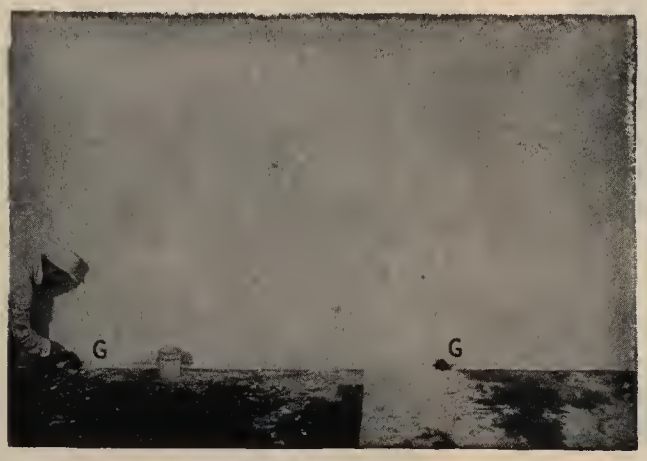
Waterplug · Thoroseal · Quickseal



Point A locates settlement crack which has been sealed with WATERPLUG. Point B, defective joints have been sealed. Point C, angle where floor and walls meet, being sealed by workman.



Point D, THOROSEAL applied as base application. At Point E, THOROSEAL has been applied over sealed crack. Point F, THOROSEAL applied over wall surface.



Point G, weep holes left by the applier are being plugged with WATERPLUG.

Waterplug

QUICK-SET COMPOUND. When water is entering through masonry to usable spaces below grade, the following procedure should be followed. With chisel and hammer, open all cracks, defective mortar joints and point where floor and walls meet. Mix WATERPLUG as directed by the manufacturer and fill these points, where active water enters at time of application, making all points watertight. Point A, a settlement crack, as shown in photograph on cover page, has been sealed with WATERPLUG. Point B, defective joints, where water had been entering, have been sealed. Point C, the angle, where floor and walls meet, is being sealed by the workman, while water is active.

Thoroseal

THOROSEAL base application is being applied to a manufactured block wall and is the same section of wall as shown in photograph 1. The depth of the wall is eleven feet and there was considerable pressure. At Point D, THOROSEAL is applied 2 lbs, to each square yard on the upper section of wall, as a base application, to fill and seal the surface. At Point E, THOROSEAL has been applied over the sealed crack where active water had been entering. At Point F, THOROSEAL has been applied over the wall surface to a height of two feet above the floor; 4 lbs. per square yard were applied to section F, to withstand a varying high water pressure, at times. A second application of THOROSEAL was applied over section F as the workmen came down over the wall with their applications. THOROSEAL may be applied as a finish coat, but a THOROSEAL finish is more abrasive and rougher in texture than QUICKSEAL (Finish Coats). Following is a schedule of material to specify at various depths below grade.

When applied with trowel, THOROSEAL is finished as any other plaster and is not affected by water or dampness after application. We recommend the following applications for purposes named.

1. *For ordinary water pressure after rains and dampness.*
   7 ft. below grade — 3 lbs. per sq. yd., 2 brush coats
   8 ft. below grade — 4 lbs. per sq. yd., 2 brush coats
   9 ft. below grade — 5 lbs. per sq. yd., 3 brush coats
   10 ft. below grade — 6 lbs. per sq. yd., 3 brush coats
   In every case, apply a heavy coat and extra THOROSEAL from the floor up wall, at least 18″ to 2′0″, thinning the applications with less material from this point to ceiling, where 1½ to 2 lbs. would be sufficient.
2. *For constant water pressure.*
   7 ft. below grade — 8 lbs. per sq. yd., 1 brush and 1 trowel coat
   8 ft. below grade — 10 lbs. per sq. yd., 1 brush and 1 trowel coat
   9 ft. below grade — 12 lbs. per sq. yd., 1 brush and 1 trowel coat
   10 ft. below grade — 15 lbs. per sq. yd., 1 brush and 1 trowel coat
3. *For sealing joints and defects in masonry and as a base for colored materials on the outside, above grade.*
   1½ lbs. to 2½ lbs. per square yard, depending on surface conditions and depth of joints.

Quickseal

QUICKSEAL is prepared to sanitize and control extreme moisture and dampness or as a finish coat over THOROSEAL base applications. When used as a finish coat over THOROSEAL, 1 lb. per square yard is recommended and is sufficient.

At Point G, in the photograph, weep holes left by the applier are being plugged with WATERPLUG, after all other wall surfaces have been completed.

In this photograph, QUICKSEAL has been applied over THOROSEAL as a finish coat.

QUICKSEAL may be used in two applications to dampproof a wall, without THOROSEAL base applications, if the wall surface is smooth and needs very little filling.

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The THORO System

ESTABLISHED 1912
INCORPORATED 1931

WATERPLUG, THOROSEAL, QUICKSEAL, and allied materials comprise the nationally-known and favorably-accepted method of masonry maintenance and waterproofing of masonry surfaces.

Through the intervening 35 years, trials, tests and changes have been made, to reach perfection.

Today, we supply to the construction industry products of such merit and efficiency as have become generally recognized as being ideal for the function for which they were originally designed.

WATERPLUG

A hydraulic cement which stops water instantly when running, seeping or leaking through masonry walls and floors.

WATERPLUG is the original, pioneer sealing material which has a fast-set, nonshrink action, with the quality of stopping active water pressure and even large streams of water applied against pressure.

WATERPLUG was discovered, and the THORO System of using it was perfected, by those in our present organization, whose ideas and methods originated in the United States of America.

THOROSEAL, in conjunction with WATERPLUG, is the material to use in sealing and thereby waterproofing any concrete or other masonry surface.

THOROSEAL is the nationally-known and favorably-accepted brush application and base coat material for sealing, sanitizing, and protecting any interior, exterior, above- or below-grade masonry surface to which applied.

THOROSEAL requirement per square yard is 2½ to 3½ pounds, applied by brush, in two or more applications or until a minimum of 2½ pounds per square yard is on the wall.

THOROSEAL, aside from Standard Gray and White, is prepared in several attractive colors, and can be applied to rough or smooth masonry surfaces, in any desired texture.

QUICKSEAL, either Standard Gray or selected color, is the finer, smoother, finish application and is applied in same manner as THOROSEAL, by brush. The requirement per square yard for the finish application is less than 1 pound or, as a maximum, 1 pound per square yard, when THOROSEAL (Base Coat) is used to fill and seal the surface. QUICKSEAL has the quality of further adding to beauty, attractiveness and a more uniform finish, as well as possessing efficiency as a dampproofing.

SNOW WHITE, a specially-prepared finish material, when applied over a base application of WHITE THOROSEAL, gives a delightful mat-textured finish, pleasingly white and restful, without glow or glare from sunlight.

THE CYCLE OF CONTENTMENT IN OUR SURROUNDINGS IS EVER-CHANGING

As shown in before and after photographs below, a high type Stucco House is being protected with SNOW WHITE.

Interior plaster and paintings will be protected from water and dampness.

All Masonry Surfaces Need Protection

FACTORY · PUBLIC BUILDING · RESIDENCE

Foundation walls of the above homes waterproofed by The Thoro System—built by the Wm. J. Mitchell Organization, Cleveland, Ohio.

SPECIFICATION FOR THE WATERPROOFING of all exterior surfaces of block, brick or tile foundation walls subject to water pressure. A cement plaster coat, one-half inch thick, shall be applied over all the below-grade, exterior surfaces, using a mix of one part cement to two and one-half parts sand. Immediately after completing the cement plaster application, a carefully-applied brush coat of THOROSEAL, averaging 2 pounds per square yard, shall be made over all the plastered surfaces.* *

ALTERNATE — Two carefully-applied brush coats of THOROSEAL, averaging 4 pounds per square yard, shall be made over all below-grade, exterior surfaces of the foundation walls, down to and including the top of the footings.* *

SPECIFICATION FOR THE WATERPROOFING of all poured concrete foundation walls subject to water pressure. Upon removal of forms, any excess form oil, remaining on the concrete surfaces to be waterproofed, shall be removed, washing with a mild muriatic acid solution, if necessary. With the surfaces thoroughly cleaned, two brush coats of THOROSEAL shall then be applied to all exterior surfaces below grade, averaging 4 pounds THOROSEAL per square yard for both coats. Care should be exercised to assure thorough sealing of the surfaces down to and including the junction of the walls and footings.* *

McGildrey Hall, Kent State University, Kent, Ohio. H. A. Fulton, Architect, Cleveland, Ohio; Carmichal Construction Company, General Contractor, Akron, Ohio. All below-grade walls waterproofed by The Thoro System.

VaBar *Vapor Barrier · Plaster Bond*

SPECIFICATION for the dampproofing of interior surfaces of all exterior plastered walls, above or below grade. All interior surfaces of exterior walls to be plastered shall be thoroughly cleaned, making sure that all excess mortar is removed and repointing done where necessary. After thorough preparation, a brush coat of VaBar shall be applied over all these surfaces to be plastered, averaging 3 pounds VaBar per square yard. Plastering may proceed at any time after completion of the VaBar application. Curing period of several days is permitted.* *

* * Mixing and application of all Thoro System materials shall be in accordance with the written specifications furnished by Standard Dry Wall Products, Inc.

Oakville School, Mayfield Heights Village, Ohio. H. A. Fulton, Architect, Cleveland, Ohio. All above-grade, exterior plastered walls protected by VaBar, another Thoro System Product.

STANDARD DRY WALL PRODUCTS, INC.

NEW EAGLE · PENNSYLVANIA

R.I.W.

REG U S PAT OFF

TOCH

Dependable, Protective Coatings and Compounds for

WATER-RESISTANCE

DAMP-RESISTANCE

CAULKING AND POINTING

FLOOR TREATMENTS

PROTECTIVE PAINTS

TECHNICAL SPECIALTIES

TOCH BROTHERS INC.

ESTABLISHED 1848

NEW YORK
2600 Richmond Terrace, Staten Island 3

CHICAGO
2600 Federal Street 16

NO. 1 WATER-RESISTANTS BELOW GRADE—CEMENT AND MASONRY

INTEGRAL AND PLASTER COAT METHODS	R.I.W. Toxement Powder, Paste and Liquid	Admixtures for concrete or cement mortar to densify ond render the mass water resistant; aids in proper hydration of cement, improves workability and reduces required water content. Use one to two pounds of paste or powder, or one quart of liquid per bag of cement, according to detailed printed directions.
	R.I.W. Concentrated Toxement Paste	A concentrated paste for concrete or cement mortar used under conditions of hydrostatic pressure, according to detailed printed directions. Use 6/10 of a lb. to the bag of cement for concrete, or 1 lb. to the bag for mortar cement.
	R.I.W. Irontox	A chemical powder for use on interior porous masonry as a surface treatment to render the masonry water resistant; is mixed with water and brushed over the masonry surfaces, filling the pores and voids. Two to four applications depending upon conditions. Use according to detailed printed directions.
	R.I.W. Tox-co-Mix No. 1	A puzzolanic admixture combined with other basic reinforcing agents to form an insoluble compound with the free lime liberated in the process of the setting of the cement. Materially reduces shrinkage, gives protection against freezing at temperature below normal freezing point. Increases tensile and compressive strength. Quantity used dependent upon condition of surface. Use according to detailed printed directions.
	R.I.W. Anti-Freeze	A solution, which when used in the proportions indicated in detailed printed directions permits the pouring of concrete or mortar cement in below freezing temperatures.
MEMBRANE AND BRUSH COAT METHODS	R.I.W. Marine Cement Liquid Semi-Mastic Mastic	Three quality asphalt compounds (free of coal tar) foı treating specific conditions of dampness affecting exterior building surfaces below grade: may be used on wood slabs laid in concrete or other masonry to render the wood resistant to rotting ond warping; also on fcundations for the membrane type of water resistant construction in conjunction with either open mesh or treated burlap or felt paper. Coverage: Liquid—50 to 75 sq. ft. per gallon; Semi-Mastic—35 to 50 sq. ft. per gollon; Mastic—20 to 25 sq. ft. per gallon.
	R.I.W. Self-Healing Bridge Cement	A solid compound to be preheated for application to reinforced concrete foundations, floor slabs and footings by the membrane method to render the structure woter resistant; also used for expansion joints and setting of vault lights. The product is adhesive to masonry surfaces, and is thermoplastic, remaining elastic at low temperatures. Use as outlined in detailed printed directions for specific uses.

NO. 2 WATER-REPELLENTS ABOVE GRADE—EXTERIOR MASONRY

SURFACE METHODS	R.I.W. Toxloxpore	A relatively colorless liquid for use on stucco, concrete, limestone, brick and other porous exterior masonry surfaces to render the surface damp resistant and woter resistant. Must be applied to a dry surface. Covers approximately 150 sq. ft. per gallon per coat.
	R.I.W. Anhydrosol	A transparent, relatively colorless liquid for use on exterior masonry surfaces to render them damp resistant and water resistant. Is similar to Toxloxpore excepting that it is heavier in consistency for extreme cases, and has a slightly darkening effect. Covers approximately 150 sq. ft. per gallon per coat.

NO. 3 CURING COMPOUNDS FOR CEMENT AND CONCRETE—TRANSPARENT MEMBRANE

TRANSPARENT MEMBRANE	R.I.W. Toxkure	A surface coating for use on freshly poured cement ond concrete, such as floors, roads, walls, etc., for more rapid and more uniform curing. Covers 400 to 500 sq. ft. to the gallon.

NO. 4 DAMP-RESISTANTS ABOVE GRADE—INTERIOR MASONRY*

PLASTERBOND AND VAPOR SEAL INTERIOR MASONRY	R.I.W. No. 232	A black tacky asphalt compound, free from coal tar, for brush or spray application to interior surfaces of exposed masonry to render the interior damp resistant before the application of plaster. Two coats should be applied. Forms a good bond with hard wall plaster, prevents the staining of plaster and is a good heat insulator. May be used one coat over brown plaster to prevent staining of interior finish. Covers approximately 80 sq. ft. per gallon one coat.
	R.I.W. Semi-Mastic	A black tacky asphalt compound, free from coal tar, to render the interior of exposed masonry surfaces damp resistant. Characteristics similar to R.I.W. No. 232 but heavier in consistency. Covers approximately 60 sq. ft. per gallon one coat.
	R.I.W. Plastertox (Mastic)	A black tacky asphalt compound, free from coal tar, to render the interior surfaces of masonry damp resistant before plastering. Characteristics similar to R.I.W. No. 232 excepting that it is of proper consistency for trowel application. Covers approximately 20 sq. ft. per gallon.
STAINPROOF STONE, MARBLE	R.I.W. No. 110	A black coating for use on interior surfaces of stone to prevent its staining from lime in cement and to render the interior surface damp resistant. Covers approximately 125 sq. ft. per gallon.

NO. 5 TREATMENTS AND COATING FOR CEMENT AND WOOD FLOORS

SURFACE HARDENING AND DUSTPROOFING	R.I.W. Cement Filler	A transparent coating to be applied to dry concrete floors to increase wear-resistance, make the surface oil resistant and check the tendency to "dust." Penetrates into the pores of cement and hardens the surface. A two-coat application is required for maximum protection. Covers approximately 300 sq. ft. per gallon one coat.
	R.I.W. Flintox	A chemical solution surface treatment to harden concrete and check tendency to "dust." Reacts chemically with the cement, precipitating silicious material in the pores of the concrete. Comes in liquid or crystal form. Two applications recommended for best results. Coverage approximately 125 sq. ft. per gallon per application. Use as outlined in detailed printed directions.
	R.I.W. Acid-Resisting Cement Filler	A solution for surface treatment of concrete floors, walls and other masonry surfaces to render them acid resistant and water resistant, and to harden the surfaces. Checks the tendency to "dust," and improves abrasion resistance.
INTEGRAL HARDENING	R.I.W. Toxmix Liquid	An integral liquid for use in concrete or cement to densify and render the mass water resistant. Use one quart of liquid per bag of cement.

*Note: Do not use with portland cement mixtures or as plaster base on ceilings.

NO. 5 TREATMENTS AND COATING FOR CEMENT AND WOOD FLOORS (Cont'd)

DUST-ON METALLIC HARDENING	R.I.W. Metallic Hardener	A dust-on hardener giving a hard wearing surface to cement flooring. Resists oil and grease. Comes in Red and without color. 30 to 75 lbs. to 100 square feet depending on use of floors.
WOOD FLOOR PRESERVATIVE AND FINISH	R.I.W. Toxbro Wood Floor Preservative and Finish	A light colored liquid for use on wood floors and other wood surfaces where penetration is desired. When applied to wood binds the wood fibres, gives a smooth finish, checks both the tendency for grease and other foreign matter to be ground into the surface and the cracking and slivering of wood; makes the wood surfaces water resistant. Covers approximately 400 sq. ft. per gallon per coat.

NO. 6 POINTING AND CAULKING COMPOUNDS

ELASTIC TYPE FOR WOOD, STEEL MASONRY OR GLASS	R.I.W. Non-Staining Caulking and Pointing Compound	An elastic caulking compound with non-staining action which dries to a hard surface but remains elastic underneath. Expands and contracts with change in temperature. Has good adhesion to wood, steel, masonry or glass. Supplied in the proper consistency for either hand or gun application. Requires one gallon for 75 ft. of joint ½ in. x ½ in.

NO. 7 FORM COATING

	R.I.W. Form Coating	A quick drying coating for application to concrete, wooden or plywood forms, producing a water resistant and alkali resistant film. Coated forms will yield a smooth concrete without wood grain marks. Forms may be easily stripped and used a number of times without recoating. Forms coated with this product may be used within an hour after application.

NO. 8 CEMENT AND MORTAR COLORS

	R.I.W. Cement Colors	R.I.W. Cement Colors are furnished in dry powder form. These colors are alkali resistant, have a mineral base, are strong in tinting power, and are unaffected by the chemical action of portland cement. For recommended quantities see detailed printed directions.

NO. 9 PROTECTIVE PAINTS FOR STEEL AND OTHER METAL SURFACES

PRIMING AND SHOP COATS	R.I.W. Tockolith	A cement base paint, gray in color; the most effective R.I.W. priming coat for iron, steel or other metal surfaces requiring protection against corrosive action. Use in accordance with detailed printed directions.
	R.I.W. No. 50 Red	An oxide shop or field coat for structural providing a tough, protective surface coating. Use according to detailed printed directions.
	R.I.W. No. 110A Black Maroon	A structural paint for use on steel or grillage to be enclosed in masonry. Is resistant to acid and alkali actions. Suitable for painting conduits and pipes to be buried underground, also metal lath to check corrosion and plaster staining. Use as per detailed printed directions.
FINISH COATS INTERIOR AND EXTERIOR	R.I.W. No. 49 Black, Maroon, Dk. Olive Green	A high grade elastic paint for exposed or interior metal surfaces. Resistant to acids and other fumes to which railway bridges, viaducts, tanks, etc. are subject. Use in accordance with detailed printed directions.
	R.I.W. No. 137 Red	A high grade oxide paint for exterior and interior exposed surfaces, such as tanks, roofs, etc. subjected to acid fumes and the elements; also suitable as prime and finish coat over galvanized iron. Use in accordance with detailed printed directions.
	R.I.W. No. 1017	A hard drying, durable exterior or interior paint for structural steel, tank cars, gas holders, etc. Withstands exposure in tropical, temperate and cold climates. Is acid, alkali and water resistant and withstands the action of oil, gasoline, molasses and sugar juices. Use in accordance with detailed printed directions.

NO. 10 ACID AND ALKALI RESISTING PAINTS AND ENAMEL

NON-CONDUCTOR	R.I.W. No. 5 Insulectric	A highly efficient surface coating particularly adapted for use in battery rooms. Non-conductive of electricity, and resistant to acids, alkalies, saline drippings, etc. Use in accordance with detailed printed directions.
OIL AND WATER TANK INTERIOR	R.I.W. No. 56 Preservative Filler	A coating for the interior of oil and water tanks or for use as a primer over tar and asphalt to resist "bleeding." Is resistant to the action of vegetable or mineral oils. Use in accordance with detailed printed directions.

NO. 11 ALUMINUM PAINTS

INTERIOR OR EXTERIOR	R.I.W. High Heat-Resisting Aluminum	An aluminum paint which provides a protective, flexible coating resistant to high heat. Use in accordance with detailed printed directions.
	R.I.W. Toxbro Aluminum	A general all-purpose ready-mixed interior and exterior aluminum paint for use on all types of surfaces. Use in accordance with printed directions.
	R.I.W. Asphalume	An asphalt aluminum coating for asphalt or tar roofs, concrete, metal and similar surfaces. Gives a soft, silvery finish. Use as per printed directions.

NO. 12 HEAT RESISTING PAINTS

	R.I.W. High Heat-Resisting Black Stack Paint	For exterior or interior surfaces; withstands a high degree of heat and fumes of acids or alkalies. Use in accordance with printed detailed directions.

2600 Richmond Terrace, STATEN ISLAND 3, N. Y.—2600 Federal Street, CHICAGO 16, ILL.

TOCH CITY

Weather Resistance at Cloud Level. . .

That's just one of the dramatic, vital roles being played every day by "R.I.W." compounds and technical paints in Toch Cities everywhere! From foundations to towering pinnacles, many of the world's finest structures, including industrial plants, schools, churches and prominent buildings in every construction field, are resisting exposure to the elements . . . thanks to the protection provided by "R.I.W." products.

AN IMPOSING ARRAY of skyscrapers, superstructures and ships is seen at left in the composite sketch of a Toch City. All protected by "R.I.W." products, they are:

1. Metropolitan Building, New York City
2. Municipal Building, New York City
3. Singer Building, New York City
4. Woolworth Building, New York City
5. Union Central Life Ins. Co. Building, Cincinnati
6. Bankers Trust Building, New York City
7. McAlpin Hotel, New York City
8. Packard Service Station, Long Island City
9. Pennsylvania Terminal, New York City
10. Waldorf Astoria, New York City
11. Vanderbilt Hotel, New York City
12. Penn. Power House, Long Island City
13. Hell Gate Bridge, New York City
14. Ocean Steamships of several lines
15. Super-Dreadnought "New York"

TECHNICAL SERVICE DEPARTMENT

Architects and Engineers are invited to make full use of Toch Brothers' Engineering Department. This ably staffed department has provided the answers to thousands of technical paint, weather resistance and allied problems for building projects throughout the country.

LOCAL DISTRIBUTION SERVICE

Toch Brothers' distributors are strategically located throughout the country.
An inquiry will quickly bring you the name of the distributor in your city.

TOCH BROTHERS INC.

ESTABLISHED 1848

NEW YORK
2600 Richmond Terrace, Staten Island 3

CHICAGO
2600 Federal Street 16

TRUSCON

FOR BETTER CONCRETE

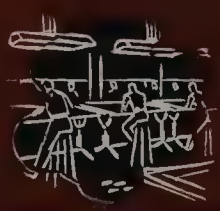
THROUGH

- IMPROVED CURING
- INTEGRAL WATERPROOFING
- INTEGRAL HARDENING
- WEATHER PROTECTION
- CHEMICAL RESISTANCE
- BUILT-IN COLOR

HARD FLOORS
LONG WEARING

WEATHER-RESISTANT
OUTDOORS OR INDOORS

CHEMICAL-RESISTANT
WATER-RESISTANT



DUSTPROOF
COLORFUL—ARTISTIC

SAFER FOOTING
FEWER ACCIDENTS

TRUSCON *Laboratories*

Reg. U.S. Pat. Off.

TRUSCON FOR

For 35 YEARS . . the *Standard!*

Zilicon Integral Waterproofing for Concrete

For Concrete Foundations • Reservoirs • Tanks • Tunnels
Also for Waterproof Cement Mortar • Cement Stucco

• From the earliest days of reinforced concrete construction down to the present time, Truscon's integral waterproofings have been the standby of architectural offices.

Based on sound physical facts which recognize that concrete and cement mortar are naturally porous, Truscon has always stood out as an assurance to architects, builders and owners as safe, dependable and effective waterproofing for the expected life of the structure.

That is probably why a list of the Truscon jobs in most localities reads like a Blue Book of Construction for that area. Most of those waterproof jobs are over ten years old—great numbers of them are around 25 years, and older. All are sound today—a credit to the forethought of their designers and builders.

ZILICON WATERPROOFING PASTE today combines water-repellency and all the advantages of the time-tried and job-tested Truscon Waterproofing Paste—plus greater workability.

Concrete containing Zilicon Waterproofing Paste works easier around difficult forms; the aggregate is held properly in suspension. Less work is required as the mix is more easily manipulated. Segregation with its formation of stone pockets and honeycombing, is greatly minimized.

SPECIFY For Mass Concrete, 7 pounds per cubic yard. For Cement Plaster, Stucco, ¾" thickness, 6 pounds per 100 square feet—1" thickness, 8 pounds per 100 square feet—2" floor topping, 16 pounds per 100 square feet.

GENERAL MOTORS BUILDING, Detroit, Michigan • Albert Kahn, Inc., Architects • Basements and sub-basements waterproofed in 1919.

STATLER HOTEL, Boston, Mass. • Geo. B. Post, Architects • Truscon Waterproofing used for foundation and floor slabs. Truscon also used on Statler Hotels foundations in Buffalo, St. Louis, New York City.

GENERAL ELECTRIC, Chicago, Illinois • Holabird & Root, Chicago, Ill., Architects • Truscon Waterproofing used in all exterior foundation walls and basement floor slabs.

FIRST NATIONAL BANK BUILDING, St. Paul, Minnesota • Graham, Anderson, Probst & White, Chicago, Ill. • All concrete below grade waterproofed with Truscon.

60 WALL TOWER, New York City • Russell, Holton & George, Architects • Truscon Paste used from 30 feet below grade to 700 feet above the sidewalk.

"Ready to Use" COLOR & HARDENER

Built into CONCRETE FLOORS

TRUSCON ART-ROC (Reg. U.S. Pat. Off.) (AGGREGATE)

Non Metallic • Non Rusting • Chemically Inert • Easy Working

Clean, Rich Colors • Economical • Ready to Use

• A new and superior type of concrete floor hardener, for these reasons:

FIRST—It is Non Metallic, therefore Non Rusting and Non Corrosive. May be used outdoors; also the preferred floor hardener where moisture is present as in dairies, laundries, bottling plants, etc.

SECOND—Supplied ready for use—requires no additional material.

THIRD—Because it is naturally adapted to color application producing wonderfully clean, clear floor colors.

FOURTH—It works easier, permitting the cement finisher to produce a smooth, more uniformly colored job.

FIFTH—It flows better, producing a hard, even finish with the least amount of physical effort. That explains why cement finishers like it, why they get better results with it.

ART-ROC AGGREGATE, COLORS

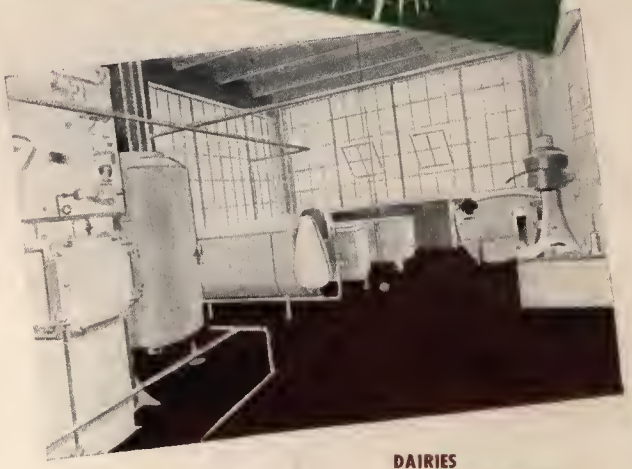
Is a natural mineral crystal with a hardness value af 7 on the Mah scale of hardness, an which metallic iran rates anly 3½. A grain af Art-Rac Aggregate is so hard it will scratch glass ar hardened steel.

Art-Rac Aggregate is chemically inert and unaffected by acids and alkalies encauntered an flaar expasures.

Cantains na iran which may rust; na aluminum which may dissolve in alkali. Result—Art-Rac Aggregate floors do not axidize ar stain fram chemical change.

Colors: Tile Red, Spanish Green. **Specify:** 45 lbs. per 100 sq. ft.

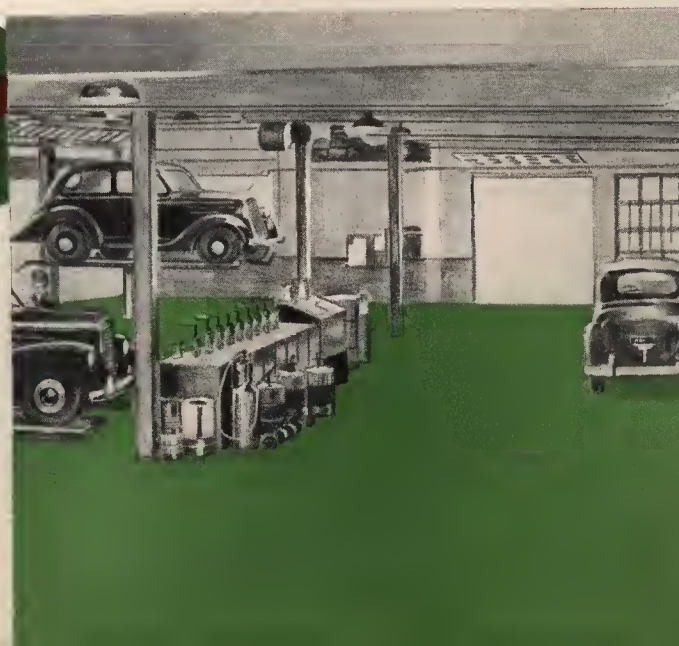
RESTAURANTS, CAFETERIAS



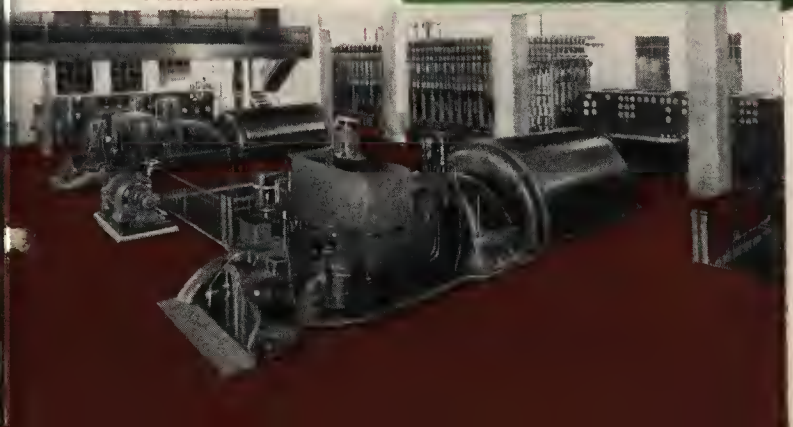
DAIRIES
(Non-Rusting Hordener)

SERVICE STATIONS
DRIVEWAYS
ISLANDS
FLOORS

GARAGES, FACTORIES



POWER PLANTS • AUDITORIUMS
PUBLIC HALLS



TRUSCON

FOR BETTER CONCRETE

USE	PRODUCT	DESCRIPTION
Curing Concrete	**Truscon TRU-CURE**	The modern method of curing concrete, a great saving of time, equipment and cost. Used on poured roof slabs, floor slabs and formed surfaces. Simply spray an a transparent woterproof coating to seol in moisture. Concrete is protected oganist rapid moisture loss, cured efficiently. Tru-Cure is opplied immediately after final finishing—no woits, no deloys. Surfoce shrinkage cracks are largely avoided, concrete improved, becouse moisture is retoined. Quantity required: 1 gallon each 200 sq. ft.
Transparent Damp-resisting (Exterior)	**Truscon SUPER-POR-SEAL**	Cleor, repellent stearate for protecting exterior brick, stone, concrete or stucco. Very pole liquid, does not discolor Bedford stone or marble. Apply by brush or spray. Covers about 80 sq. ft. per gollon (2-coots) depending on porosity of surfoce.
Integral Waterproofing for Concrete Foundations, Tanks, Dams, Tunnels	**ZILICON Waterproofing Paste**	Improved repellent stearate integral woterproofing. Combines water reduction of mix with high degree of woter repellency. Improves workability with less water. Produces denser mix ond better concrete. Zilicon Poste is added directly to the concrete mix. Contains no colcium chloride or soluble solts. Specify—for waterproof cement stucco: (1:3): 1 gol. per 100 sq. ft. 1" thick. For moss concrete: 1 gol. per cu. yd.
Non-Shrinking Brick Mortar	**Truscon MORTITE Dry**	Added integrally to cement mortor. Reduces omount of woter needed in mix with much improved workobility. Brick joints remoin tight ond shrinkoge-crack-free. Adds corrosion resistance ond minimizes lime stoin or "efflorescence" on brick surfoce. Specify: 2 lbs. Mortite per sock of cement ond 2 lbs. Mortite per cu. ft. of lime putty.
Dry Zone Treatment Under Paint Film	**Truscon POR-LOX**	For best results, every concrete or brick surfoce should first be dry-zoned with Por-Lox before pointing. Por-Lox locks the surface pores ond estoblishes the correct surfoce for the proper adhesion of point. Then apply StoneTex or other paint. Protects subsequent cooting from peeling at crocks ond hoir checks.
Swimming Pool Paint	**Truscon TITE WALL**	Hydroulic point in powder form, mixed with water. White and colors. Used for pointing domp bosement walls or similar surfoces where moisture is present. Also for concrete ond cinder block. Dries on damp surfaces. Eosy working. Entirely inorganic. Apply with brush, spray or roller. Quantity required: 75-150 sq. ft. per gollon, depending on surface.
Cement Paint (Not Saponifiable)	**Truscon TITE WALL**	
Floor Hardener Metallic	**Truscon FERRICON**	An improvement over ordinary metollic floor hordeners becouse of oddition of the speciol odmix "Zilicon" which accounts for these odvontages: (1) Improved workobility. (2) Densification of topping. (3) Increased strength. (4) Protection against organic ocids. (5) Freedom from lime streoks. (6) Better color. Quantity required: from 30 to 60 lbs. per 100 sq. ft. depending on density ond hordness desired.
Floor Hardener Chemical	**Truscon AGATEX**	Colorless chemicol floor hardener. Surface hardens concrete ond checks dusting. Solution is flushed over the floor and swept in with o broom. Does not change color. One lb. per 50 sq. ft. cement floor.
Floor Hardener Non-Rusting Colored	**ART-ROC Aggregate**	A non-metollic, chemicol-resisting and non-rusting minerol hordener for concrete floors, supplied ready for use—requires no odditions. Clean, true colors, free from streaking ond lime stoins. Colors: Tile red, Sponish green. Quantity required: 45 lbs. per 100 sq. ft.
Dye for Concrete Floors	**Truscon FLOR-DYE System**	This is the originol Flor-Dye System (Potented). Consists of two materiols: (1) Flor-Dye, a penetront for coloring, sealing and beoutifying concrete floors or poraus tile floors. (2) Flor-Dye Dressing—the finish which emphasizes the color ond protects the treatment. Not a point but o reol dye, therefore, holds its color and finish. Adaptable to bosement grade floors or outside cement terraces or wolks. Four ottroctive colors. Approximote requirements: Dye—200 sq. ft. per gallon; Standard Dressing—1000 sq. ft. to the gal.
Concrete Repairs Grouting	**Truscon ISOVOL**	Produces a non-shrinking grout for potching holes or crocks in concrete, for bedding machinery, grouting under column bases, etc.
Glazing Sash Steel or Wood	**Truscon TITE-LITE**	The modern glozing compound far steel or wood sash. Furnished in gun or knife consistency. Surfoce dries, leaving interior of gloze soft ond rubbery. Permits some movement of glass in sash without breoking. Very odhesive; maintoins woter-tight, oir-proof bond. If gloss must be token out, no hammer and chisel needed. Tite-Lite is removed with putty knife ond reglazed without trouble. For steel sash, Tite-Lite is furnished "chromoted." Quontity required: obout 1 gallon per 40 lineol ft.

701-A

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TRUSCON LABORATORIES, Division of Devoe & Raynolds Co., Inc., Detroit 11, Michigan

WESTERN

Waterproofing Companies

Contracting Engineers for above and below grade masonry walls of all types

WESTERN WATERPROOFING COMPANY
EXPERTS SERVICE

WATERPROOFING
WEATHERPROOFING
REPOINTING
PATCHING
DECORATING
OIL PROOFING
VAPOR PROOFING
MASONRY RESTORATIONS

WESTERN
WATERPROOFING COMPANIES

Biography—The Western Waterproofing Companies are among the oldest waterproofing and weatherproofing contractors in the country. They represent over thirty years of continuous service to architects, builders, building owners and plant engineers.

Work Undertaken and Services—The Western Waterproofing Companies are unique in that they do not offer any materials for sale or use advertised products from the open market except when specifications require. They offer a complete waterproofing, weatherproofing, and masonry repair and restoration service using their own exclusive materials, and are equipped to do protective work on new structures or remedial work on old structures. A complete and detailed analysis of client's requirements is made and a specification drawn up. This becomes the basis of contract under which work is executed. Each company has its own equipment, warehouse and office. A central laboratory in Detroit serves as research headquarters for the entire organization. Submission of special problems is welcomed.

Methods—Specific problems require specific methods of solution. Western's methods are based on the use of highest grade materials by specially trained mechanics. These methods are a result of many years of research and on-the-job experience.

"IRONITE SYSTEM"

A system of waterproofing below-grade masonry walls from the inside using GENUINE IRONITE waterproofing material.

"RESTO-CRETE SYSTEM"

A system based on the use of Western's non-capillary RESTO-CRETE weatherproofing material for protection or restoration of above-grade masonry walls.

Additional literature on methods is available. We especially invite requests for our booklet "The Principles of Weatherproofing."

Personnel—Engineering staff for inspection, consultation and recommendation.

Research staff for solution of special problems.

Field organization for execution of work by our exclusive methods as specified for each particular job.

IRONITE Below Grade Waterproofing

For Basement Walls and Floors, Tunnels, Sewers, Pools and Tanks.

Original and GENUINE "IRONITE" is composed of over 90% chemically pure iron, pulverized and carefully graded, plus an activating agent. This agent oxidizes the iron particles in the presence of water causing them to swell and lock themselves mechanically in the pores of leaking masonry walls and seals them against the passage of water.

Advantages

1. "IRONITE" Waterproofing is usually applied to the inside of masonry basement and similar walls without the necessity of excavating. Unlike membrane waterproofing, "IRONITE" Waterproofing becomes a hard, finished integral part of the structure requiring no protection against abrasive injury.
2. It can be applied to either a wet or dry surface, thus eliminating the necessity of maintaining dry working conditions during application.
3. Its application will resist any hydrostatic pressure which the structure itself is capable of withstanding.
4. It increases in hardness with age and can normally be expected to last as long as the structure itself.
5. It is equally adaptable to new or existing structure.

How Applied—Applied by a brush in a number of coats or by troweled waterproofed "IRONITE" cement plaster mix. All work is guaranteed.

Trade Mark—The "IRONITE" Trade Mark is owned by the Ironite Company of Chicago.

RESTO-CRETE Above Grade Weatherproofing

Prevents Moisture Damage—Restores and Decorates Exposed Masonry.

RESTO-CRETE Grout is a protective and decorative non-capillary weatherproof coating composed of cementatious materials plus certain admixtures and colors. The standard 7-day compressive strength test of the base material is over 3,200 lb. per sq. in. Absorption in boiling water compared to normal Portland grout is very low, less than 7% in 24 hrs.

Advantages

1. Resto-Crete is similar to masonry itself chemically and physically and therefore compatible with the surface.
2. Non-corrosive, harmless to use, resists many acids and alkalies and lends itself to pigmentation.
3. Allows the masonry wall to "breathe" and has an insulating effect by keeping the walls dry.

How Applied—Masonry with a cracked or spalled surface showing effects of moisture penetration usually requires patching and restoration before a final protective coating can be applied. RESTO-CRETE is applied over the recreated surface. Applied only under Contract by Western's experienced workmen or licensees. No material is for sale.

Trade Mark—The "RESTO-CRETE" Trade Mark is owned by the Western Waterproofing Company of Detroit.

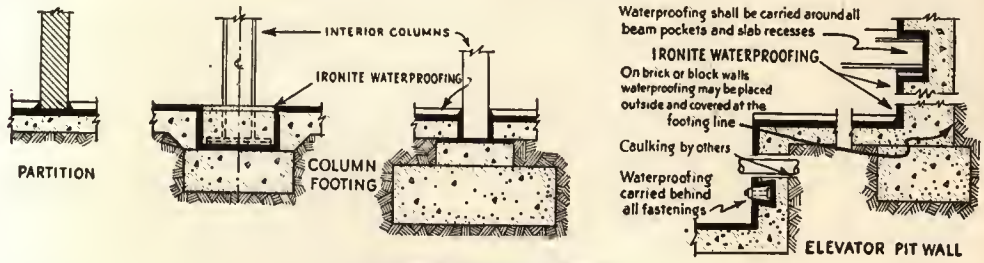
Specifications

Note: We prefer to write a specification for each specific job. The following sample is illustrative.

All surfaces to be waterproofed, comprising in general the interior surfaces of all walls and floor slabs in contact with earth, all pits, trenches and other depressions, all columns and interior division walls which penetrate the floor, (here specify other locations requiring waterproofing), shall be waterproofed by the Western Waterproofing Company or other licensee (Address of nearest office), and guaranteed for a period of two years.

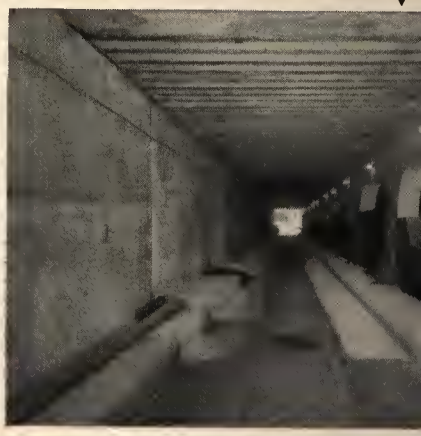
Walls shall be left with a (brush) (float) (steel troweled) finish. Cement floor finish over floor waterproofing is to be provided by (Western Waterproofing Company or other licensee) (mason contractor).

Necessary pumping shall be provided by the (general) (foundation) contractor.



Typical Application Details

Before ↑ ↓ After



IRONITE OIL-PROOFING for Concrete Storage Tanks

Requirements—(1) The prevention of passage of ground water seepage through the concrete from the outside. (2) The prevention of the passage of oil through the treatment into the concrete wall and floor from the outside. (3) The interior surface must be sufficiently hard to withstand periodic scraping and removal of sludge.

Application—As soon as forms are stripped, all tie wire holes and all honeycombed areas are cut out and patched to a depth of 1½ inches. Over inside surface is applied a number of brush coats and continuous ½ in. thick cement plaster coat containing "IRONITE" Waterproofing, floated to a uniform surface. After the cement "IRONITE" coat has cured, a sufficient number of coats to oil-proof the surface are applied.

Before ↑ ↓ After

Types of work—The following types of work have been successfully weatherproofed and/or restored by us under guarantee. Lists and data of accomplishment furnished on request:

Old Concrete—Buildings of all types, abutments, dams, chimneys, piers, elevators, etc. Sand-blasted as required, chipped; patched with IRONITE Mortar; plastered as required. Finished with RESTO-CRETE to prevent water penetration and to decorate.

New Concrete—Surface plastered smooth or left rough as desired. Finished with one or two coats of RESTO-CRETE.

Swimming Pools—Waterproofed with "IRONITE" and plastered from rough concrete. Special non-peeling, decorative treatments in white or colors.

Plaster and Stucco—Complete repair of broken areas, using special high-strength plaster. Finished with one or two coats of RESTO-CRETE.

Cinder, Concrete, Haydite, Etc., Block Surfaces—Federal housing jobs, residences, etc. Two coat treatment leaving rough or plaster-like smooth texture. (We believe it the most durable, weatherproof treatment in existence.) Economical and effective.

Brick, Stone Walls—Where only joints leak, hollow and defective joints repointed, then all joints surface-grouted with RESTO-CRETE. Less expensive than a first quality repointing job, and fully as effective. Where both brick and stone leak, entire surface treated without marring the architectural effect. Where stone surface is disintegrated, it is completely rebuilt to original contours and resurfaced.

Cast (Artificial Stone and Terra Cotta)—Complete resurfacing by special patching, thin plastering operations. Finished with RESTO-CRETE to look like new Limestone.

Brewery Problems—Particularly applicable to solution by us. Vaporproofing treatments for the inside of exterior walls surrounding high humidity rooms.

SPRAYCRETE . . . .

SPRAYCRETE is a newly developed method of application of premixed mortars of various cements and aggregates air-projected on to masonry surfaces in thicknesses from $\frac{1}{32}$ in. to 1 in. with our new high-speed SPRAYCRETE equipment which has been developed and tested for several years. Portland cement mortar mixtures can be varied from inexpensive standard cement and sand (thick built-up coats) to our highly waterproofed RESTO-CRETE and sand (thin protective and decorative coats) with corresponding variations in compressive strengths from 1600 lbs. to over 3000 lbs. per square inch. Eliminates hair cracks.

RESTO-CRETE representative jobs

General Foods Company,
Battle Creek, Michigan

Holy Angels Church,
Dayton, Ohio

Shibe Park Stadium,
Philadelphia, Pennsylvania

Hiram Walker & Sons,
Peoria, Illinois

Needham Senior High School,
Needham, Massachusetts

Massey Harris Company,
Toronto, Ontario

Bell Telephone Co. & AT&T Bldgs.,
(over 100 throughout the country)

American Can Company,
Terre Haute, Ind. (and others)

Nash Kelvinator Corporation,
Detroit, Michigan

IRONITE representative jobs

Statler Hotel,
Boston, Massachusetts

Kaiser Frazer Plant,
Willow Run, Michigan

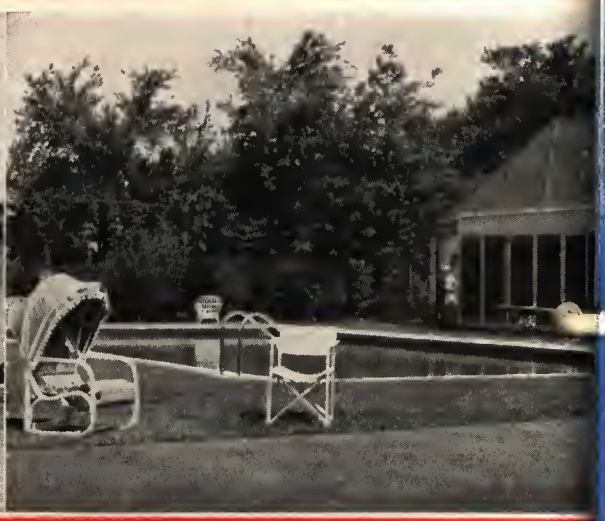
Procter and Gamble Company,
Ivorydale, Ohio

Orthopedic Hospital,
University of Chicago

Grosse Pointe Yacht Club,
Detroit, Michigan

War Department Building,
Washington, D. C.

Rockefeller Center Buildings,
New York, New York



WESTERN WATERPROOFING COMPANIES

ASSOCIATES

PENNSYLVANIA CORPORATION

PHILADELPHIA 7, PA., Liberty Trust Bldg.
SCRANTON, PA., 711 Linden St.
BALTIMORE, MD., 2703 Sisson St.
WASHINGTON, D. C., 2026 Eye St., N. W.

OHIO CORPORATION

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DETROIT 26, MICH., Murphy Bldg.
CLEVELAND 15, OHIO, Builders Exchonge Bldg.
TORONTO, ONT., 20 McGee St.
MONTREAL 25, QUE., Keefer Bldg.

NEW YORK CORPORATION

NEW YORK 17, N. Y., Graybor Bldg.
BOSTON 18, MASS., 82 W. Dedham St.

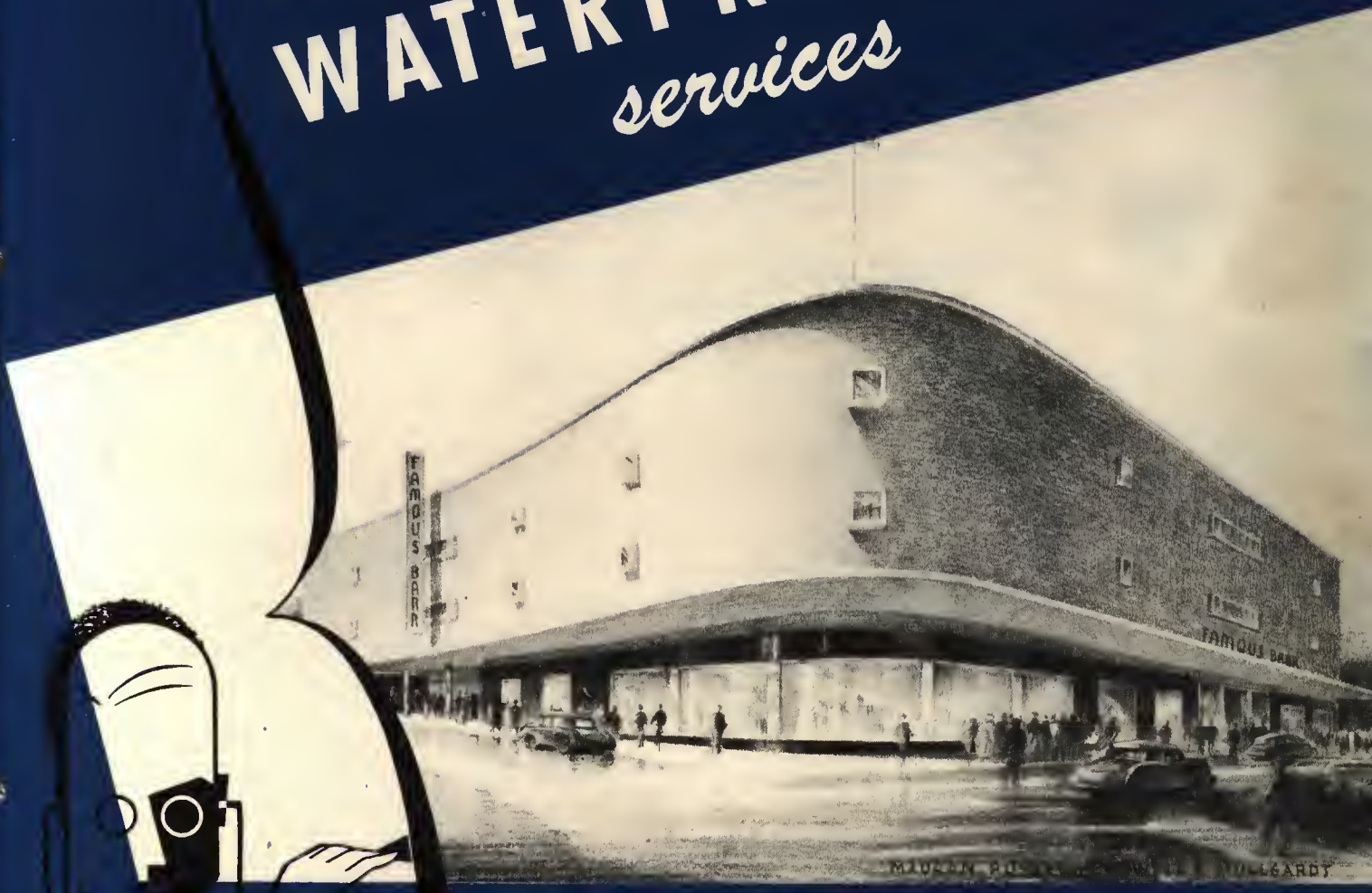
CHICAGO AND SURROUNDING TERRITORY

CHICAGO 4, ILL., Central Ironite Waterproofing Co., Suite 2005, 208 S. La Salle St.

The above mentioned companies are independent corporations

COMPLETE-EFFECTIVE

WEATHERPROOFING
WATERPROOFING
services



SPECIFY

WESTERN WATERPROOFING CO.

Engineers and Contractors

ST. LOUIS, MISSOURI

Weatherproofing • Waterproofing • Dampproofing • Concrete Restoration • Tuckpointing • Building Cleaning

FOR LASTING SUB-SURFACE WATERPROOFING

specify IRONITE

For over 35 years, genuine Ironite has proved its ability ta retard below-grade water penetration under every circumstance. It can be effectively applied to both new and old construction. In general, *all* interior masanry surfaces in cantact with the earth should be waterproofed with Ironite. This includes walls, floors, interior calumns, pits, depressions, and junctions af floor and wall, column and stairs. Pulverized iron, axidized by an activating agent in the presence of water, expands and thoroughly fills all cracks, pores and crevices in the masonry to which Ironite is applied. Thus Iranite provides cantinued resistance to the elements.

ADVANTAGES OF IRONITE OVER OTHER TYPE WATERPROOFINGS

1. Applied under ideal warking conditians — inside.
2. Eliminates digging and inconvenience of treating outside walls.
3. May be applied on wet or dry surfoces.
4. Becomes an integral part of the masonry.
5. Resists any hydrostatic pressure that structure itself can withstand.
6. Retards water penetration for years.
7. Costs no more than membrane type waterpraofing.

HOW TO SPECIFY IRONITE

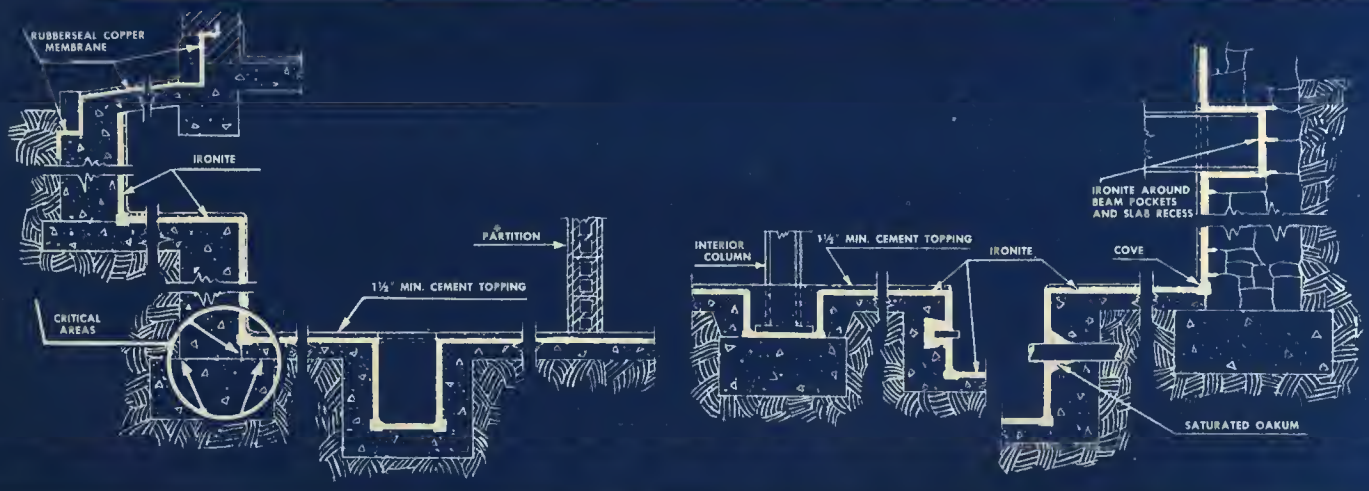
MATERIAL: To be genuine Ironite Waterproofing as manufactured by Ironite Co. af Chicago, delivered in original sealed container, and applied by Western Waterproofing Company.

SCOPE OF WORK: The interior of all masonry surfaces in contact with the earth shall be waterproafed with Ironite.

METHOD: Walls and/or floors shall be tharoughly cleaned and roughened before Iranite is applied. Only one coat a day to be applied to insure proper oxidation. Base floor slab ta be left rough and clean by concrete contractor. Ironite shall be thoroughly broomed in, last coat being applied just before cement topping is poured.

QUALIFICATIONS AND GUARANTEE: The waterproofing contractor shall be required to give a guarantee that all surfaces treated by him will be and will remain waterproof for a period of two years. He will make any repairs at his expense, shauld they be necessary due to defects in his material or workmanship, within the guarantee period. A list af 5 jobs of 10 years standing, of comparable size, that have been successfully waterproofed by specified methads is to be submitted 3 days before bidding.

WESTERN APPLICATION + WESTERN MATERIAL = LASTING PROTECTION



FOR EFFECTIVE INTERIOR WALL DAMPPROOFING

specify PARGE

You can eliminate the possibility of above-grode dampness by specifying thot Western's Parge Coat Dampproofing be applied during constructian. This material, of cementitious base, contains waterproofing ingredients which expand slightly to lock themselves into the pores of the surface. Thus Parge is an effective water borrier . . . yet it daes nat destroy the "woll breothing" properties of the masonry. In general, Parge is the well-known Ironite system of sub-surface waterproofing modified, after 10 years of research and testing, for above-grade work. Today, it stands on its own reputation for years of successful performance.

WHERE TO USE WESTERN'S PARGE COAT DAMPPROOFING

The interior surfaces of oll obove-grade exterior masonry walls that are to be plastered, furred, or grouted should be dampproofed with Western's Parge. It should include all sides of exterior columns that ore to be enclosed and the top, outside face and bottom of all spandrel beams; surfaces behind air-ducts, bath tubs, rodiator recesses, piping, window sash, partitions, etc. It should extend from floor line to underside of above floor or roof slab and for a distance of 18″ out on bottom surface of floor or roof slab.

ADVANTAGES OF WESTERN'S PARGE OVER ORGANIC COMPOUNDS

1. Eliminates moisture penetration — in a similar monner that Ironite holds many pounds of pressure below-grade.
2. Costs less than materiols of comporable thickness and protection.
3. Gives a positive plaster bond . . . rough, stippled texture provides both a mechanical and physical bond.
4. Assures longer life for wall due to inorganic composition.
5. Non-sogging, non-peeling . . . no loose or hollow plaster.
6. Increases insulation by assuring dryness.

HOW TO SPECIFY WESTERN'S PARGE COAT DAMPPROOFING

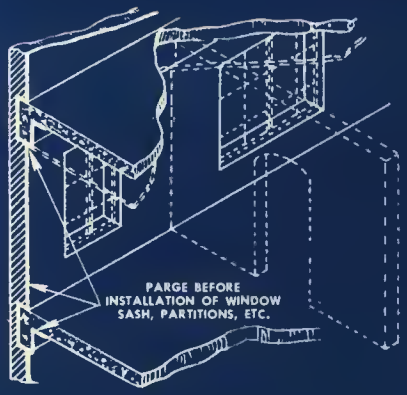
MATERIAL: To be Western's Parge Coat Dampproofing as manufactured and applied by the Western Waterproofing Company, St. Louis, Mo.

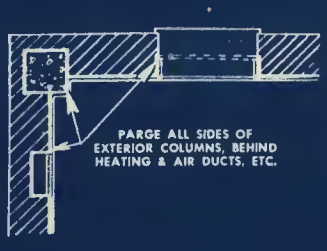
SCOPE OF WORK: The interior surfaces of all above-grade exterior masonry walls that are to be plastered, furred, or grouted shall be dampproofed. All work to be done before erection of partitions or installation of sash, furring, etc.

METHOD OF APPLICATION: Western's Parge Coat Dampproofing shall be gun-applied under 50 lbs. pressure and shall be built up to a depth of at least $\frac{3}{32}$″ in thickness. The surface shall be left in a gun finish, suitable for reception of plaster.

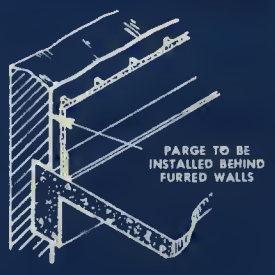
QUALIFICATION AND GUARANTEE: Only waterproofing contractors with 5 years continuous experience in dampproofing, who can submit a list of 5 jobs of comparable size and nature successfully completed, will be considered for this work. The contractor shall guarantee his work for a period of two years, making repairs to the dampproofing if ony leakage occurs due to faulty workmanship or materials.

Proper Application Assures Lasting Results! Specify IRONITE — *Applied by WESTERN!*





PLAN



FOR EXTERIOR WEATHERPROOFING AND BUILDING RESTORATION . . .

SPECIFY

DILATO

. . . for Exterior Mortar Joints

To insure completely filled brick ond stone mortar jaints, and to eliminate maisture damage and deteri-aratian, many architects are again specifying that brick jaints be raked back ⅜" when laid. Western mechanics then fill these joints with Dilata Expanding Mortar to assure lasting salid joints. Dilato is a non-staining, cementitious mortar which expands .004" per cubic inch when set. Its cost is comparable to other cement mortar.

RESTO-CRETE

. . . for above-grade Restoration

Far over 35 years, Western's Resto-Crete methad of weatherpraafing has restared, protected and helped maintain thousands of this country's indus-trial, commercial and architectural landmarks. Resta-Crete, the materiol around which this system is based, is now adding years of weather-resistant protection to many millians of square feet af masonry surfaces. Western engineers are always available to survey old structures and to recam-mend suitable methods and materials for restoration.

WHO USES WESTERN WATERPOOFING SERVICES?

The ever expanding list of those who specify Western Waterproofing services includes many af Americas' leading industriol plants, engineers and architects. Same of these include:

THE COCA-COLA COMPANY	BELL TELEPHONE COMPANIES
GENERAL MILLS	WATERMAN STEAMSHIP LINES
STANDARD OIL COMPANIES	NATIONAL BISCUIT COMPANY
SEARS, ROEBUCK & CO.	GENERAL FOODS

AND THOUSANDS OF OTHER ORGANIZATIONS

SPECIFY WESTERN WATERPROOFING . . .

For Complete, Effective Waterproofing and Weatherproofing Services

No matter how large ar how small the project, Western is equipped with proven methads, proper materials, and skilled mechanics — all combined for completely satisfactory service. So specify Western Waterpraofing . . . you can count an its reputation for perfarmance.

Na materials for sale. Work done under cantract, insured and guaranteed
Ask for detailed specificatians

WESTERN WATERPROOFING CO.

Engineers and Contractors

SYNDICATE TRUST BLDG. • ST. LOUIS 1, MO.

Kansas City, Mo. • Springfield, Ill. • Charlotte, N. C. • Atlanta, Ga. • Miami, Fla. • Richmond, Va. • New Orleans, La.
Little Rock, Ark. • Evansville, Ind. • Dallas, Tex. • Des Moines, Ia. • Minneapolis, Minn.

BIRD & SON, inc.

BIRD PRODUCTS

Established 1795

NEPONSET BLACK VAPOR BARRIER

THE *Approved*

VAPOR BARRIER PAPER

FOR USE WITH ALL TYPES OF

INSULATION

1949

BIRD NEPONSET BLACK VAPOR BARRIER

• BIRD NEPONSET BLACK VAPOR BARRIER for use with INSULATION •

For Use With Insulation

For Positive Condensation Control in Wall and Ceiling Construction Specify Bird Neponset Black Vapor Barrier

One of the greatest enemies of efficient insulation, as well as a contributing cause of exterior paint blistering, structural rot and damage to interior finish is condensation. Modern building methods rightly insist on air-tight, insulated, leak-free construction as a preventive of heat loss. However, the elimination of air leaks in sidewalls and ceilings has also eliminated the openings through which excess water vapor, found in most heated buildings, could pass harmlessly to the outside. This excess vapor exerts a great force to get to the colder, low pressure areas outside and literally pushes itself through the wall. As it reaches the lower dewpoint temperature which during cold weather is usually found between the outside and inside wall, the vapor condenses into water, which if not prevented, will cause great damage. Fortunately, there is a proven way to prevent this moisture from entering sidewalls and ceilings, and condensing. It is by specifying and using an approved Vapor Barrier such as Bird Neponset Black Vapor Barrier on the inside or warm side of the wall. This Vapor Barrier has been widely and independently tested; among the most recent being at the University of Minnesota laboratories by Professor Rowley, a recognized authority on this subject. Those tests revealed that Bird Neponset Black Vapor Barrier far exceeded the standards set up by Professor Rowley for an efficient vapor barrier.

Its use on the warm side of the insulation, i.e., nearest the inside or warm surfaces, automatically prevents condensation in the between-stud areas resulting from the above described causes. Bird Neponset Black Vapor Barrier prevents this condensation because it screens out the moisture as the warm moisture-bearing air moves from the warm inside area to the colder outside area. For positive protection, specify and use Bird Neponset Black, the approved VAPOR BARRIER.

Why Bird Neponset Black Is the Right Vapor Barrier to Prevent Condensation in Buildings You Construct

It's the Right Type

Authorities agree that one of the best methods of combating condensation is the use of an asphalt saturated and glossy coated paper on the warm side of the wall. (See U. S. Dept. of Agriculture Forest Products Laboratory Report — Condensation Problems in Modern Building.) Bird Neponset Black is asphalt saturated and coated with glossy waterproof asphalt in the Bird plant and under our own Controlled Production Process.

It Meets Every Test

In test after test, Bird Neponset Black has received the stamp of approval as an efficient Vapor Barrier. Most recent of these is that conducted in 1945 by Professor Rowley in the laboratories of the University of Minnesota. It was found to greatly surpass the requirements set up by Professor Rowley for a Vapor Barrier.

It Has These Plus Values

In addition to its function as a Vapor Barrier, Bird Neponset Black performs the double function of sealing cracks, eliminating drafts through sidewalls, and loss of heat by convection.

Specifications

Width of Roll — 36 in.

Available in 500 sq. ft. rolls — approximate weight per roll, 50 lbs.

Asphalt saturated and coated both sides with a glossy surface asphalt coating.

Meets Federal Specification UU-P-536 Grade B.

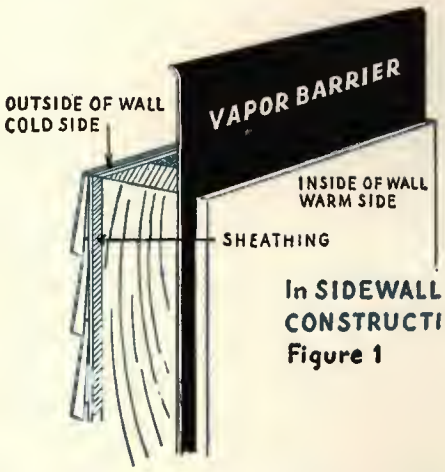
Where to Install Neponset Black Vapor Barrier in Residential Construction

The Vapor Barrier used must have a lower vapor transfer rate than the wall on the opposite or cold side (Fig. 1). This will allow any moisture which may pass around the Vapor Barrier an opportunity to escape through the cold wall before it condenses.

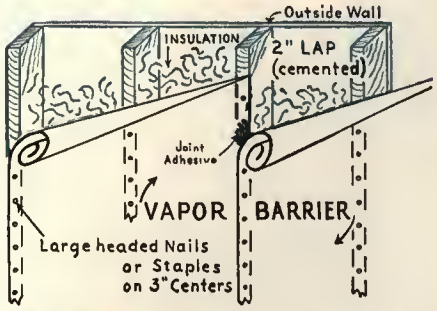
Bird Neponset Black Vapor Barrier should be applied to the studs (Fig. 2) with at least a 2 inch lap cemented with Bird Quick-Set Lap Cement and fastened with large headed nails or staples. The nails should be ¾ inch Galvanized Roofing Nails, or if staples are used, they should be Viking Gypsum Staples (manufactured by W. W. Cross & Co.) at least 9/16 inches in length.

Care should be taken to make absolutely certain that all possible air leaks are sealed. All corners should be lapped the usual 2 inches, and cemented. In attics where insulation and a Vapor Barrier are used, it is necessary to allow for air circulation above the insulation by installing louvers at both ends of the building. This gives any moisture-laden air which has escaped around the Vapor Barrier or through damaged areas, an opportunity to escape before it condenses on the cold roof boards.

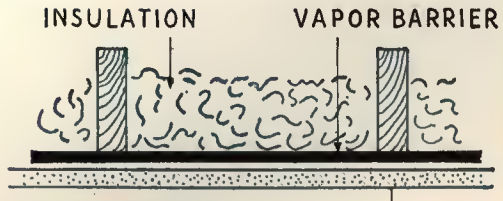
Where to Install Vapor Barrier in Residential Construction



In SIDEWALL CONSTRUCTION
Figure 1

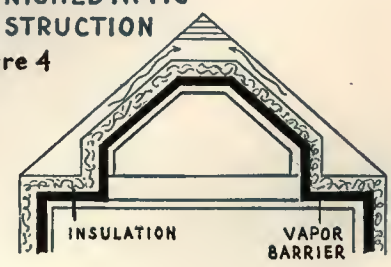


APPLICATION to STUDS Figure 2

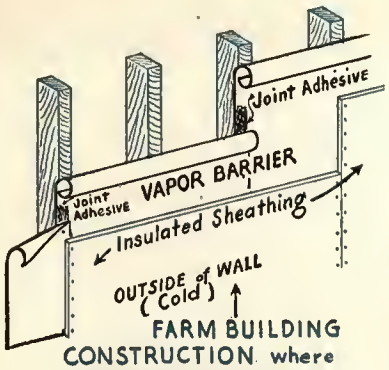


In UNFINISHED ATTIC CONSTRUCTION WHERE CEILINGS ARE INSULATED Figure 3

In FINISHED ATTIC CONSTRUCTION
Figure 4

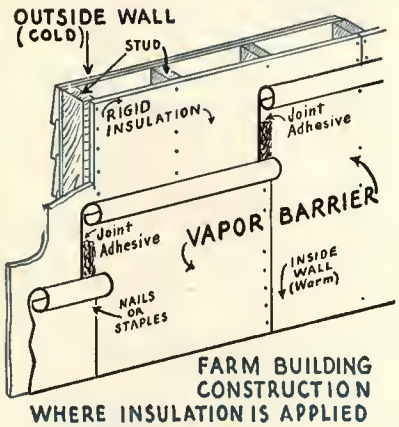


• BIRD NEPONSET BLACK VAPOR BARRIER for use with INSULATION •



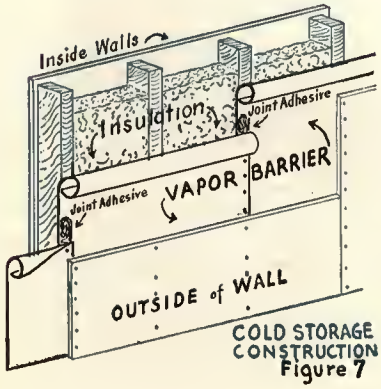
FARM BUILDING CONSTRUCTION where INSULATION IS APPLIED ON OUTSIDE OF STUDS.

Figure 5



FARM BUILDING CONSTRUCTION WHERE INSULATION IS APPLIED ON INSIDE OF STUDS

Figure 6



COLD STORAGE CONSTRUCTION

Figure 7

Where to Install *Bird Neponset Black Vapor Barrier* in Farm Buildings

When farm buildings are to be built using insulated sheathing board, Bird Neponset Black Vapor Barrier should be applied to the outside of the studs in the usual manner; that is, lapped with at least a 2 inch lap, cemented, and fastened with either large headed nails or staples. The building board or sheathing is then applied over the vapor seal. When a white interior is desired, the Neponset Black Vapor Barrier may be whitewashed in the usual manner with any good whitewash. If non-insulating inside finish is to be used, the Bird Neponset Black Vapor Barrier should be applied to the inside of the studs, and the inside finish applied directly over it.

If the interior walls of an already existing farm building are to be insulated with rigid insulation, the following procedure should be followed. After the insulation board is installed, apply Bird Neponset Black Vapor Barrier to the inside (warm) surface. (See Fig. 6.) This can best be done by applying Bird Neponset Black Vapor Barrier vertically to the wall with a 2 inch cemented lap, fastening the Neponset Black to the insulating board with Viking Gypsum Staples (manufactured by W. W. Cross & Co.), placed 3 inches on centers and in vertical rows approximately 16 inches apart. If in danger of destruction by pecking of hens, or abrasion from cattle, the Vapor Barrier may be covered with a hard board wainscot.

Where to Install *Bird Neponset Black Vapor Barrier* with Cold Storage Insulation

A good Vapor Barrier is absolutely essential when insulating a cold storage room. This should be applied on the warm side which in this case, may be the outside wall. Bird Neponset Black Vapor Barrier should be lapped 4 inches, cemented and fastened with nails or staples. (Fig. 7.)

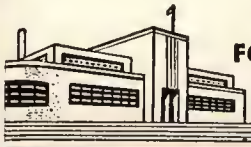
In special cases of high interior humidity, or in very severe cases where the temperature inside the cold rooms is below 0°F., special vapor barrier construction is necessary. For such special problems write manufacturer.

In fruit and vegetable storage bins without mechanical refrigeration, Bird Neponset Black Vapor Barrier should be applied on the warm side of the insulation. In cases of this type, the warm side would be that side which is warmest the greater part of the time the building is being used. The Vapor Barrier should be lapped 4 inches, cemented and fastened with nails or staples. In cases where the walls are below grade, Bird Neponset Black Vapor Barrier should be applied to both sides of the wall with two plies on the side which is in contact with the earth.

NOTE: In all types of installations care should be taken to vapor-seal the space between the studs at the bottom, to prevent moisture from below bypassing the vapor barrier in the wall.

FOR HOMES

FOR INDUSTRY



BIRD & SON, inc.

BIRD PRODUCTS

Established 1795

RUBBERLIKE RUNNER · BUILT-UP ROOFS
SHOE CARTONS · INDEX PRESSBOARDS
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Printed in U.S.A.

9c
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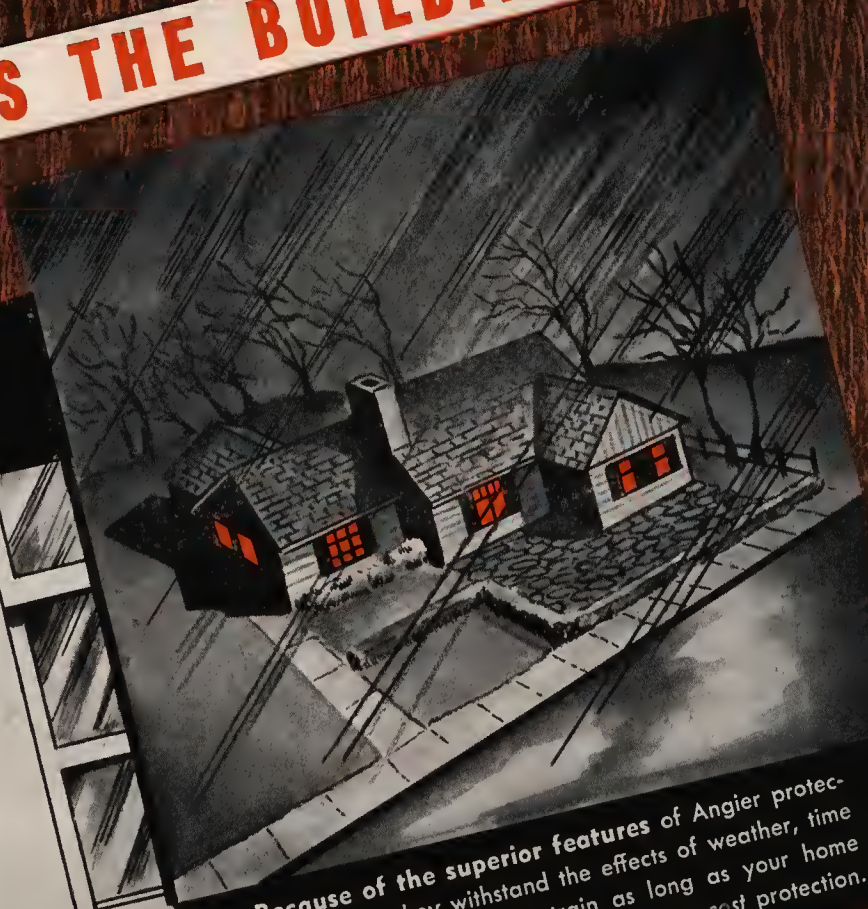
ANGIER BUILDING PAPERS

LAST AS LONG AS THE BUILDING STANDS

Ordinary building papers deteriorate and tear when exposed to "in wall" moisture and building stress and strain. This often results in loosened plaster, paint deterioration, stained walls and structural decay.



Because of the superior features of Angier protective papers, they withstand the effects of weather, time and building stress and strain as long as your home stands. This permanent protection is low cost protection.

MANY are reinforced with sturdy cords for extra strength.

MANY are creped-to-stretch under building stress and strain.

ALL are moisture-proofed for lasting protection.

ALL Angier building papers are low cost in the long run.

USE *for...* **SHEATHING**

Protection for Floors, Sidewalls

✓

✓

This duo-purpose paper keeps out dust and "wet" when applied between floors;

Copper protection at a fraction of the usual cost.

VAPORSEAL meets proposed Federal Grade "A" specifications.

ANGIER CORPORATION

ANGIER BUILDING PAPERS

FLASHING and Damp-Proofing Sills and Basements	FLOORING Dust-Barrier between Finished and Sub Floors	VAPOR-BARRIER and Insulation Protection
BROWNSKIN SHEATHING paper is moisture-proofed, thoroughly impregnated and *creped-to-stretch* . . . it "gives" as the building settles. Unlike ordinary building paper this double-thick kraft sheet clings to nails and resists puncture.		
ANSULATE is *reinforced* with parallel and diagonal strands of yarn imbedded in the double layer of moisture-proofing compound. Its exceptional strength assures *lasting* protection for roofs, sidewalls.		
. . . also protects finished floors during construction.		The double-thick flooring paper at low cost.
	COPPERSKIN is backed by heavy *creped*, impregnated kraft that "gives" as the electro-bonded copper is shaped.	
Applied to "warm" side of walls, this superior moisture-proofed double-thick paper keeps wet out of insulation . . . makes it more effective.		

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FRAMINGHAM, MASS.

ANGIER BUILDING PAPERS

give LASTING protection

1 Angier **ANSULATE** APPLY to all sidewalls and roof for permanent sheathing protection.

SPECIFICATIONS: 34 pound rolls; 36 inches wide, 500 square feet. Also available on special order in 48 inch and 60 inch widths, 1000 square feet.

2 Angier **BROWNSKIN** APPLY to all sidewalls and roof for permanent sheathing protection.

SPECIFICATIONS: 37 pound rolls; 36 inches wide, 500 square feet. Also available on special order in 48 inch and 60 inch widths, 1000 square feet.

3 Angier **COPPERSKIN** APPLY to window and door openings for flashing; to spandrel for thru-wall flashing; to eaves and concealed ridge use, for water-proofing basement walls, floors and sills.

SPECIFICATIONS: 1, 2, or 3 oz. copper with 1, 2, or 3 ply Brownskin. 15, 24, or 34 pounds per 100 square feet. 60 inches wide, 120 lineal feet, 600 square feet. *

4 Angier **ECONOMY** Brownskin APPLY between rough and finished floors as barrier against dust, dirt and "wet". Place on finished floors during construction.
SPECIFICATIONS: 27 pound rolls; 36 inches wide, 500 square feet. Also available on special order in 48 inch and 60 inch widths, 1000 square feet.

5 Angier **VAPORSEAL** APPLY vertically to warm side of insulation to seal out harmful moisture-vapor. Short ends may be applied to door and window openings for flashing.

SPECIFICATIONS: 34 pound rolls; 36 inches wide, 500 square feet. Also available on special order in 48 inch and 60 inch widths, 1000 square feet.

Angier **RFD** (Reinforced for Durability) APPLY as liner for barns, temporary silos, implement and haystack covers and where ever a tough, moisture-proofed protective paper is needed on the farm.

SPECIFICATIONS: 23 pound rolls; 48 inches wide, 352 square feet.

**Also available in equal cuts into the 60" width without waste.*

ANGIER CORPORATION FRAMINGHAM MASS. *Since 1895*

WRITE FOR COMPLETE APPLICATION DATA SHEETS

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Weathercap

PROTECTIVE BUILDING PAPER

ASPHALT LAMINATED

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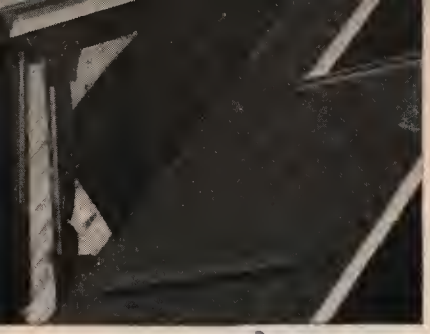


Will NOT crack

Will NOT tear

Will NOT rend

Will NOT pull loose from nailing

Will NOT scuff in use

Weathercap

DEPENDABILITY

The GRAHAM PAPER COMPANY, who have been selected by Thilmany as their selling agents, have been in business continuously since 1855. They have established an enviable reputation throughout the United States for the high quality and dependability of the products which they market.

WIDE DISTRIBUTION

Weathercap Building Paper Products are manufactured by Thilmany Pulp and Paper Co., Kaukauna, Wis. They are accessible through GRAHAM PAPER COMPANY, selling agents, who maintain adequate warehouse stocks strategically located throughout the Company's marketing territory.

MATERIALS

Weathercap Waterproof Paper is made from selected, laboratory controlled products.

The Paper Jacketing—The outer surfaces are blankets of Kraft paper made from Strong Northern Pine.

The Asphalt Coatings and Saturation—Each sheet of Kraft is coated with high melt point Blended Asphalts.

The Reinforcement—Crisscrossed between the Asphalt Coated Kraft are ribs of Super-test Cords.

ADVANTAGES

To those familiar with the diversified need and use of protective building papers in the building industry the advantages of the permanency and stability of Weathercap are obvious. Outstanding are the following characteristics:

Strong—Tearproof—Weathercap is tough. It can be subjected to handling. Four strong cords along the edges of the sheet provide a tough, tearproof nailing area.

Waterproof—Vaporproof—Weathercap is positively waterproof. Moisture vapor transmission is extremely low.

Pliable—Weathercap will fit tightly around corners and uneven surfaces. Balanced materials prevent breaking, cracking in cold weather.

Rodent and Verminproof—Due to the asphalt impregnation, it is distinctly distasteful to rodents and vermin.

Clean—Due to the high melt point asphalt used, Weathercap will not bleed in contact with absorbent materials.

ADAPTABILITY

Careful analysis of the wide range of Weathercap products is convincing evidence that there is a Weathercap Building Paper admirably adapted to every building industry need.

Sheathing Paper—Its strength and waterproof qualities assure effectiveness as a sheathing paper for the full life of the building.

Vapor Seal—Its low vapor transmission has proven it the ideal vapor seal applied on the warm side of the wall to protect wall insulation in air conditioned buildings.

Concrete Curing—Its outstanding strength and waterproofness make it an ideal and economical covering for concrete curing.

Waterproofing Fabric—It has been successfully used as a waterproofing coarse fabric.

Temporary Protection—Its inherent indestructibility under severe treatment make it the ideal material with a multiplicity of uses for temporary protection.

A PROTECTIVE ASPHALT LAMINATED BUILDING PAPER

REINFORCED PAPERS

9c / 1b

Heavy Reinforced Weathercap

Specifications

2 sheets 30-lb. Northern Kraft, one of which is moldproofed and weatherproof treated, imbedded in two coatings of asphalt with reinforcements of cords woven in ½-in. square mesh, and extra edge strings.

Characteristics

A heavy duty protective paper with extra strength, waterproofness, and pliability for construction sheathing and covers.

Complies with Federal Specification UU-P-147 Class A, Type IV.

Standard Roll

36-inch width—500 square feet, 30 lb.

Special Rolls

Widths—36, 48, 60, 72, 84, 96, 108, 120 in.

Length—100 lineal yards.

Medium Reinforced Weathercap

Specifications

2 sheets 30-lb. Northern Kraft combined with heavy, pliable Asphalt and Super Test Cords in 2-in. diamond mesh and 1 in. longitudinal spaced and 4 strings each edge.

Characteristics

A general utility protective paper—strong and waterproof. Strong imbeddcd cords resist tear and pressure. Ideal for cement curing purposes.

Complies with Federal Specification UU-P-147 Class B, Type IV.

Standard Roll

36-inch width—500 square feet, 25 lb.

Special Rolls

Widths—36, 48, 60, 72, 84 in.
Length—100 lineal yards.

PLAIN PAPERS

Plain String Edge Weathercap Building Paper

Specifications

2 sheets 30-lb. Northern Kraft combined with vaporproof Asphalt and three strings each edge.

Characteristics

A kraft duplex building paper adapted for underflooring, under shingles, sheathing paper.

Complies with Federal Specification UU-P-147 Class A, Type I.

Standard Roll

36-inch width—500 square feet, 20 lbs.

Special Rolls

Widths—36, 48, 60, 72, 84, 96, 108 and 120 in.

Length—100 lineal yards.

Weathercap Sheathing Paper

Specifications

Single sheet of Northern Kraft—60# Basis saturated to 90# Basis.

FEDERAL HOUSING SPECIFICATION BREATHER SHEET

Characteristics

A Breather Sheet to Comply with Federal Specification UU-P-147 Class D.

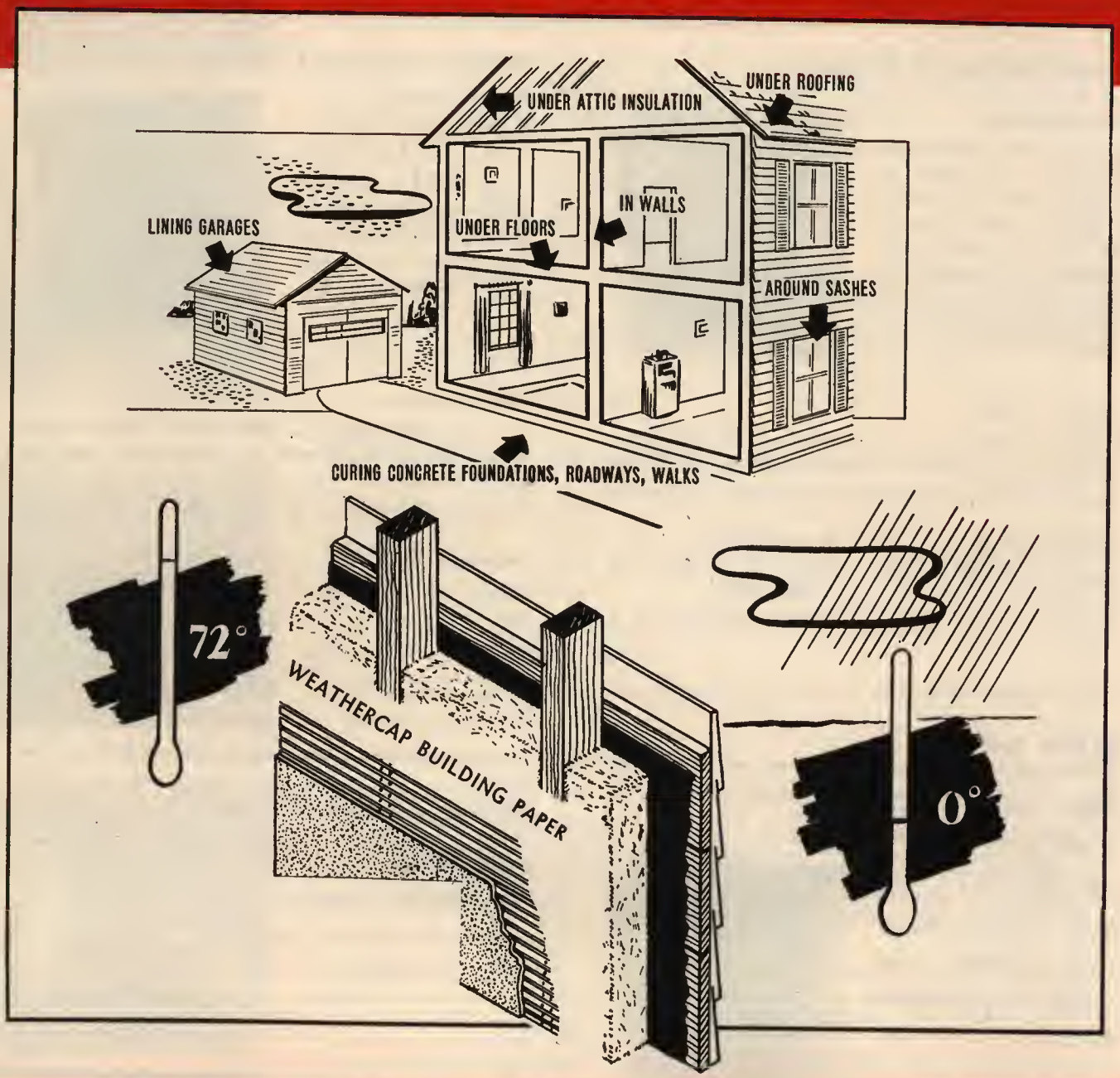
Standard Roll

36 and 48-inch width—500 square feet, 15 lb.

Special Rolls

Widths—36, 48 and 60 in.
Length—100 lineal yards.

SOME OF THE MANY PROTECTIVE USES OF Weathercap . . . . . .



Graham Paper Company

Home Office: 1014-1030 Spruce Street, ST. LOUIS, MISSOURI

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THILMANY PULP AND PAPER COMPANY

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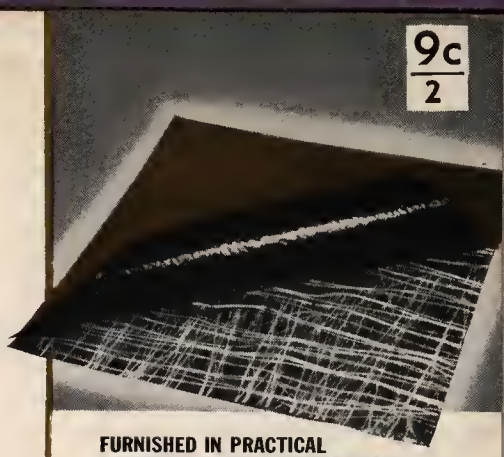
Specify and Use **ALL THREE**★

SISALKRAFT PRODUCTS

FOR *Lifelong* QUALITY PROTECTION and COMFORT IN ALL TYPES OF MODERN CONSTRUCTION



★1: SISALKRAFT *The Better BUILDING PAPER*

SISALKRAFT is well known throughout the building industry as a highly efficient building paper. While its price is a little more than that of other building papers, the cost of applying SISALKRAFT is much less, because its great strength permits unbroken application without the use of batten strips or shower-nailing.

SISALKRAFT is tough, reinforced, waterproof, windproof, dustproof. The reinforcement consists of two layers of cross-laid sisal fibres that are tough, non-elastic, so closely spaced that there is over a half mile of fibres to the square yard. On both sides of the fibres, a layer of asphalt has been applied, to completely embed the fibres and to bond them to the top and bottom layers of tough kraft paper. The kraft is specially treated to insure clean, non-staining surfaces, which prevent the asphalt from oxidizing, and provide resistance to scuffing, dry-rot, mildew, and shrinkage.

SISALKRAFT provides an effective barrier to infiltration of cold air, wind, dirt, and rain. FHA-approved as a moisture barrier.

See pages 3 and 4 for uses and specifications.

★2: SISALATION *Low-Cost REFLECTIVE INSULATION & MOISTURE-VAPOR BARRIER*

SISALATION is basically SISALKRAFT coated on each side with pure aluminum, inseparably bonded to the SISALKRAFT . . . thus producing a hard-surfaced, continuous aluminum film, with no voids, ruptures, or openings. SISALATION is highly reflective, moisture resistant, windproof, dustproof, non-absorbent, durable, tough . . . resulting in an efficient, low-cost reflective insulation and moisture-vapor barrier.

SISALATION provides all the insulation necessary for the sidewalls of any home, expensive or inexpensive. SISALATION does this by reflecting radiant heat and by creating two dead-air spaces between the exterior and interior walls. SISALATION provides this insulation at a saving in cost of 50% (or more, in many cases), as compared with cost of other types of insulation. Since 36" SISALATION covers TWO stud spaces at the same time, installation is quick and easy. Meets FHA vapor-barrier requirements, Class A, Fed. Spec. UU-P-147.

See next page for uses and specifications.

★3: COPPER-ARMORED SISALKRAFT

consists of a sheet of pure Anaconda copper electro-deposited in a continuous, unbroken layer, reinforced with tough, cross-laid sisal fibres, and bonded with two layers of special asphalt to heavy creped kraft paper. It provides protective quality similar to that of much heavier sheet copper, plus the great strength and pliability of SISALKRAFT. COPPER-ARMORED SISALKRAFT will not kink, crack, or tear. Its cost is about 75% less than that of heavy-gauge sheet copper. It has much greater flexibility than sheet copper. Any workman can apply it.

See page 4 for uses.

FURNISHED IN PRACTICAL WIDTHS FOR ALL REQUIREMENTS

SISALKRAFT:

Furnished in rolls:

36" wide containing 225 and 500 sq. ft.
48" wide containing 666 sq. ft.
60" wide containing 1000 and 1500 sq. ft.
72" wide containing 1000 and 1800 sq. ft.
84" wide containing 1000 and 2100 sq. ft.
96" wide containing 1200 and 2400 sq. ft.

SISALKRAFT "BLANKETS"

Widths varying from 8'6" to 26'6". Lengths, up to 60' (Write for detailed sizes).

SEE STANDARD SPECIFICATIONS

SISALATION:

Furnished in rolls:

36" wide, containing 500 sq. ft.
48" wide, containing 666 sq. ft.

COPPER-ARMORED SISALKRAFT

Furnished in rolls, 120 feet long:

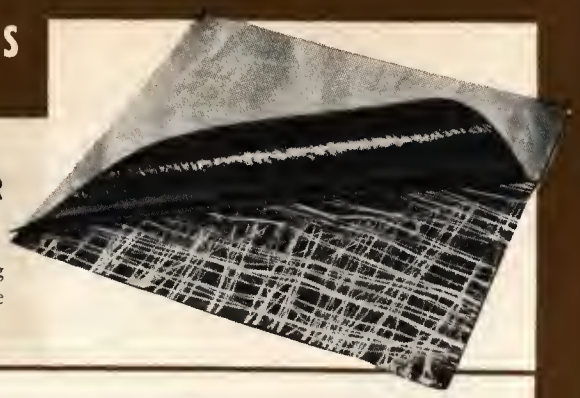
*Weights**	*Widths*
1 oz.	6", 10", 12", 15" 20", 30", 60"
2 oz.	4", 10", 12", 15" 20", 30", 60"
3 oz.	10", 12", 15" 20", 30", 60"

*(Weight of electro-deposit Anaconda Copper per square foot).

Permanent DRY WALL Construction with SISALKRAFT and SISALATION

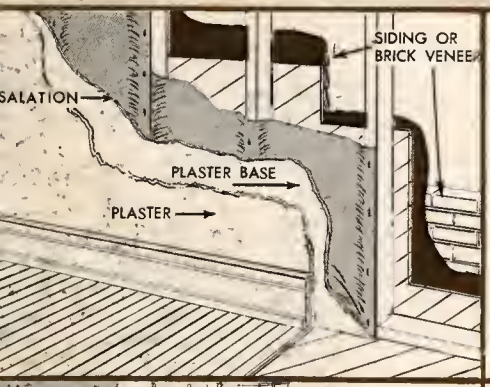
This modern adaptation of SISALATION and SISALKRAFT assures permanent DRY WALL construction, plus INSULATION, at minimum material and labor costs. The SISALKRAFT stops passage of harmful wind-driven rains into walls, by "weather-sealing" from the outside, and the interior SISALATION prevents harmful moisture-vapor from passing through sidewalls, by "vapor-sealing" from the inside. In addition, adequate reflective insulation is provided to help keep the interior warmer in winter, cooler in summer.

SISALATION STANDARD SPECIFICATIONS



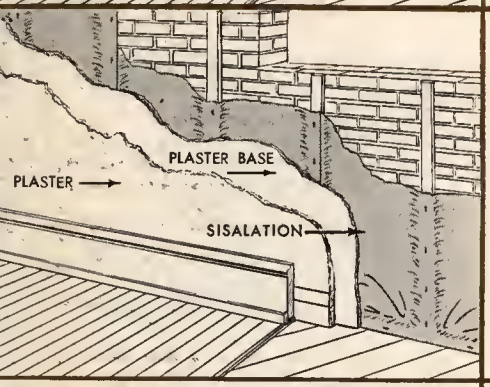
Low-Cost REFLECTIVE INSULATION plus MOISTURE-VAPOR BARRIER For New and Existing Homes and Other Structures:

SISALATION is a high quality, reflective insulation, created by applying a special coating of high-grade aluminum to time-tested SISALKRAFT. Millions of square feet of reflective insulation are in service.



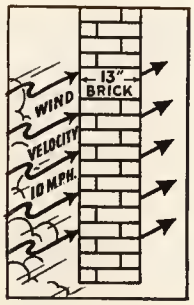
For SIDEWALL INSULATION and VAPOR BARRIER: *Frame or Brick Veneer:* 36-inch SISALATION shall be applied vertically over the inside face of the studs. (Since 36″ SISALATION more than reaches across two 16″ stud-spaces, it permits "bowing-in" between studs, thus creating two dead-air spaces.) The SISALATION sheets are to be lapped the full width of every other stud, and fastened to every stud with staples or flat-headed nails, spaced approximately 12″ apart. The excess material shall be bowed into each area between the studs, to provide maximum insulating efficiency. Extend the SISALATION over plate and sill.

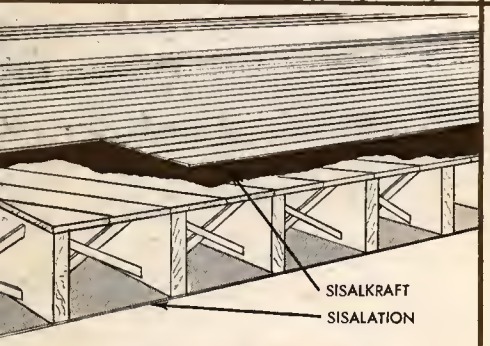
SISALATION *is equivalent in heat-saving values to about ¾-inch of flexible or rigid types of quality insulation . . . based on M.I.T. tests on sidewalls constructed with a single layer of reflective* SISALATION *applied in the stud area.*



For SIDEWALL INSULATION and VAPOR BARRIER: *Solid Brick, Concrete Block or Cinder Block:* 36-inch or 48-inch SISALATION shall be applied vertically over the inside face of the furring strips. Sheets shall be lapped on the furring strips and fastened to every strip with staples or flat-headed nails, spaced approximately 12″ apart. Extend the SISALATION over plate and sill.

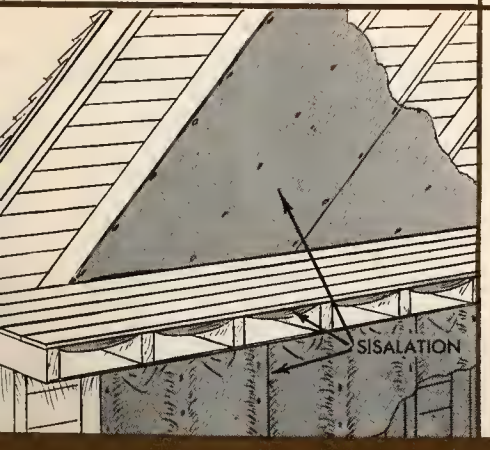
In addition, SISALATION provides a permanent barrier to air infiltration. See diagram at right (tests by A. S. of H. & V. E. show 13″ brick wall will pass 39 cu. ft. of air per hour, over a 10 sq. ft. area, with wind velocity of 10 m.p.h.).





For FLOOR INSULATION and VAPOR BARRIER: SISALATION shall be applied lengthwise along the under side of the floor joists. The sheets are to be lapped at least the full width of the joist, and fastened to each joist with staples or flat-headed nails, spaced approximately 12″ apart.

NOTE: In structural sketch at left, in addition to SISALATION in the position shown, SISALKRAFT is shown applied over the sub-flooring, as specified on next page in paragraph "For WOOD FLOORING".

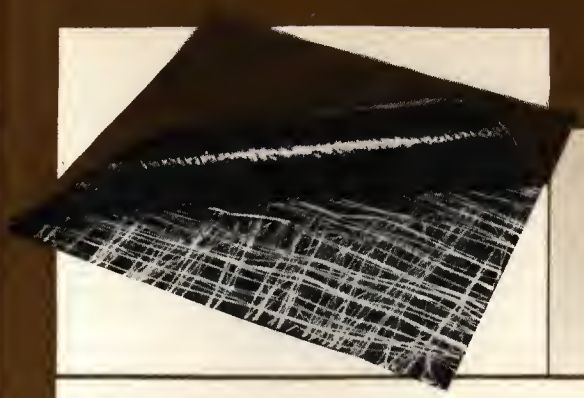


For CEILING INSULATION and VAPOR BARRIER: 48-inch SISALATION shall be applied lengthwise along the under side of the ceiling joists. The sheets are to be lapped at least the full width of the joist and attached with staples, or flat-headed nails, spaced approximately 12″ apart.

For ATTIC LINING—INSULATION and MOISTURE STOP: *For New Homes:* 48-inch SISALATION shall be applied vertically along the under side of the roof rafters. The sheets are to be applied smoothly, lapped at least the full width of the joist, and fastened to each rafter with staples or flat-headed nails, spaced approximately 12″ apart. Instead of storing up summer heat, SISALATION immediately reflects it, thus eliminating emission of stored up heat and keeping interiors cooler.

For *EXISTING HOMES:* 48-inch SISALATION for attic lining of existing homes shall be applied in the same manner as in new installations (not to be bowed in between rafters).

Write for AIA Files and Samples: Address: **The SISALKRAFT Co.,** CHICAGO 6; NEW YORK 17; SAN FRANCISCO 5.



STANDARD SPECIFICATIONS SISALKRAFT

THE BETTER BUILDING PAPER FOR MANY PURPOSES

Tough, reinforced, waterproof, windproof, dustproof, SISALKRAFT assures lifelong service in protection, comfort, and safeguarding quality construction. Every home deserves SISALKRAFT protection . . . and every home, small or large, can AFFORD it!

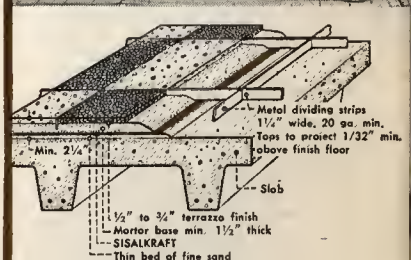
For OUTER WALLS: OVER SHEATHING and for FLASHING: All exterior wall sheathing, wood or other, shall be covered with one layer of SISALKRAFT*, applied horizontally, using large-headed galvanized nails on weather laps of not less than 4 inches. The paper shall be carried over the studs, sills, heads, and jambs of all openings and around all corner posts for a distance of not less than 9 inches each way. Shower-nailing may be eliminated and battens need not be employed. There shall be no more paper applied in a day than will be covered that same day.

As a VAPOR-BARRIER *(FHA-approved):* On interior walls, SISALKRAFT* may be used as a vapor-barrier and shall be applied vertically, directly over the studs, lapping on alternate stud faces. (When SISALKRAFT is thus used, plastering may be omitted under wood wainscots, paneling or vertical boarding of interior walls, if the economy permitted by such construction is desired by the owner).

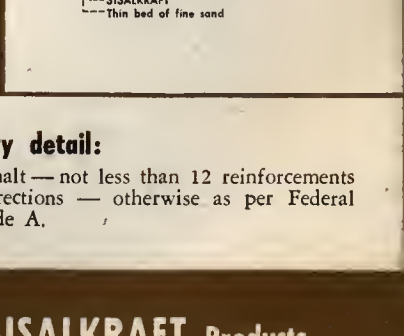
For WOOD FLOORING: Moisture Barrier to help prevent warping, cupping or creaking. Over all sub-floors apply one layer of SISALKRAFT* reinforced waterproof building paper, applied to run at right angles to the direction of the finished flooring, and carried up in back of the base course for the full width of it, to provide a moisture-stop and cold-air stop. All laps shall be not less than 4 inches. Backpainting of the base is not required, since the SISALKRAFT back of it protects the base.

OVER SUBFILL (Under concrete floor slab): To prevent displacement of the subfill by workmen during the concrete pouring operation, and to prevent the entrance of cement into the voids of the subfill, cover the subfill completely with SISALKRAFT* laid in the widest practicable widths, lapped at least 9 inches. (This helps to retain the ingredients of the concrete mix in proper proportions; assures better results; saves much of the cost of the SISALKRAFT by preventing excessive loss of cement that ordinarily runs into voids in the subfill).

UNDER PANEL-RADIANT HEATING FLOORS: For modern basementless homes where panel-radiant heating is used, SISALKRAFT should be laid over the leveled ground before the reinforcement rods and heating tubes are placed in position and the concrete slabs are poured. Helps to avoid waste of concrete and helps repel moisture-seepage through floor. If SISALKRAFT isn't used, wet concrete flows into crevices and holes of the subfill, and forms long "fingers" that later draw moisture into the floor slab.



For TERRAZZO FLOORS — BOND-BREAKER ON SAND CUSHION: To minimize possibility of construction cracks, cover the hardened base slab with a thin layer of sand (about ¼" thick). Over this layer of sand, place a layer of SISALKRAFT* lapped 6 inches at joints. Because of its great strength, SISALKRAFT is not broken or torn by workmen walking over it, and none of the wet mortar mixture gets into the sand.



CURING TERRAZZO WORK: At least six days of curing is advisable before grinding. During this curing period, cover the terrazzo surface with SISALKRAFT*, lapped at least 4", and all laps sealed.

PROTECTION OF FLOORING: Over the surface of any finished floor, (wood, tile or cement), place a layer of SISALKRAFT*, with laps sealed, to keep floors in good condition until building is ready for occupancy.

*SISALKRAFT meets these required specifications in every detail:

BUILDING PAPER shall consist of two sheets of a 30 lb. No. 1 quality kraft, treated to resist the fungus of dry rot, cemented together with asphalt, and shall be reinforced with fibres completely embedded in the asphalt — not less than 12 reinforcements per square inch in both directions — otherwise as per Federal Specification UU-P-536, Grade A.

Trained SISALKRAFT representatives available — 20,000 Lumber Dealers stock SISALKRAFT Products

SISALKRAFT STANDARD SPECIFICATIONS (continued from preceding page)

TEST RESULTS: Photos show (left) concrete slab cured by the SISALKRAFT Method, so hard and free from surface-dusting that it successfully resisted severe sand-blasting: whereas (right) concrete slab made from same mix, but allowed to dry without SISALKRAFT protection, shows much surface damage after similar sand-blasting.

FOR CURING CONCRETE FLOORS, DRIVEWAYS, SIDEWALKS: For Curing and Protection: As soon after finishing as may be done without damage, cover the concrete surface with one layer of SISALKRAFT, laid in the widest possible widths, with laps at least 4 inches wide, continuously sealed with tape or glue, as recommended by the manufacturer (factory-fabricated SISALKRAFT "blankets" are available in widths from 8'6" to 26'6" by 60' long, or in special sizes as required).

"THE SISALKRAFT METHOD" OF CONCRETE CURING

The SISALKRAFT Method of Concrete Curing does two jobs well, at the cost of one: 1. It cures concrete better (see sand-blast evidence at left). 2. It protects the concrete from frost, debris, and construction stains.

Automatic, natural curing is assured because SISALKRAFT seals-in the water of the concrete-mix and permits proper chemical combination with cement and other ingredients of the mix.

SISALKRAFT is economical; can be re-rolled and used many times over for concrete curing.

The SISALKRAFT Method of Concrete Curing is highly recommended for curing of floors on single-story and multi-story jobs, roads, driveways, basement floors, sidewalks and stairs. A uniform cure, plus protection during the process, is of utmost importance. Whenever the problem of concrete curing arises, remember SISALKRAFT.

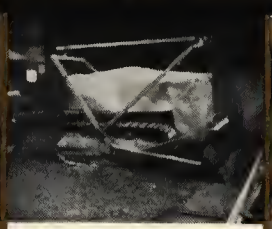
SISALKRAFT FOR PROTECTION OF MATERIALS AND EQUIPMENT FROM RAIN AND OTHER BAD WEATHER CONDITIONS

Protecting Cement

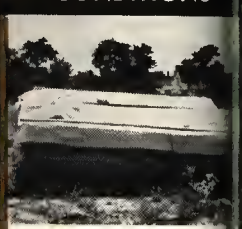
Protecting Steel

Protecting Stock

Temporary Shelters

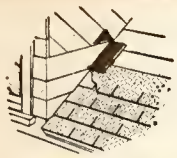


Protecting Machinery

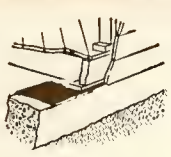


Protecting Stock Pile

COPPER-ARMORED SISALKRAFT

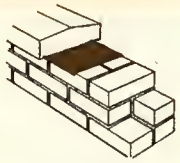


Roof Flashing

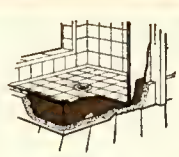


Dampcoursing

Spandrel Beam Waterproofing



Parapet Flashing



Shower Stall Waterproofing

COPPER-ARMORED SISALKRAFT: For Flashing Door and Window and other Openings • Drip Cap Flashing • Corner Flashing • Flashing Roof and Sidewall Junctures • Mitered Roof Flashing • Ridge Roll Flashing • Foundation Dampcoursing • Termite Barriers • Apron Dampcoursing • Membrane Waterproofing • Flashing Parapet Walls • Spandrel Waterproofing • Waterproofing Shower Stalls, Built-up roofs, etc.

Copper-Armored Sisalkraft provides the protective advantages of pure copper at a saving of about 75% of the cost of copper sheets. The SISALKRAFT base reinforces the electro-deposited thin sheet of pure copper (free from pinholes or other openings or breaks). This tough SISALKRAFT reinforcement gives the copper sheet the necessary strength to assure rapid, undamaged application. Its flexibility eliminates danger of kinking or cracking. Available in sizes as listed on Page 1 of this bulletin.

Copper Armored SISALKRAFT also successfully used for electrostatic shielding.

WRITE FOR COMPLETE DETAILED SPECIFICATIONS AND SAMPLES

SISALKRAFT PRODUCTS are stocked by 20,000 Lumber Dealers throughout the U. S. A.

thermal insulation

section 10

building insulation a

cold storage insulation b

high temperature insulation c

underground pipe insulation d

AIR-O-CEL*

VAPOR BARRIER

Reflective

INSULATION BOARD

plus

THE *Thermal* PRINCIPLE

DEAD AIR space acts as a buffer between inside and outside temperatures.

AIR SPACE WALLS ARE REFLECTIVE

DEAD AIR SPACE

The well-known vacuum bottle—the same as found in father's lunch box—graphically illustrates the thermal principle. Hot or cold liquids poured into the bottle hold their temperatures for hours due to its "dead air" space between inner and outer shells.

The only board that combines Reflective Thermal Insulation with a Positive Vapor Barrier

"IF IT'S INSULATION...IT'S AIR CELLS"

© 1946 TRADE MARK REGISTERED U.S. AND CANADIAN PATENT OFFICES

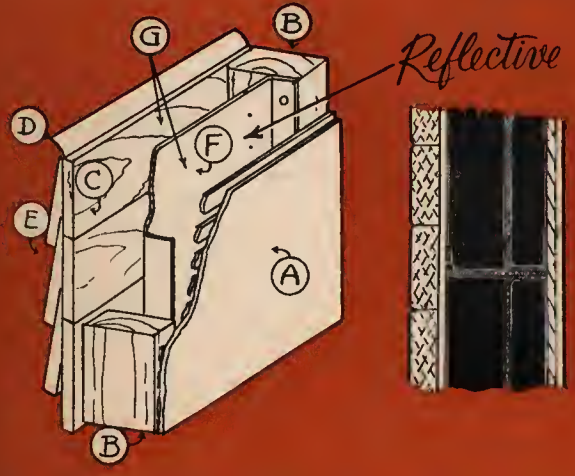
AIR-O-CEL "Vapor Barrier"

GIVES MAXIMUM INSULATION EFFICIENCY

SOLID ASPHALT FILM BETWEEN LAYERS PROVIDES A POSITIVE VAPOR BARRIER

Air-O-Cel Reflective Insulation Board is an asphalt saturated, corrugated board of the wood fiber base type, with a sheet of heavy, highly reflective mineralized surface, laminated to its face. It is the one board that honestly provides a positive vapor barrier—a heavy, solid and unbroken film of asphalt between the asphalt saturated board and the laminated reflective surface. Properly installed, Air-O-Cel board offers the closest to a perfect thermal insulation possible, for it forms a dead air buffer between interior and exterior temperatures —the oldest and only efficient insulation principle known. Combine this feature with Air-O-Cel's positive vapor barrier construction and you have an insulation material that cannot be matched for all around insulation efficiency.

AIR-O-CEL MAKES A *THERMAL UNIT* OF THE ROOF, WALL OR CEILING

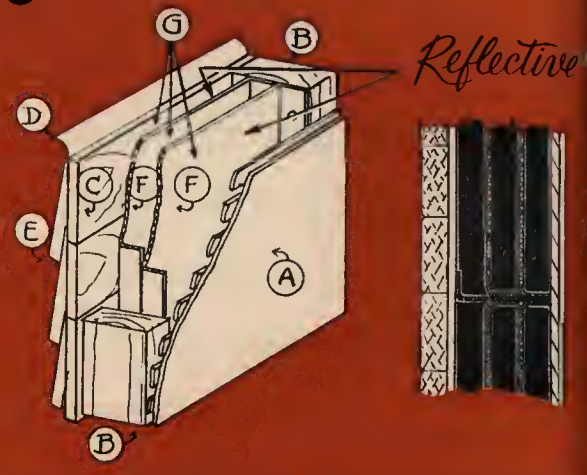


WALL INSULATED WITH SINGLE AIR-O-CEL INSTALLATION

Illustration of single Air-O-Cel Installation between inner and outer walls. Note the double thermal spaces and how Air-O-Cel acts as a vapor barrier between the inner and outer walls.

Air-O-Cel Vapor Barrier Reflective Insulation Board when installed between studs, joists or rafters, forms an air tight, thermal pocket of motionless air. Moving air (convection) transfers heat faster. Dead air in the Air-O-Cel thermal pocket retards the heat flow. Reflective surface adds to the efficiency by reflecting 95% of the heat rays—a perfect thermal unit—the same as a vacuum bottle.

A. Wood Lath and Plaster
B. Studding
C. Sheathing
D. Building Paper
E. Lap Siding
F. Air-O-Cel Reflective Insulation Board
G. Air-O-Cel Thermal Spaces



WALL INSULATED WITH DOUBLE AIR-O-CEL INSTALLATION

Two layers of Air-O-Cel Reflective Insulation Board installed between the walls, gives triple the insulation efficiency with three, always uniform, thermal spaces. With the reflective surface of the outer board facing the exterior and the reflective surface of the inner board facing the interior, top efficiency is gained for both winter and summer insulation.

"GOOD BUILDINGS DESERVE GOOD INSULATION,

Reflective INSULATION BOARD

CANNOT SAG, SETTLE, FALL OR SOAK UP MOISTURE

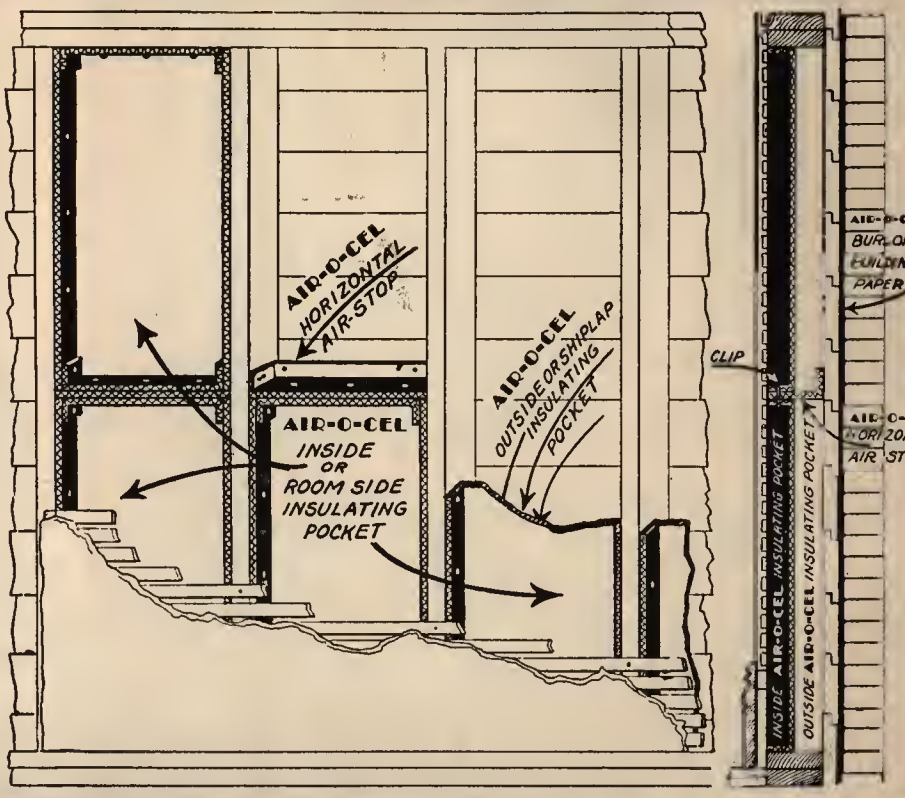
Air-O-Cel Vapor Barrier Reflective Insulation Board is tough, rigid and durable—it cannot settle, sag or fall. Once installed, it stays put and provides the maximum in dependable insulation for the life of the building.

Since Air-O-Cel Reflective Insulation Board is thoroughly saturated with asphalt and carries a solid film of asphalt between its layers, it is a positive moisture resistant—it cannot soak up moisture or lose its rigidity.

ELECTRICAL CONDUCTIVITY is same as DRY wood. Does not affect radio waves.

SURPASSES F. H. A. SPECIFICATION NO. 771

F. H. A. Specification No. 771 calls for a vapor barrier in all frame walls of conventional or similar construction where insulation is added within the stud spaces. Air-O-Cel Backer Board meets and surpasses all requirements of Specification No. 771 by more than 60% (Tappi Method). Write for copy of laboratory reports that prove that fact—There's no obligation.



HEAT LOSS CO-EFFICIENTS

...l transmission figures calculated as recommended by ...1945 Guide of the American Society of Heating and ...ilating Engineers. Hot plate test by J. C. Peebles of ...rmour Institute of Technology.

...ues expressed in BTU per hour per Sq. Ft. per degree ...erence in temperature between air on 2 sides outside ...d velocity 15 Mph.

...INGS

...ical-Wood Joists (2" x 6"), Rock Lath Plaster. ...lective surface must face interior.

	Attic not floored	Attic floored
...Insulation	.61	.28
...hickness AIR-O-CEL Reflective ...ingle air space) 60% reduction in ...te of heat flow	.13	.10
...hickness AIR-O-CEL Reflective ...louble air space)	.07	.06

...LLS

...ical-Wood Sheathing (2" x 4") Studs, Rock Lath, ...ter. Reflective surface must face interior.

Exterior Wall	Wood Siding	Wood Shingle	Stucco	Brick
...Insulation	.25	.25	.30	.29
...hickness AIR-O-CEL ...eflective (Double air ...ace) 70% reduction	.10	.10	.12	.11
...hickness AIR-O-CEL ...eflective (Triple air ...ace)	.07	.07	.08	.08

...OFS

...ical-Wood Rafters (2" x 6"), Rock Lath, Plaster Cell- ...wer Side. Reflective surface must face roof boards.

	Wood Shingles or wood roof board	Asphalt or roll roofing on solid wood roof board
...nsulation	.29	.31
...-O-CEL Reflective ...ard (1½" air space)	.11	.12

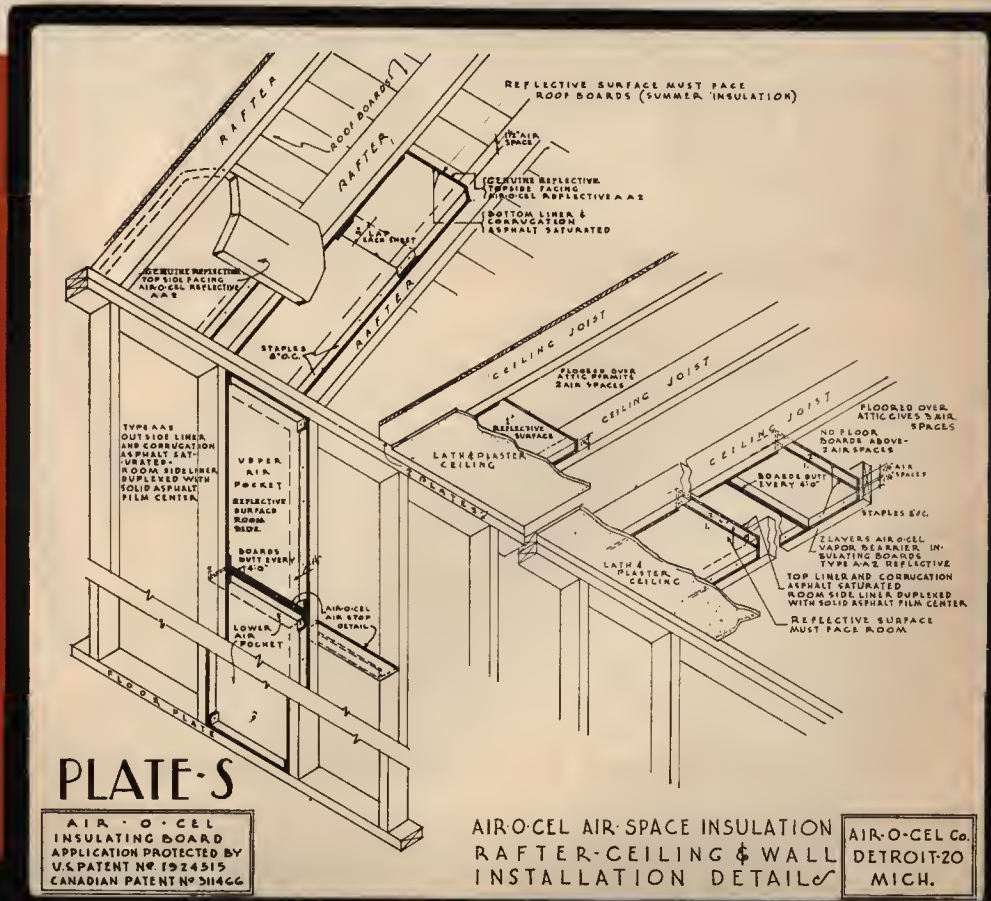


PLATE-S

AIR-O-CEL AIR SPACE INSULATION
RAFTER-CEILING & WALL
INSTALLATION DETAILS

AIR-O-CEL INSULATING BOARD APPLICATION PROTECTED BY U.S. PATENT No. 1924515 CANADIAN PATENT No. 311466

AIR-O-CEL Co.
DETROIT-20
MICH.

GOOD INSULATION IS AIR CELLS"

AIR-O-CEL "VAPOR-BARRIER" *Reflective* INSULATION BOARD

QUICK and EASY TO INSTALL

Air-O-Cel Vapor Barrier Reflective Insulation Board is shipped from the factory, in easy to handle sheets, pre-cut to fit between all standard studding, joists or rafters. Board can be easily cut with a linoleum knife for installation in off-standard areas. Board may be fastened in place with flat headed rock lath or roofing nails. Wire staples and stapling machines may be used for speedier installation. Air-O-Cel Reflective Board is simple to install. High priced labor is not needed.

SIZES

17″ x 51″ flanged and slotted—25 sheets—150 sq. ft. wrapped:—16″ O. C. and under.

25″ x 51″ flanged and slotted—25 sheets—225 sq. ft. wrapped:—24″ O. C. and under

36″ x 48″—flat sheets—25 sheets—300 sq. ft.

Special Sizes Available

SOLID MASONRY and BLOCK WALLS

Air-O-Cel Vapor Barrier Reflective Insulation Board applied against a masonry or block wall with the reflective surface facing the interior reduces the high heat flow by 60% and stops moisture penetration. Furring strips applied over the Air-O-Cel board, holds it permanently in place and provides an air space between the lath and the reflective surface of the board. The asphalt film between the layers of the Air-O-Cel board provides a positive vapor barrier and damp-proofs the wall. Air-O-Cel Board is applied by the carpenter.

THERMAL AIR-SPACE TYPE INSULATION—RECOMMENDED SPECIFICATIONS

EXTERIOR WALLS • AIR-O-CEL REFLECTIVE VAPOR-BARRIER Insulating Board (Type AA2) shall be installed in exterior walls with flanges bent and edge of flanges to be set flush with inner line of studs. AIR-O-CEL air stops to be installed at line of horizontal flange, dividing upper and lower sections. AIR-O-CEL air-stop to be full depth of stud. Nail flanges securely to side of stud with ½″ wire staples placed not more than 18″ apart. Beam fill with AIR-O-CEL AA2 REFLECTIVE Board between all floors exposed to heated area. All exterior walls adjacent to occupied quarters shall be insulated. Fill all irregular interstices with Wool, particularly around all windows and doors, between rough opening and frame. Reflective surface must face interior of occupied quarters.

CEILINGS • AIR-O-CEL REFLECTIVE VAPOR-BARRIER Insulating Board (Type AA2) to be installed with outer edge of flange flush with bottom edge of ceiling joist. Abutting side of flange shall be tight. All ceilings exposed to attic space shall be insulated. When portion of ceiling is exposed to attic and remaining ceiling portions are under finished rooms provide AIR-O-CEL Vapor-Seal Board, vertical air stop set on a line with walls of rooms above and being the full depth of the joist. Ceiling cut-off or slope to be considered as ceiling. Reflective surface to face room of occupied quarters.

RAFTERS • All roof areas to be covered with AIR-O-CEL REFLECTIVE VAPOR-BARRIER Board (Type AA2). The board shall be installed between rafters with flanges bent and side of flange stapled securely to side of rafter with ½″ wire staples placed not more than 12″ apart. The reflective surface shall face roof board with an air space of not more than 1½″ from roof boards. The board shall be end-lapped not less than 6″.

NOTE:

FOR WINTER INSULATION: Reflective surface to face room of heated occupied quarters: as close as possible to point of occupied quarters which are heated.

FOR SUMMER INSULATION: Reflective surface to face roof boards: as close as possible to point of entry.

WRITE FOR TEST DATA, FREE MONTHLY BULLETIN and other FREE INFORMATION

AIR-O-CEL COMPANY

22000 WOODWARD • DETROIT 20, MICHIGAN

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Mr. Architect:

You can do a better insulation job, at less cost, with ALFOL aluminum foil insulation. We make no fantastic claims. ALFOL is a better insulation-and has been for almost a quarter of a century-because:

1. ALFOL instantly and continuously reflects 95% of radiant heat-the largest factor in heat loss.
2. ALFOL provides a positive vapor barrier in one product and in one operation.
3. ALFOL costs less-for material and application.

It will pay you to consider ALFOL for your next job. If you need additional information, we will gladly supply it.

Sincerely
REFLECTAL CORPORATION

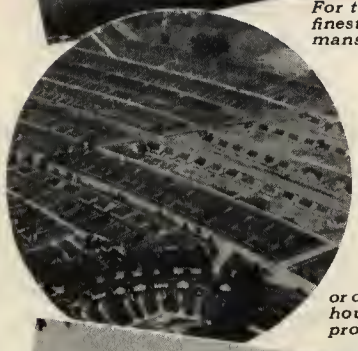
building blanket insulation

alfol

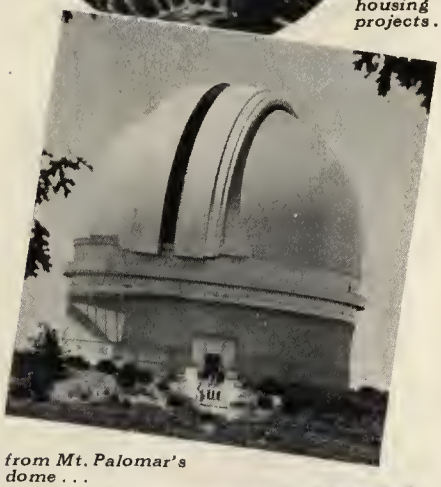
2 ROLLS (500 SQ. FT.)
WEIGH LESS THAN 20 LBS. EACH
EASILY CARRIED BY ONE MAN

ALFOL BUILDING BLANKET INSULATION

For the finest mansions . .



or on large housing projects . .



from Mt. Palomar's dome . . .

to this garage installation . . ALFOL has done a real job.

TESTED—PROVED—ACCEPTED

For almost a quarter of a century, ALFOL Insulation has steadily gained recognition and acceptance as the leader in its field. Testing laboratories such as M.I.T., Armour Research Foundation, and the U. S. Bureau of Standards prove ALFOL'S high efficiency. More than 25 million square feet have been used by the U. S. Navy; many of the largest FHA-financed housing developments in the country are insulated with ALFOL; the nation's biggest house-builder uses ALFOL; the scientific wonder of the world—the dome of Mt. Palomar's 200 inch telescope—is completely ALFOL insulated; highest references and testimonials from architects, builders and homeowners enthusiastically endorse it.

ALFOL IS PREMIUM INSULATION

Check the advantages of ALFOL. Unlike old fashioned insulation materials, ALFOL'S reflective aluminum foil surface instantly and continuously reflects 95% of all radiant heat. The instant heat strikes its reflective surface, ALFOL goes to work—in winter to keep heat in; in summer to keep it out. In addition to high insulating efficiency, ALFOL offers these premium application features—light weight, durability, unusual cleanliness, permanence. It will not sag or settle and is free from dust, splinters and grit. ALFOL is easy to ship, store and handle.

ALFOL DOES TWO JOBS IN ONE

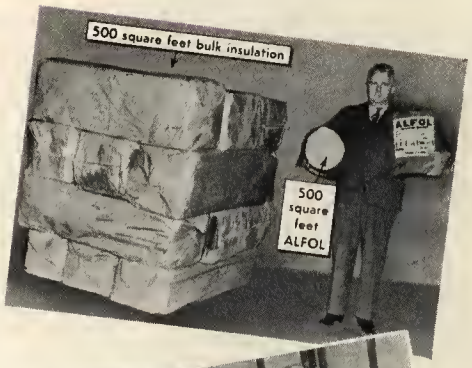
When you specify ALFOL, you get a highly efficient insulation *plus* a positive vapor barrier in one complete handy package—applied in one simple operation. Unlike ordinary insulation, ALFOL will not absorb or pass moisture because (1) ALFOL is made of pure aluminum foil which cannot possibly hold moisture, thus preventing any increase in heat loss because of dampness. (2) ALFOL building blanket is applied stud to stud in one continuous sheet from floor to ceiling without any break.

Better Insulation at Less Cost

REFLECTS 95% RADIANT HEAT . . . . .
PROVIDES A POSITIVE VAPOR BARRIER } *in One operation!*

STORAGE AND HANDLING SIMPLIFIED . . . COSTS REDUCED

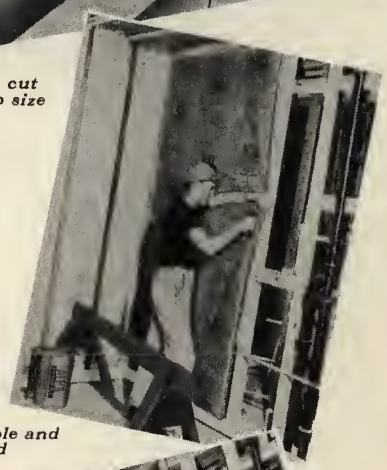
ALFOL is light weight . . . compact. ALFOL weighs less than 1/10 of a pound per square foot. 500 square feet of ALFOL can easily be carried by one man. ALFOL'S light weight reduces the usual insulation load on ceiling rafters to almost nothing. Consider this! A standard railroad car holds half a million square feet of ALFOL. It would require at least 20 of the same cars to hold an equal amount of heavy, mass-type insulation. These are facts . . . facts that mean great saving because of reduced storage and handling costs.



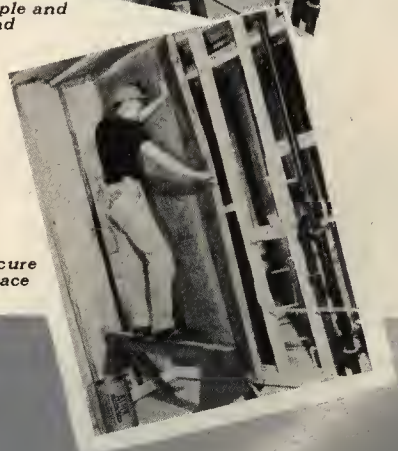
ALFOL IS EASY TO APPLY

Endorsed by thousands of insulation contractors throughout the country during the past quarter century for introducing time-saving installation procedure, ALFOL continues to lead the way in ease of application. It's as easy as one-two-three! **(1.)** Cut to desired length and staple one edge of blanket to stud face. **(2.)** Expand blanket (creating as many as 4 air spaces separated by reflective surfaces). **(3.)** Stretch blanket tight and staple loose edge to stud face (see illustrations at right). Cutouts to accommodate electrical fixtures, piping, etc., can be made easily with a pocket knife.

1. cut to size



2. staple and expand



3. secure in place

READ WHAT OTHERS SAY

The inset table, a report by the U. S. Bureau of Standards, establishes the supremacy of aluminum foil insulation over other types of insulation. This report was made following accurate and exhaustive tests. Testimonial letters from architects, builders and homeowners report highest satisfaction with ALFOL. Here are just a few from thousands in our files:

U. S. BUREAU OF STANDARDS FINDINGS

The UNITED STATES DEPARTMENT OF COMMERCE NATIONAL BUREAU OF STANDARDS BUILDING MATERIALS and STRUCTURES REPORT BMS 52 Effect of Ceiling Insulation Upon Summer Comfort gives the order "of decreasing effectiveness in protecting the ceiling against summer heat, as follows:

1. Two layers of aluminum foil (both sides of each layer reflecting).
2. Full-thick (3⅝ in.) rock wool.
3. One layer of aluminum foil (both sides reflecting).
4. Full-thick (3⅝ in.) glass wool.
5. Two inches of rock wool or 2 inches of wood-fibre blanket."

Gene Tunney, Undefeated Champion, now one of Connecticut's largest builders:

"The ALFOL Insulation . . . came through like a real champion. We cannot praise ALFOL too highly . . . It is an extraordinary heat repellent . . . We think you have a great product."

William Wilde, Architect and Design Consultant in Arizona:

"After thorough investigation based upon our experience as well as that of many other Architects, we are specifying "ALFOL" on all our projects."

Joel Schenker, President of Roth-Schenker Corp., New York City:

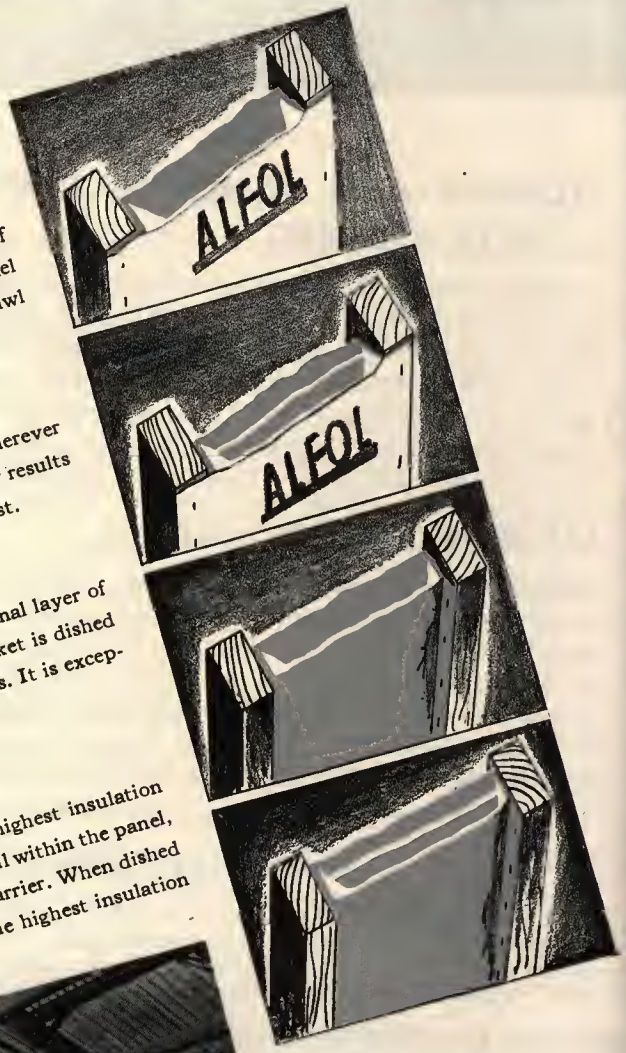
"The use of ALFOL Insulation enabled us to reduce our installed insulation costs, and we find its cleanliness, light weight, and compactness have practically eliminated the usual material handling and storage problems encountered in large building projects."

Easy to Ship, Store and Handle

ALFOL BUILDING BLANKET

for every insulation need!

ALFOL the low cost, modern scientific insulation is manufactured in four types in three standard widths of 16", 20", and 24"; **ALFOL** is suited for any insulation job in any climate. Choose the type best suited for your particular requirements:



TYPE 1 BLANKET consists of one layer of aluminum foil attached to a sheet of vapor proof paper. When expanded and fastened, the foil is suspended in the panel and forms two reflective air spaces. This type is excellent for sidewalls, crawl spaces under floors and garage ceilings.

TYPE 2 BLANKET is unexcelled for ceiling insulation, sidewalls, and wherever high efficiency is desirable. Two layers of foil attached to the vapor barrier results in three reflective air spaces that gives maximum efficiency at minimum cost.

TYPE 3 BLANKET is identical with **TYPE 1** except that an additional layer of foil is laminated to the vapor barrier paper. In application this blanket is dished in to the side of the studding and results in three reflective air spaces. It is exceptionally good for sidewalls, crawl spaces and unfinished ceilings.

TYPE 4 BLANKET. This superior blanket is used wherever highest insulation efficiencies are required. Like **TYPE 2**, it carries two layers of foil within the panel, plus an additional layer of foil laminated to the vapor proof barrier. When dished into the studding it results in four reflective air spaces for the highest insulation requirements.

All four types of **ALFOL** are manufactured in continuous length rolls containing 250 square feet each of *net* insulation. (Gross coverage including nailing flanges approximates 300 square feet per roll.)

ALFOL also manufactures **ALFOL ASBESTOS** for high temperature insulation for gas ranges, boiler jackets, hot water heaters; **ALFOL REINFORCED JACKETING** for refrigerator railroad cars, cold storage rooms and as a perfect vapor barrier for any use; **ALFOL PANELS** for oil refineries, chemical plants and all types of industrial application.

ALFOL type 3 and 4 has found ready acceptance for industrial buildings, warehouses, quonset type buildings, garages where insulation, light reflection and decoration are obtained in one product—in one operation.

ALFOL Building Blanket Insulation is patented in the United States, Canada and Mexico.

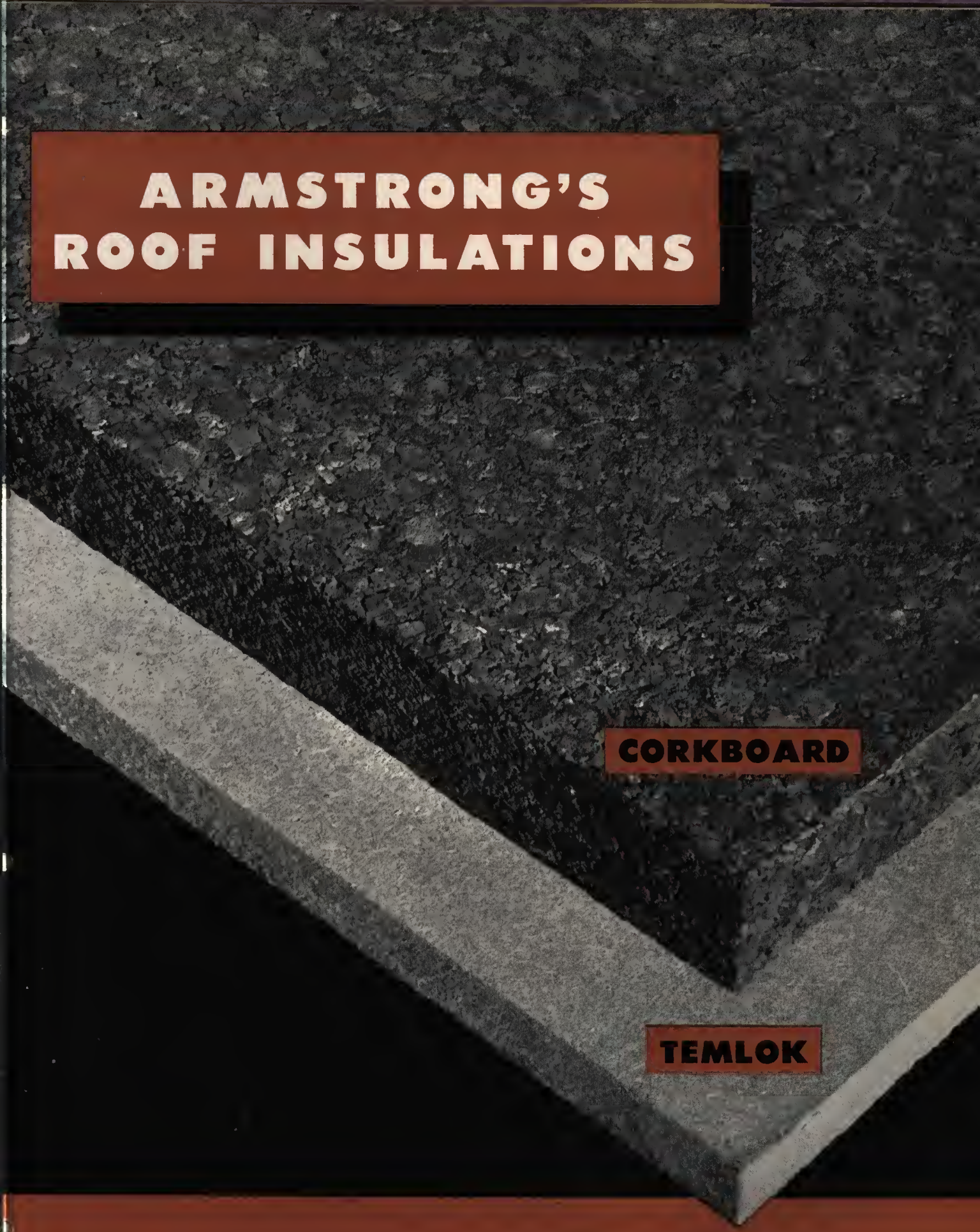
PRINTED IN U.S.A.

REFLECTS HEAT
AS A MIRROR
REFLECTS LIGHT

ALFOL

155 East 44th Street, New York 17, N. Y.

ARMSTRONG'S ROOF INSULATIONS



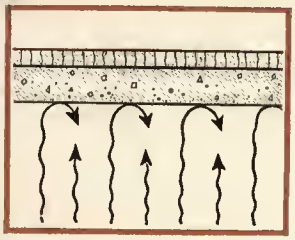
ARMSTRONG CORK COMPANY

BUILDING MATERIALS DIVISION LANCASTER, PENNSYLVANIA

WHY ROOF INSULATION?

Uninsulated roofs are expensive and wasteful. They contribute to excessive fuel and refrigeration costs by reducing the efficiency of heating and air conditioning systems. In buildings where high humidities are maintained, uninsulated roofs permit damage through moisture condensation. These serious threats to efficient building operation can be readily eliminated by the proper application of adequate thicknesses of Armstrong's Temlok® or Corkboard Roof Insulation.

Insulation to Prevent Heat Loss



The materials which compose the usual roof construction are relatively good conductors and permit a flow of heat that causes discomfort in summer and wastes fuel in winter. The following example illustrates the effect on heat transmission produced by the addition of 2″ of Armstrong's Corkboard Roof Insulation to regular roof deck construction:

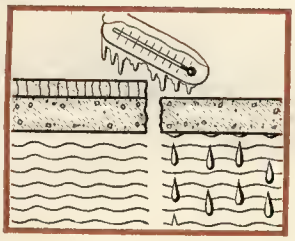
Transmission per square foot for 70° F., difference in temperature through 4″ of concrete plus standard roofing, per hour 50.40 Btu.

Transmission for the same construction and conditions with addition of 2″ of Armstrong's Corkboard to roof, per hour 8.40 Btu.

In other words, the addition of 2 inches of Armstrong's Corkboard reduces the heat flow through the roof 83.5% and greatly reduces the amount of fuel used.

(See page 7 for charts which will enable you to determine how various thicknesses of Armstrong's Temlok or Corkboard Roof Insulation will reduce heat flow through most types of roof constructions.)

Insulation to Prevent Condensation



Condensation on ceilings or the underside of uninsulated roofs, and frequently on walls as well, is a serious problem in many industries where a high relative humidity is maintained. Synthetic fiber plants, paper mills, textile mills, and laundries are notable examples.

Condensation, or sweating, is caused by the contact of warm, humid air with a cold surface. There are two ways to prevent condensation. One is to reduce the relative humidity of the air. The other is to lower the heat transmission of the roof and walls so that they will not become cooled to the dew point, at which condensation will take place.

The latter is the more practicable method. It does not necessitate altering the humidity conditions essential to many manufacturing processes in which a reduction of the amount of moisture in the air is either undesirable or economically impractical. In these cases, it is much simpler and far more effective to prevent chilling of building surfaces by insulating them and so make sweating impossible. Unless steps are taken to eliminate condensation in many buildings, serious damage or financial loss can result.

Some of the most important consequences are:

1. Dripping of water injures materials, rusts or otherwise damages machinery, and creates conditions detrimental to manufacturing processes.

2. Moisture promotes rapid decay.

3. In wood roof construction, plaster ceilings under an uninsulated roof are easily damaged by condensation.

4. Moisture absorbed by a roof structure increases its conductance and promotes even more rapid chilling with its attendant condensation of water vapor.

(See page 7 for charts which will enable you to determine the thicknesses of Armstrong's Corkboard or Temlok Roof Insulation necessary to prevent condensation.)

Copyright 1947, Armstrong Cork Company, Lancaster, Pa.

ARMSTRONG'S TEMLOK ROOF INSULATION

Thickness	Over-all Size	Coverage of Net Size	Edge Treatment	Homogeneous or Laminated	Depth of Shiplap
½″	24″ x 48″	24″ x 48″	Square	Homogeneous	None
1″	24″ x 48″	24″ x 48″	Square	Homogeneous	None
1″	23⅞″ x 47⅞″	23¼″ x 47¼″	Shiplapped	Homogeneous	⅝″
1½″	24″ x 48″	24″ x 48″	Square	Laminated	None
1½″	24¾″ x 48¾″	24″ x 48″	Shiplapped	Laminated	¾″
2″	24″ x 48″	24″ x 48″	Square	Laminated	None
2″	25″ x 49″	24″ x 48″	Shiplapped		1″

Temlok provides greater comfort and fuel savings during the entire life of a normally heated building. Its use is recommended when service conditions are moderate.

Thermal Conductivity of Armstrong's Temlok is 0.35 Btu at 75° F. for 1″ thickness and greater; conductivity for ½″ thickness is 0.36 Btu.

Resistance to Fungus, Dry Rot, and Termites. Temlok is completely sterilized in the manufacturing process and is highly resistant to dry rot and fungus growth. The resin content of the wood fibers from which the product is manufactured makes Temlok naturally resistant to termites and other vermin.

Moisture Resistance. Tests show only 2.2% water absorption by volume. (Percentage allowed by U. S. Commercial Standard CS42-35 and Federal Specification LLL-F-321b is 5% for insulating boards and 10% for roof insulation.)

Strength. Temlok exceeds U. S. Commercial Standard CS42-35 and Federal Specification LLL-F-321b for Transverse Strength (12 lbs. breaking load for standard specimen) and for Tensile Strength (175 lbs. per sq. inch) and is well within those specifications for Deflection (0.25 inch minimum, 0.85 inch maximum).

Light Weight. Temlok Roof Insulation averages 1.35 lbs. per board foot. Temlok is easy to saw and nail, absorbs little asphalt or pitch, is inexpensive yet practical for a wide variety of roof insulation jobs.

Table at left shows sizes, coverage, and other physical characteristics of Armstrong's Temlok Roof Insulation.

ARMSTRONG'S CORKBOARD ROOF INSULATION

Corkboard's insulating efficiency and high natural resistance to moisture make it the ideal insulation for long service under extreme conditions.

Thermal Conductivity is 0.27 Btu at 60° F.

Resistance to Fire, Decay, and Vermin. Corkboard will not support combustion, being classified as fire-retardant. It resists decay and will not harbor vermin.

Strength. Corkboard is strong and tough and will not shrink, swell, or warp.

Light Weight. Armstrong's Corkboard weighs 0.65 lb. per board foot.

Sizes. 12″ x 36″, 18″ x 36″, and 24″ x 36″. Thicknesses: 1″, 1½″, 2″, 3″, and 4″.

Federal Specification. Conforms to HH-C-561a.

GENERAL ROOF INSULATION SPECIFICATIONS

Note: Asphalt or pitch may be used interchangeably for applying the vapor seal, insulation, and roofing, but they should not be used together.

To assure an effective vapor seal and also a strong bond between the roof deck, membrane, insulation, and roofing it is important that the asphalt or pitch be applied to proper thickness. To ensure this, it is recommended that in the kettle the temperature of the asphalt should not exceed 400° F. and the pitch 375° F. Apply at least 40 lbs. of asphalt or pitch per square for each mopping. The membrane material, insulation, and roofing all must be applied immediately after asphalt or pitch has been spread and while it is still hot to provide a strong bond.

1. Condition of Roof Deck: The roof deck must be dry, smooth, firm, and free from any loose materials and dirt before corkboard or Temlok insulation is applied.

2. Waterproofing at Edges: Extend waterproofing membrane up all vertical surfaces 4″ above top of insulation, turn down on top of insulation, and mop in place with asphalt or pitch to seal.

3. Joints: All transverse joints shall be broken and all joints sealed by sliding each board into its final position while the asphalt or pitch is hot and butting it tightly against the adjacent boards.

4. Multiple Layers of Insulation: Additional layers of insulation shall be installed in the same manner as the first and shall break joints with the first layer.

5. Cut and fit insulation closely around penthouses, parapets, firewalls, vent pipes, ventilators, skylights, etc.

SPECIFICATIONS FOR TEMLOK ROOF INSULATION

1. CONCRETE DECK

Priming of Deck—If asphalt is to be used, apply one coat of Armstrong's No. 3 Asphaltic Paint or other suitable primer over entire surface of roof deck and allow to dry before proceeding with further work.

Application of Insulation—Lay Armstrong's Temlok Insulation ..... inches thick in hot asphalt or pitch mopped to the deck surface. On a steeply inclined or vertical surface use inserted nailing strips of treated wood, two per board, or apply treated wood strips 48″ apart, bolted every 4′, as thick as the first layer of Temlok. Where wood strips are inserted in deck, additionally secure Temlok with two nails at each strip. Nails should extend ¾″ into nailing strip. Where strips are on surface, toenail Temlok with two nails at each end.

Alternate Specification for Heavy Duty

Application of Waterproof Membrane—If asphalt is to be used, prime deck with Armstrong's No. 3 Asphaltic Paint or other suitable primer and allow to dry. Apply 15-lb. saturated felt lapped half its width mopped with hot asphalt or pitch. For application of insulation proceed as above.

2. PRECAST GYPSUM (or similar) SLAB DECK

Application of Waterproof Membrane—If asphalt is to be used, prime slabs to within 4″ of joints with Armstrong's No. 3 Asphaltic Paint or other suitable primer and allow to dry. Mop hot asphalt or pitch on each area, keeping 4″ away from joints and apply 15-lb. saturated felt lapped half its width.

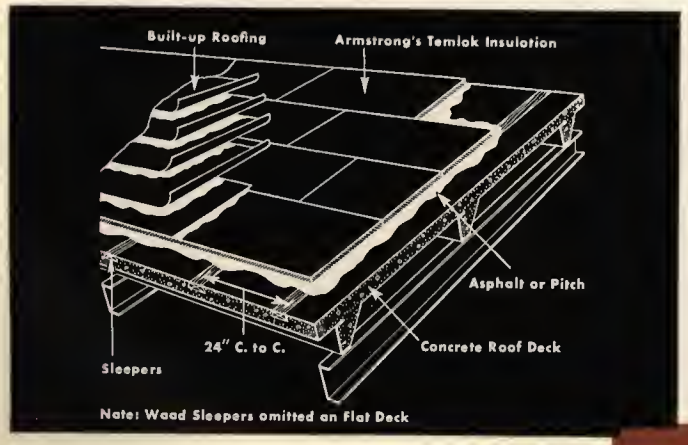
Application of Insulation—Lay Armstrong's Temlok Insulation ..... inches thick in hot asphalt or pitch applied directly to the waterproof membrane.

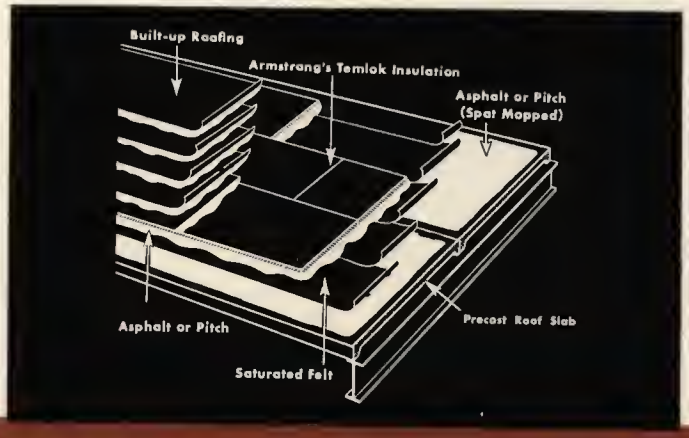
On steeply inclined or vertical surfaces, brad the saturated felt membrane and nail the insulation after applying in asphalt or pitch. Use galvanized nails 12″ o.c. both ways and along all edges, nails to extend ¾″ into deck or nailing strips.

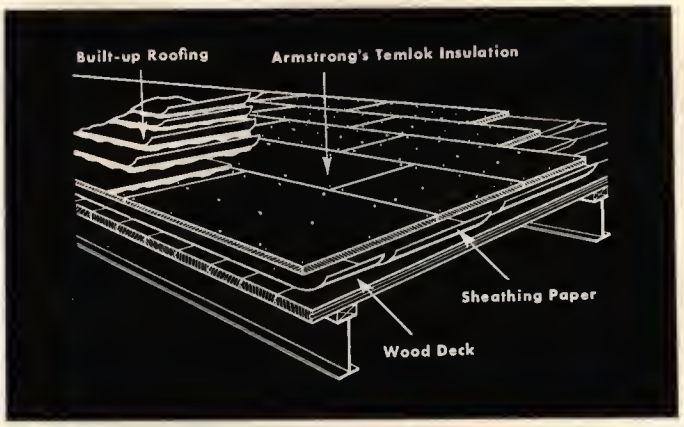
Instead of nailing directly into precast slabs, inserted strips of treated wood, two per board, may be used or treated wood strips as thick as first layer of insulation may be applied to surface, spaced 48″ apart and bolted every 4′. After Temlok has been applied in asphalt or pitch, additionally secure each board with two nails at each inserted strip, nails to extend ¾″ into strip. Temlok applied between surface strips should be toenailed to strips with two nails at each end.

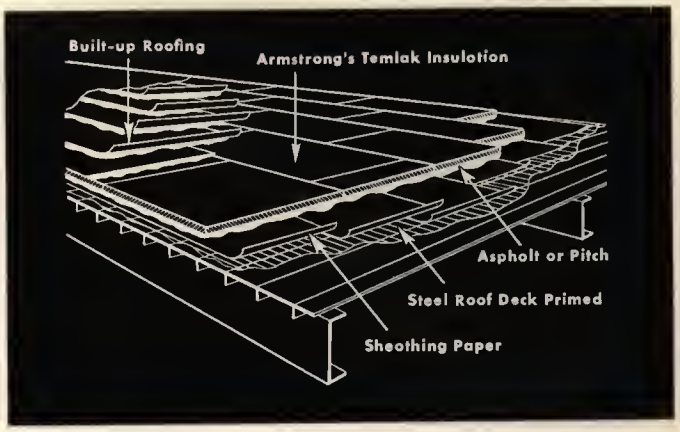
3. WOOD DECK

Application of Insulation—Apply a layer of sheathing paper lapped 2″ and tacked to hold in place. Lay the first layer of Temlok Insulation ..... inches thick,









dry, and nail to deck with galvanized nails 12″ o.c. both ways, and around all edges, nails to penetrate deck ¾″. Mop succeeding layers in hot asphalt or pitch.

Alternate Specification for Heavy Duty

Application of Waterproof Membrane—Over the sheathing paper, lay 15-lb. saturated felt lapped half its width and nailed along upper edges sufficiently to hold in place.

Application of Insulation—Lay Armstrong's Temlok Insulation ..... inches thick in hot asphalt or pitch mopped directly to the waterproof membrane, nailing the first layer as specified above.

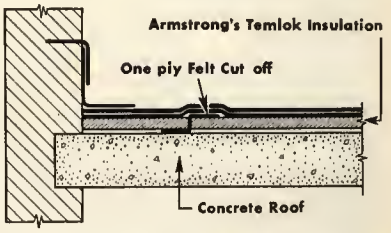
4. STEEL DECK

Priming of Deck—If deck does not have a factory-applied prime coat, apply one coat of Armstrong's No. 4 Asphaltic Paint or other suitable primer.

Application of Insulation—Cover deck with a layer of sheathing paper or 15-lb. saturated felt to prevent dripping of asphalt or pitch through roof deck seams. Apply over asphalt primer while still tacky, or by spot mopping in hot asphalt or pitch. Lay Armstrong's Temlok Insulation ..... inches thick in hot asphalt or pitch applied directly to the sheathing paper or felt.

On any surface inclined more than 3″ per foot or on vertical surfaces, the Temlok shall be additionally secured to the deck with suitable devices as made by and in accordance with instructions of the manufacturer.

5. WATER CUTOFF



Isolate Temlok Roof Insulation in areas not greater than 30 feet square over the entire roof, and three feet back from all parapet walls or borders, by a felt cutoff strip. Strips shall be mopped to the roof deck and to the top surfaces of the insulation with asphalt or pitch.

6. APPLICATION OF ROOFING

Built-up roofing shall be applied directly to the surface of the insulation and the application of both shall go forward at the same time. The first layer of roofing shall be applied to the insulation with asphalt or pitch. No insulated areas shall be left exposed overnight. Where the work is stopped at the end of the day, all edges of the insulation shall be protected and sealed off so that no water can get under the seal. This seal shall be drawn tightly over the edges of the insulation so that it will not be necessary to break it when work is resumed.

SPECIFICATIONS FOR CORKBOARD ROOF INSULATION

1. CONCRETE DECKS

Priming of Deck—If asphalt is to be used, apply one coat of Armstrong's No. 3 Asphaltic Paint or other suitable primer over entire roof deck and allow to dry.

Application of Insulation—Lay Armstrong's Corkboard ..... inches thick in hot asphalt or pitch mopped to the deck surface.

On a steeply inclined or vertical surface use inserted nailing strips of treated wood 18″ o.c. or apply treated wood strips 36″ apart, bolted every 4′, as thick as the first layer of corkboard.

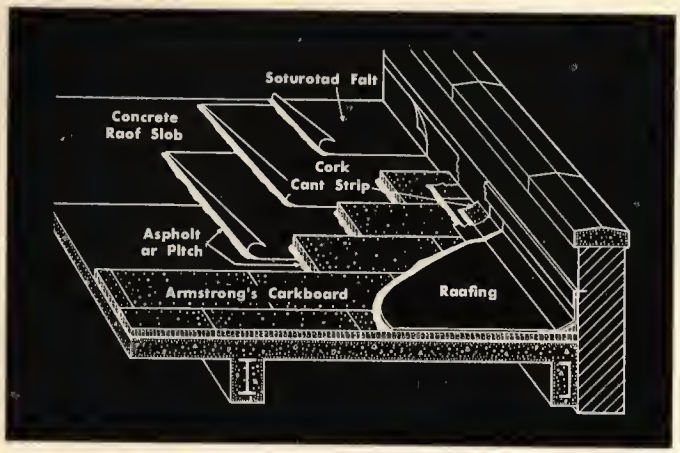
Where wood strips are inserted in deck, additionally secure corkboard with two nails at each strip. Nails should extend ¾″ into nailing strip. Where strips are on surface, toenail corkboard with two nails at each end.

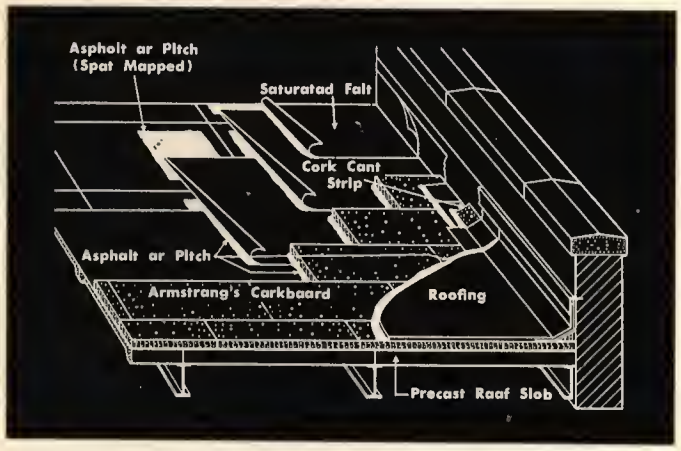
Alternate Specification for Heavy Duty

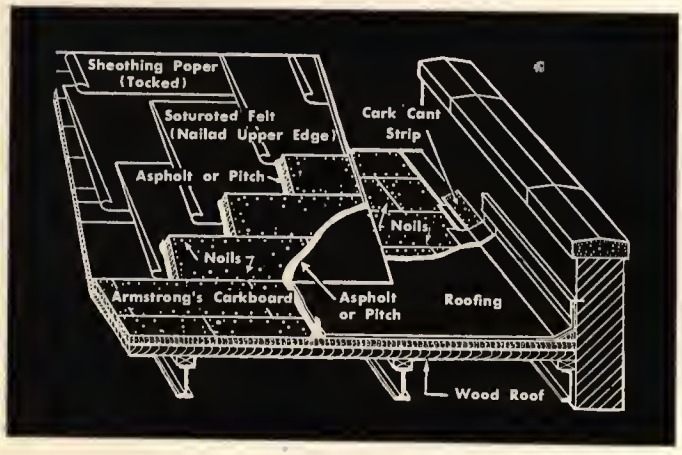
Application of Waterproof Membrane—If asphalt is to be used, prime deck with Armstrong's No. 3 Asphaltic Paint or other suitable primer and allow to dry. Apply 15-lb. saturated felt lapped half its width mopped with hot asphalt or pitch. Apply insulation according to preceding specification.

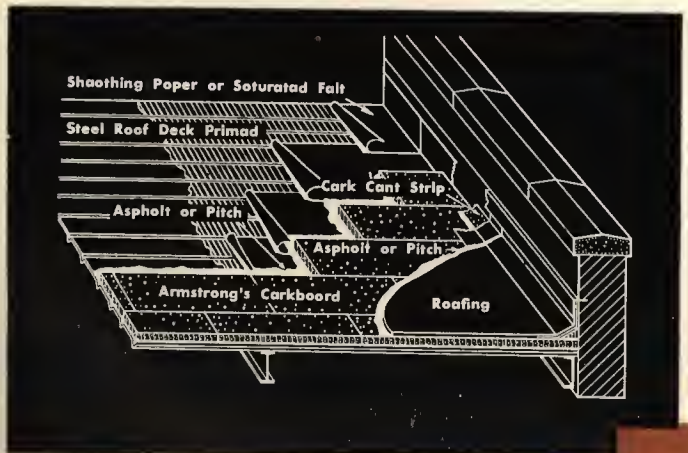
2. PRECAST GYPSUM (or similar) SLAB DECK

Application of Waterproof Membrane—If asphalt is to be used, prime slabs to within 4″ of joints with Armstrong's No. 3 Asphaltic Paint or other suitable primer









and allow to dry. Mop hot asphalt or pitch on each area, keeping 4″ away from joints and apply 15-lb. saturated felt lapped half its width.

Application of Insulation—Lay Armstrong's Corkboard ..... inches thick in hot asphalt or pitch.

On a steeply inclined or vertical surface, brad the saturated felt membrane and nail the insulation after applying in asphalt or pitch. Use one nail per square foot, nails to extend ¾″ into deck or nailing strips.

Instead of nailing directly into precast slabs, inserted strips of treated wood 18″ o.c. may be used, or treated wood strips as thick as first layer of insulation may be applied to surface, spaced 36″ apart and bolted every 4′. After corkboard has been applied in asphalt or pitch, additionally secure each board with two nails at each inserted strip, nails to extend ¾″ into strip. Corkboard applied between surface strips should be toenailed to strips with two nails at each end.

3. WOOD DECK

Application of Insulation—Apply a layer of sheathing paper lapped 3″ and tacked to hold in place. Lay the first layer of Armstrong's Corkboard ..... inches thick, dry and nail to deck with galvanized nails, one per square foot, nails to penetrate deck ¾″. Mop succeeding layers of corkboard in hot asphalt or pitch.

Alternate Specification for Heavy Duty

Application of Waterproof Membrane—Over the sheathing paper, lay 15-lb. saturated felt lapped half its width and nailed along upper edges sufficiently to hold in place.

Application of Insulation—Lay corkboard ..... inches thick in hot asphalt or pitch, mopped to the waterproof membrane, nailing first layer as specified above.

4. STEEL DECK

Priming of Deck—If deck does not have a factory-applied prime coat, apply one coat of Armstrong's No. 4 Asphaltic Paint or other suitable primer.

Application of Insulation—Cover deck with a layer of sheathing paper or 15-lb. saturated felt to prevent dripping of asphalt or pitch through roof deck seams. Apply over asphalt primer while still tacky, or by spot mopping in hot asphalt or pitch. Lay Armstrong's Corkboard Insulation ..... inches thick in hot asphalt or pitch. On any surface inclined more than 3″ per foot or on vertical surfaces, the corkboard shall be additionally secured to the deck with suitable devices.

5. WATER CUTOFF

Install water cutoffs of 2 plies of saturated felt and alternate mopping of asphalt or pitch every 20′ in one direction across the roof (or in accordance with roofer's specifications). Cutoffs shall extend 6″ on waterproofing membrane and 4″ on surface of corkboard.

6. APPLICATION OF ROOFING

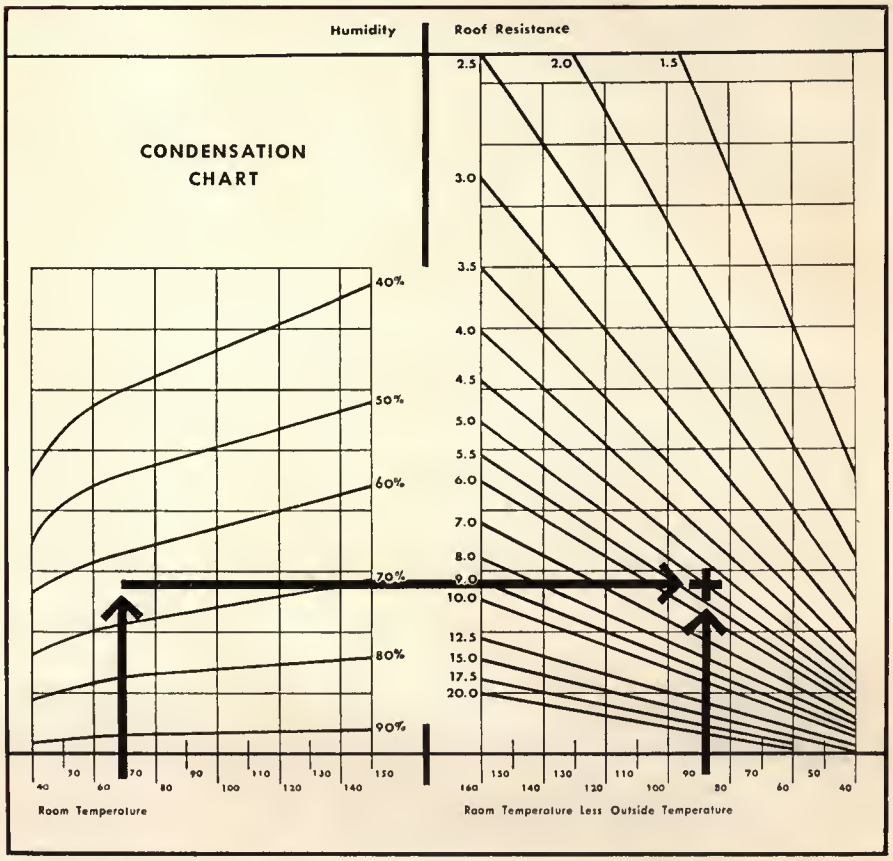
Built-up roofing shall be applied directly to the surface of the insulation and the application of both shall go forward at the same time. The first layer of roofing shall be applied to the insulation with asphalt or pitch. No insulated areas shall be left exposed to the weather overnight. Cover insulation with roofing immediately and at the end of each day's work strip and seal the edges. When work is resumed, remove any stripping which does not run in same direction as regular water cutoffs.

HOW TO DETERMINE ADEQUATE INSULATION

These tables show how thick your roof insulation must be to prevent condensation on the ceiling in cold weather. They also can be used in determining how various thicknesses of insulation reduce heat flow through roof structures.

To Determine the Thickness of Insulation Needed to Prevent Condensation, start at the point of desired room temperature in the left hand section of the Condensation Chart (assume 70° F.). Proceed vertically to intersection with the curve of humidity (assume 65%). Then project this line horizontally to the right hand portion of the chart until it intersects a line passing vertically through the point representing maximum difference between indoor and outdoor temperatures. (Assume lowest outdoor temperature to be 20° below zero. The difference between —20° and the indoor figure of 70° F. is 20 plus 70, or 90.) The point of intersection falls on the line 5.0. Interpolated with the Roof Resistance Table at right, column R, and assuming a sheet steel roof deck, 1½" thickness of Armstrong's Corkboard will provide a resistance of 6.21, which is in excess of the 5.0 required. Allowing for a margin of safety, 2" thickness of Armstrong's Temlok Roof Insulation will provide a resistance of 6.32, which is also in excess of 5.0.

To Determine Transmission of Heat Through Insulated Roof Construction, refer to the U column in the Roof Resistance Table. Assuming the same conditions as outlined above, with a temperature difference of 90° F., an uninsulated sheet steel deck would transmit 85.50 Btu per square foot per hour. (This figure is arrived at by multiplying .95, the transmission in Btu per sq. ft. per hour per degree temperature difference by 90, the number of degrees of temperature difference.) With the addition of 1½" of Armstrong's Corkboard, that transmission would be cut to 14.40 Btu per square foot per hour (.16 x 90). The addition of 2" of Armstrong's Temlok would reduce the transmission of heat per hour to the same figure, 14.40.



Roof Resistance Table—Corkboard and Temlok

Type of Roof	Armstrong's Corkboard Insulation	R*	Ut	Armstrong's Temlok Insulation	R*	Ut
Sheet Steel Deck and Roofing	No Insulation	1.05	.95	No Insulation	1.05	.95
	1" Corkboard	4.49	.22	½" Temlok	2.37	.42
	1½" Corkboard	6.21	.16	1" Temlok	3.69	.27
	2" Corkboard	7.93	.13	1½" Temlok	5.00	.20
	3" Corkboard	11.37	.09	2" Temlok	6.32	.16
	4" Corkboard	14.81	.07			
2" Concrete Slab and Roofing	No Insulation	1.22	.82	No Insulation	1.22	.82
	1" Corkboard	4.65	.21	½" Temlok	2.53	.40
	1½" Corkboard	6.37	.16	1" Temlok	3.85	.26
	2" Corkboard	8.09	.12	1½" Temlok	5.16	.20
	3" Corkboard	11.53	.09	2" Temlok	6.48	.16
	4" Corkboard	14.97	.07			
4" Concrete Slab and Roofing	No Insulation	1.39	.72	No Insulation	1.39	.72
	1" Corkboard	4.82	.21	½" Temlok	2.70	.37
	1½" Corkboard	6.54	.15	1" Temlok	4.02	.25
	2" Corkboard	8.26	.12	1½" Temlok	5.33	.19
	3" Corkboard	11.70	.09	2" Temlok	6.65	.15
	4" Corkboard	15.14	.07			
6" Concrete Slab and Roofing	No Insulation	1.56	.64	No Insulation	1.56	.64
	1" Corkboard	4.99	.20	½" Temlok	2.87	.35
	1½" Corkboard	6.71	.15	1" Temlok	4.19	.24
	2" Corkboard	8.43	.12	1½" Temlok	5.50	.18
	3" Corkboard	11.87	.08	2" Temlok	6.82	.15
	4" Corkboard	15.31	.07			
2" (Wood)** and Roofing	No Insulation	2.78	.36	No Insulation	2.78	.36
	1" Corkboard	6.24	.16	½" Temlok	4.10	.24
	1½" Corkboard	7.96	.12	1" Temlok	5.42	.19
	2" Corkboard	9.68	.10	1½" Temlok	6.73	.15
	3" Corkboard	13.12	.08	2" Temlok	8.05	.12
	4" Corkboard	16.56	.06			
3" (Wood)** and Roofing	No Insulation	3.85	.26	No Insulation	3.85	.26
	1" Corkboard	7.24	.14	½" Temlok	5.17	.19
	1½" Corkboard	8.96	.11	1" Temlok	6.49	.15
	2" Corkboard	10.68	.09	1½" Temlok	7.80	.13
	3" Corkboard	14.12	.07	2" Temlok	9.12	.11
	4" Corkboard	17.56	.06			

R*—Resistance Factor = 1/U
**Nominal thickness specified—actual thickness used in calculations
Ut — Transmission in Btu per sq. ft. per °F. temperature difference per hour

ARMSTRONG'S BUILDING MATERIALS

FLOORS

Asphalt Tile
Linotile®
(Oil-Bonded)
Rubber Tile
Cork Tile
Linoleum

WALLS AND CEILINGS

Monowall®
Temlok® Panels
and Planks
Linowall®
Veos Wall Tile
(Porcelain on Steel)

ACOUSTICAL MATERIALS

Cushiontone®
Arrestone®
Corkoustic®
Travertone

INSULATIONS

Low-Temperature

Corkboard
Cork Covering
Foamglas*
Fiberglas**
Mineral Wool Board
Temlok

Heat

Magnesia
Air Cell
High Temperature
Other Heat Insulations

Insulating Refractories

Comfort

Corkboard and Temlok Roof Insulation
Armstrong's Insulating Wool
Temlok Lath
Temlok Sheathing

Travertone is a trade-mark for which registration is pending.

*® PCCorp.

**® OCFCorp.

Detailed information about any of these products and their applications may be obtained promptly from Armstrong Cork Company, Building Materials Division, Lancaster, Pennsylvania.

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RI-S-49 B

PRINTED IN UNITED STATES OF AMERICA

ARMSTRONG CORK COMPANY

BUILDING MATERIALS DIVISION LANCASTER, PENNSYLVANIA

Carey

Insulation Products

- Rock Wool
- Asbestos
- 85% Magnesia

Carey Rock Wool building insulation

Loose fibre . . . . Granulated . . . . Batts

Carey Rock Wool is produced from rock melted and blown by high pressure steam into fine silky fibres which entangle and form millions of minute dead air spaces. These minute dead air spaces provide the basic principle of insulation.

Heat travels by three common methods: namely, radiation, conduction and convection. In that the fibres are similar to small glass rods, they have very little surface area from which to throw a radiant heat. Further, these rods being only a few thousandths inch in diameter have very little heat carrying capacity, which makes the mass a poor conductor of heat. Further, the mass of fine fibres interlaced as described above breaks up the air space in which the material is located sufficiently to completely eliminate any possible currents of air, thereby eliminating heat transfer by convection.

Properties of Carey Rock Wool building insulation

fire resistant
Carey Rock Wool is made from minerals that will not burn. When installed in buildings, it provides added fire safety.

permanent
Rock Wool is a fibrous material that will not disintegrate nor slack away. It will outlast the life of the building.

inorganic
The mineral fibres of Rock Wool are unaffected by moisture or corrosion.

low thermal conductivity
Rock Wool has the insulating value of a brick wall 59 inches thick.

odorless
Made of molten rock at high temperature, Carey Rock Wool emits no odors.

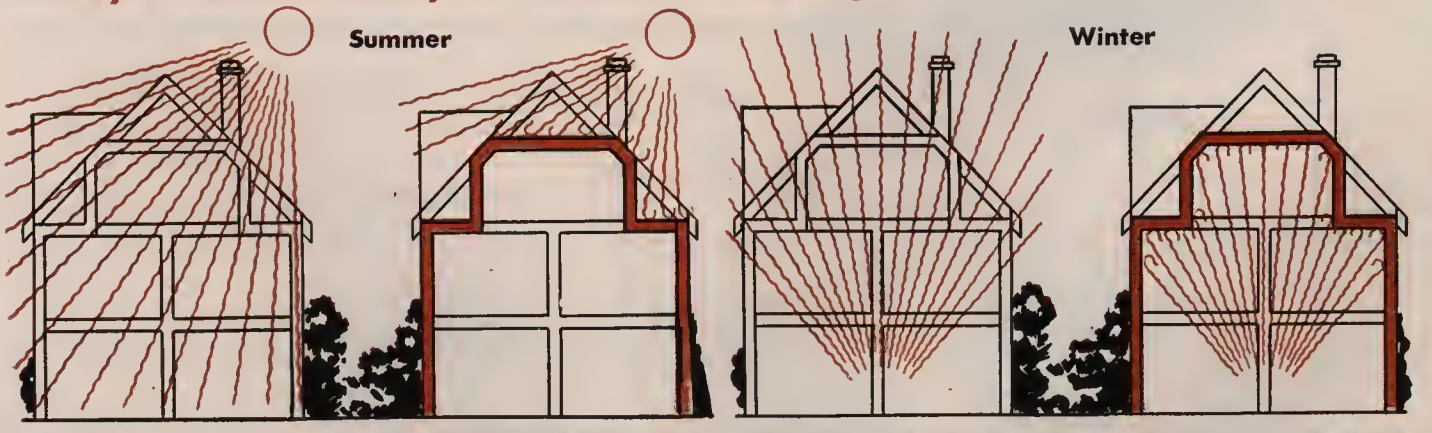
sheds water
Carey Rock Wool is moisture resistant—it sheds water and has no "wick" action.

no waste
Even trimmings of Rock Wool Batts are used to caulk around doors, windows, etc.

non-settling
Carey Rock Wool building insulation is composed of fine, resilient mineral fibres. When properly installed, it retains its position indefinitely.

vermin-resistant
Carey Rock Wool offers no sustenance to any kind of vermin.

Carey insulation for year 'round comfort, plus!



In summer, heat goes right through the roof and walls of the uninsulated home.

Carey Rock Wool Home Insulation stops this passage of heat, through the roof and walls of your home.

In winter, heat that is provided at great cost, passes through the roof and walls of the uninsulated home.

Carey Rock Wool Home Insulation prevents the passage of heat through the side-walls and roof of your home.

The Philip Carey Manufacturing Company

Carey insulations

methods of application

blown-in application

batt application

general technical data

thermal conductivity

style	density	mean temp.	K*
laase	6 lb./cu. ft.	75° F.	.220
granulated	6 lb./cu. ft.	75° F.	.252
batts	4½ lb./cu. ft.	75° F.	.220

*K equals B.T.U. per square foot per hour per degree F. difference in temperature per inch thickness.

The values obtained in the above report were determined by the method described in Trans. Am. Inst. Chem. Eng. 18(1926)283-293 wherein an Alundum Flat Plate Conductimeter was used.

The above tests were conducted by Mellon Institute of Industrial Research.

density—width—thickness

style	thickness	width	density
laase		bulk	6 lb.*
granulated		bulk	6 lb.*
batts	full thick	15"x24" or 48"	4 lb./cu. ft.
batts	semi-thick	15"x24" or 48"	4½ lb./cu. ft.

*The density of loose and granulated wool will vary, depending upon the individual applying it. This material can be installed at any desired thickness in that it is bulk type material.

Carey Rock Wool Home Insulation will meet Federal Specification HH-I-521 b. Carey Rock Wool products are furnished in standard styles required by the trade.

general application notes

preparation for application

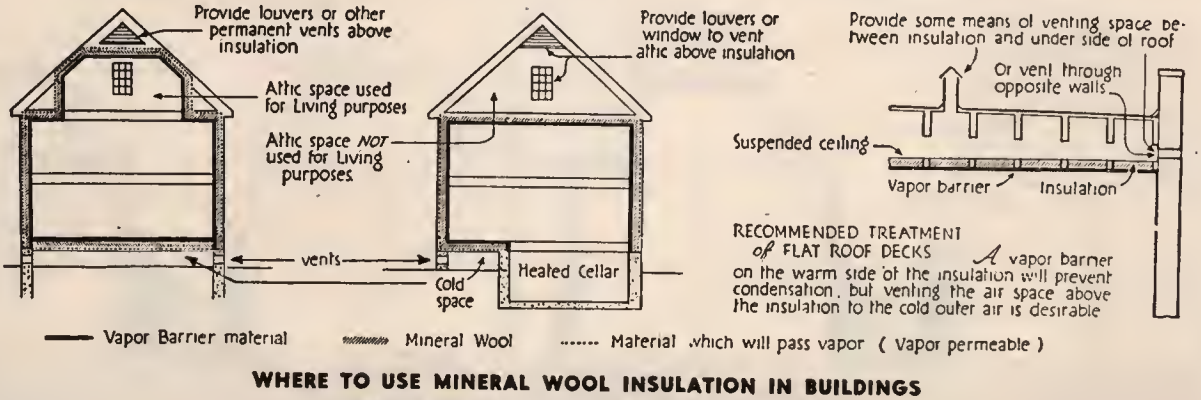
It is important that exterior walls and roof be completely sheathed and made substantially watertight before insulation is installed. All electrical conduits, outlets, plumbing and duct work installed in walls, roof and floors where insulation is to be installed, to be inspected, before the insulation is applied. This is in order that other trades will not be required to remove the insulation once it is properly installed.

ventilation

It is recommended that all building structures where possible be provided with ventilation above the insulation. The amount of ventilation normally required is ¼ sq. in. per sq. ft. of insulating area.

vapor barriers

All vapor barriers used in connection with Carey Rock Wool Batts are the standard of the Mineral Wool Industry. If unusual or exaggerated conditions are encountered, we recommend the use of Carey Vapor Stop, which is an asphalt saturated paper having a gloss coating of asphalt on two surfaces.



WHERE TO USE MINERAL WOOL INSULATION IN BUILDINGS

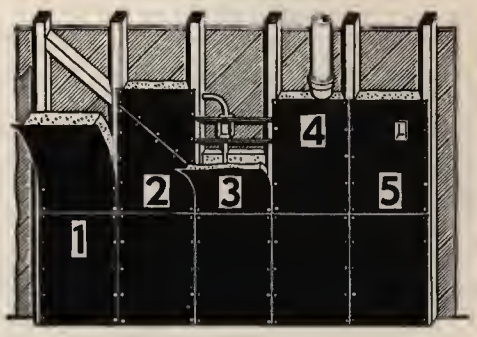
With Proper Relationship of Vapor Barriers and Vapor Vents

application details

installation of full thick batts

batts with integral vapor barrier

1. Start at bottom of stud space, installing Mineral Wool below floor line for fire-stopping. Completely insulate each stud space, snugly butting successive batts together and fastening the flange of vapor barrier to the studs. Where required at sills, plates, etc. provide additional flange on the vapor barrier by cutting away the wool but leaving vapor barrier for overlap on framing.
2. Cut batts to fit angles, corners and irregular spaces, leaving flanges on the vapor barrier for fastening.
3. Where electrical cables or conduits obstruct the panel, split the batts and install part of the wool behind the obstructions, placing the remainder over the face.
4. Large pipes may require removal of part of the wool, but retaining the vapor barrier. To protect water pipes from freezing, apply insulation to the cold side only, removing it from the batt where the piping is located but leaving the vapor barrier intact.
5. Cut vapor barrier to fit snugly around electrical outlets, protruding pipes, etc.



top floor ceiling

A. batts with integral vapor barrier

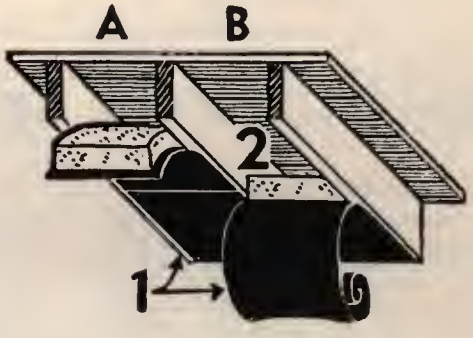
1. Insert from below, tightly butting batts together and attaching flanges of vapor barrier securely to joists before applying supports. Completely insulate each joist space.
2. Cut blankets to required length plus allowance for attaching at ends.

B. batts without integral vapor barrier

1. Where a vapor barrier is required, install it by attaching to the under side of joists before applying lath, wall board or other support.
2. Insert batts progressively as vapor barrier and support are applied. Fit batts tightly against those already installed. Continue till each joist space is insulated completely.

general notes:

If fresh air circulation is not provided at eaves, seal off end of space between rafters and eave line to prevent entry of water vapor from coming up thru walls from sources beneath the house. This U-shaped seal should be carried up 6″ on the sheathing and tacked to form an envelope to enclose the end of the insulation. Wherever there are collar beams, apply the insulation between them and ventilate the space above them.



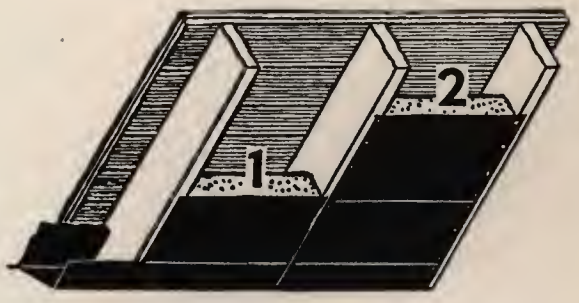
sloping roofs

batts with integral vapor barrier

1. Install first batt, or end of blanket, at bottom of rafter panel, fitting it snugly against the U-shape seal. Attach flanges to rafters.
2. Install successive batts the same way, butting them closely together.
3. Blankets should be attached to the rafters by the vapor barrier flange, starting at the eave line and progressing upwards. Allow sufficient length at ends for overlap and attachment at eaves and collar beams or ridge.

A. batts without integral vapor barrier

1. Install a suitable supporting material, as required.
2. Insert batts between joists, fitting around bridging, piping, etc. completely insulating each joist space.
3. Where required, apply vapor barrier parallel to and on top of joists and lay sub-floor.
4. Where flooring is already in place, the support for the insulation should be installed alternately with the insulation.



floors and cold spaces

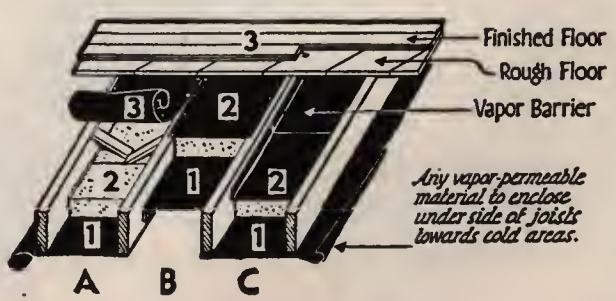
B. & C. batts with integral vapor barrier

(Method 1—drawing B)

1. Install a suitable supporting material, as required. at such height between the joists that upper face of batts will be flush with top of joists.
2. Completely insulate each joist space, butting successive batts together with vapor barrier up and attaching flange of vapor barrier to top of joists.
3. Apply flooring as required. (Note: If flooring is already installed, apply insulation from below with vapor barrier up. Support insulation with a suitable vapor permeable material attached to bottom of joists).

(Method 2—drawing C)

1. Attach a suitable supporting material to bottoms of the joists.
2. Completely insulate each joist space, applying batts upon supporting material with vapor barrier up. Turn flanges up and attach to sides of joists. Fit insulation around bridging, piping, etc.
3. Lay flooring as required.



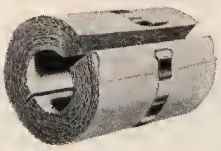
Carey asbestos and magnesia insulations

insulation for building, piping and equipment

for . . heating systems

Careycel Pipe Covering, Blocks and Sheets are designed especially to insulate pipes, boilers, insulated metal boiler jackets, ovens, and other apparatus where temperatures do not exceed 300° F.

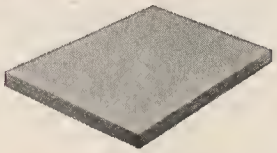
Furnished in 36-in. long pipe covering sections with cotton duck jacket and bands for all pipe sizes. Standard thickness, 1 in. Blocks are furnished 6 x 36 in., and sheets 36 x 36 in., thicknesses from ½ in. up.



for . . air conditioning ducts

Careycel Board is a fireproof, low-cost highly efficient asbestos board for the insulation of metal ducts and all types of air conditioning equipment.

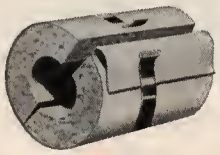
Composed of laminations of indented (not corrugated) asbestos felts, this light weight board weighs approximately 1½ pounds per board foot. Furnished in sizes 36 x 36 in. or 36 x 72 in. Blocks are 6 x 36 in. Thickness from ½ in. up.



for . . service water pipes

Carey Perfecto (wool felt) Pipe Covering consists of laminations of insulating felt with an all-purpose liner suitable for use on either hot or cold pipes. Furnished in 36-in. long sections with canvas jackets and bands in thicknesses of ½, ¾, 1 in., double ½ in., and double ¾ in.

Carey Perfecto Pipe Covering is designed to provide an inexpensive insulation for cold water pipes.



for . . ice water pipes

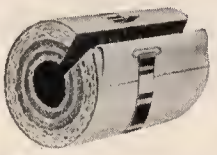
Carey Impervo (non-sweat) Pipe Covering is composed of insulating felts with a water-proof liner and vaporseal jacket. Furnished in sections 36 in. long with canvas jackets and bands for all pipe sizes.

This product is designed for and used on ice water and cold water pipes to keep water cold and prevent sweating. Double layer construction should always be used with the joints and seams staggered to keep air away from the pipe.

to . . prevent freezing

Carey Protecto (anti-freeze) Pipe Covering consists of two inner layers of hair felt having a water-proof felt liner and an outer liner of insulating felt. Total thickness is approximately 1¼ in. Where severe conditions exist, two thicknesses should be used. Furnished in 36-in. long sections with canvas jackets and bands.

Carey Protecto Pipe Covering is designed specifically to reduce the danger of freezing where water pipes are exposed to extremely low temperatures.



for . . radiator recesses

Carey Asbestos Millboard is constructed of felted asbestos fibers built up to form sheets in standard size of 42 x 48 in. and in thicknesses from 1/32 to ½ in. Carey Asbestos Millboard is ideal for backing up radiators where recessed into walls.

It is a firm, semi-rigid, fire resisting board. It can be handled and installed easily and its firm structure insures permanence. It serves both as fire protection and as a heat insulator.

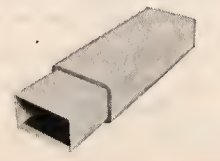
for . . power systems

Carey 85% Magnesia is 85% basic carbonate of magnesia and 15% asbestos fiber. Accepted as quality standard for high and low pressure work where maximum permanent efficiency is desired where temperatures do not exceed 600° F. Furnished in sections and segments for covering pipes. Flat blocks are in three standard sizes, 6 x 36 in., 6 x 18 in., and 3 x 18 in. Thickness from ⅞ to 3½ in. Curved blocks are furnished for diameters from 30 to 96 in. Curved blocks are 6 in. wide by 42 in. long.

For temperatures exceeding 600° F. use Carey Hi-Temp No. 19, and 85% Magnesia Combination Covering.

get . . prefabricated air ducts

Careyduct is a preformed asbestos, fireproof, permanent air duct, which is light weight, easy to erect, clean in appearance, with low cost compared to sheet metal plus insulation. Carey duct is an efficient conveyance for conditioned air and comprises duct, insulation and acoustical treatment in one unit. Careyduct permits higher velocities of air with smaller ducts. It "hushes" air, fan and duct noises.



THE PHILIP CAREY MANUFACTURING COMPANY

CINCINNATI 15, OHIO

Atlanta 3, Ga.
Boston 29, Mass.
Chicago 6, Ill.
Cincinnati 2, Ohio
Cleveland 3, Ohio
Dallas 1, Texas
Detroit 2, Mich.
Los Angeles 33, Calif.
New York 17, N. Y.
Philadelphia 32, Pa.
Pittsburgh 19, Pa.
St. Louis 10, Mo.
Seattle 4, Wash.

For pages on Carey Built-up Roofing, Shingles, Corrugated Roofing, Heat Insulation, see Sweet's File Index

SPECIFICATION NO. 2—Pitched Roof Insulation—25/32 in. Insulating Sheathing or 1/2 in. Building Board

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications. Select and include only those clauses which apply to the particular work.*

(1) SCOPE OF WORK

The carpenter contractor shall insulate the following roofs with Celotex [25/32-in. Sheathing] [1/2-in. Asphalted Building Board] [1/2-in. Building Board].

NOTE: *Here list and locate definitely the roof areas to be insulated.*

(2) FRAMING

Rafters shall be spaced 12 or 16 in. on centers.

(3) MATERIALS

Roof Insulation shall be Celotex [25/32-in. Sheathing] [Square Edge] [Center Matched] [1/2-in. Asphalted Building Board] [1/2-in. Celotex Building Board].

(4) APPLICATION

(4a) CELOTEX CANE FIBRE INSULATION APPLIED DIRECTLY OVER ROOF RAFTERS AND UNDER WOOD SHEATHING OR SHINGLE LATH—

(4a1) Apply Celotex [Square Edge Sheathing] [Asphalted Building Board] [Building Board] directly to the top of roof rafters with the length parallel with the rafters. Where intermediate end joints are necessary, use 2 x 4-in. headers between framing members as a nailing base. All joints shall center over framing. Space boards 1/16 to 1/8 in. apart at all edges. Nail to intermediate framing members first, spacing nails 6 in. apart and then nail along the edges, spacing nails 3 in. apart and 3/8 in. in from the edges. Drive nails until the heads are slightly below the surface. (In dry weather, moisten Celotex Building Board the day before application by sprinkling lightly with a broom dipped into a pail of water, and pile. Remove boards from the pile just prior to nailing to rafters.)

(4a2) Apply Celotex Center Matched Sheathing directly to the top of and with length at right angles to the roof rafters with ample bearing for nailing along the ends. Fit tongue and groove joints together. Stagger end joints in successive courses. Space boards 1/16 to 1/8 in. apart at square edges. Nail to intermediate framing members first, and then nail along the edges. Space nails 4 1/2 in. apart and 3/8 in. in from the edges.

(4a3) NAILS—

(a) Use 2-in. galvanized roofing nails with 3/8 or 1/2-in. heads for Celotex Sheathing.

(b) Use 1 1/2-in. galvanized roofing nails with 3/8-in. heads for 1/2-in. thick Celotex [Building Board] [Asphalted Building Board].

NOTE: *When sheet metal roofing, asphalt shingles, prepared roll or composition roofing or rigid shingles are to be used as roof covering, specify wood sheathing over Celotex Cane Fibre Insulation. See below.*

(4a4) Wood Sheathing Over Celotex Cane Fibre Insulation—Apply wood sheathing over Celotex Boards, driving nails into roof rafters, using nails of sufficient length to penetrate roof rafters at least 1 in. All joints shall butt over the centers of rafters.

(4a5) Roofing material shall be applied to wood sheathing in accordance with standard practice.

NOTE: *When wood shingles, rigid asbestos shingles, slate or tile are to be used as roof covering, shingle lath may be applied over Celotex Cane Fibre Insulation to serve as a nailing base for the shingles. See below.*

(4a6) Wood Strips Over Celotex Cane Fibre Insulation—

NOTE: *Where slate or tile roofing or rigid asbestos shingles are to be used, specify a continuous layer of Celotex 15-lb. Asphalt Felt to be laid directly on the Celotex insulation.*

Apply [1 x 2 in.] [1 x 3 in] [1 x 4 in.] wood strips over the [Celotex insulation] [waterproofed felt] properly spaced to conform to exposure of the roofing units. Strips shall be nailed through the Celotex insulation into the rafters, using nails of sufficient length to penetrate rafters at least 1 in.

(4a7) Provide solid wood sheathing over the Celotex insulation under all metal work, such as gutter aprons, valleys, hips, ridges, saddles, etc., to which the metal shall be attached, in accordance with standard practice.

(4a8) Roofing units shall be applied to wood strips in accordance with standard practice.

(4b) CELOTEX CANE FIBRE INSULATION APPLIED OVER WOOD SHEATHING OR OTHER CONTINUOUS NAIL HOLDING ROOF SURFACES—

(4b1) Apply Celotex [Sheathing] [Asphalted Building Board] [Building Board] directly to roof deck [specify type]. Edges of Celotex Boards shall be brought to moderate contact. Nail 12 in. on center along edges and through middle of Celotex Boards. Space nails 3/8 in. in from edges. Drive nails until the heads are slightly below the surface. (In dry weather, moisten Celotex Building Board as specified in [4a1]).

(4b2) Nails—Same as (4a3).

(4b3) Wood Strips Over Celotex Cane Fibre Insulation—Same as (4a6).

(4b4) Same as (4a7).

(4b5) Same as (4a8).

SPECIFICATION NO. 3—Exterior Wall Insulation—1/2 in. Asphalted Building Board

Use paragraph 1, 2, 4a, note No. 2 under 4a, 4b, 4e, 5 and 6 from Specification No. 1, page 5.

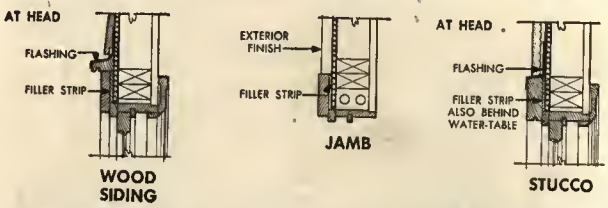
(3) MATERIAL

Sheathing shall be Celotex Asphalted Building Board 1/2-in. thick, 4 ft. wide by length best adapted.

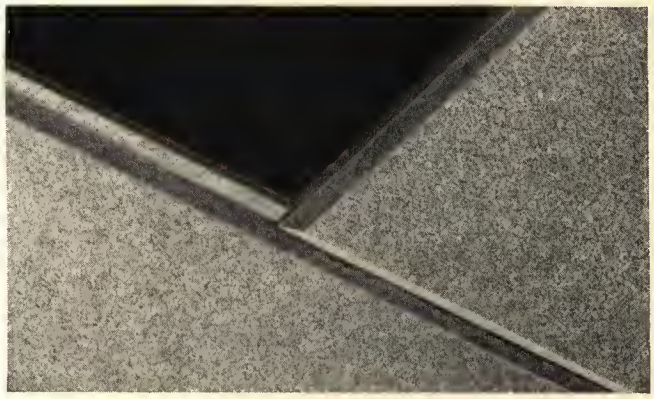
(4) APPLICATION

(4b) NAILS—Use 1 1/2-in. roofing nails with 3/8-in. head.

NOTE: *The proper adjustment in dimensioning ordinary window and door jambs should be made to compensate for 1/2-in. Asphalted Building Board. Where stock frames are used, suitable mention should be included in the millwork portion of the carpentry specifications to allow for such variation.*



(See detail above.) On modular standard window frames, reversible blind stop extension permits frame to be used with 1/2-in. Celotex Asphalted Building Board or 25/32-in. Celotex Sheathing. Consult National Door Manufacturers Association's catalog.



Celotex Insulating Lath

DESCRIPTION

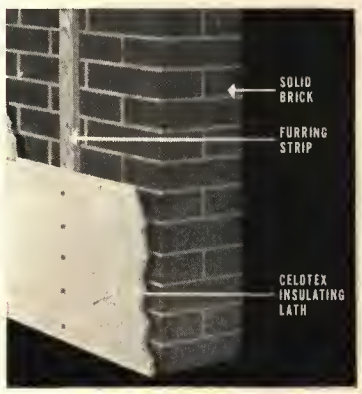
Celotex Cane Fibre Insulating Lath is a continuous, solid plaster-base material. Many years experience has proven the practicability and service of this sheet lath. It is manufactured under moisture control conditions to minimize expansion and prevent bucklings. All edges are beveled and the long edges are shiplapped. Plaster will not work through the joints or board itself to wet the back surface. Made of cane fibre under the Ferox* Process, the lath units have all the inherent strength and physical characteristics of all Celotex Cane Fibre Products (see pages 2 and 3).

USES

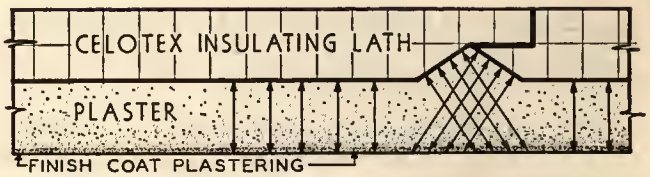
For heat insulation of exterior walls (frame and masonry) and top floor ceilings. For sound insulation of dividing walls, interior partitions and intermediate floors (ceilings).

ADVANTAGES

The beveled and shiplapped joints provide the necessary reinforcement along the edges. It provides the necessary diagonal reinforcing allowing a longer and gradual change in the bonding surface to resist tension due to structural changes. Due to the extra thickness of the plaster at the joints, cracking tendency caused by the inelastic properties of plaster is avoided. As the plaster dries the resiliency of the fibres and internal strength of the board resists any subsequent deformation. As the scratch and brown coats dry a continuous homogenous surfacing with additional bracing strength is provided to eliminate line cracks.



Celotex Insulating Lath is an effective, economical and practical material to provide adequate insulation in masonry construction.



The beveled edges provide added plaster reinforcement at the joints where needed.

PLASTER BONDING STRENGTH

Laboratory tests show that a direct perpendicular pull of 700 to 1,160 lb. per sq. ft. is required to break plaster loose from Celotex Cane Fibre Insulating Lath. As the plaster load of a ceiling equals only about 5 lb. per sq. ft., the use of this product as a plaster base provides a factor of safety of about 150. This is greatly in excess of the strength of bond of plaster to wood lath.

TYPES

REGULAR LATH—Has the natural, rough textured surface on the front and back. ½ in. thick, 18 x 48 in.

VAPOR-SEAL LATH—Has a surface coating of asphalt, on the back surface, to act as a vapor barrier. ½ in. thick, 18 x 48 in.

PREVENTION OF CONDENSATION

For use on exterior walls and top floor ceilings in presence of high humidity or in cold climates where air conditioning or humidifiers are used, Celotex Vapor-Seal Insulating Lath is recommended. The application specifications are identical to Celotex Regular Insulating Lath.

Vapor barriers should be located as near as possible to the warm side of the wall because the temperatures at such barriers must be high enough to prevent condensation.

Celotex Vapor-Seal Insulating Lath ½ in. thick was developed and is recommended for use with Celotex Sheathing or to provide a vapor barrier where other types of insulation are used within the framing. When used as recommended the temperatures at the vapor barrier on the back of ½ in. Celotex Vapor-Seal Lath are sufficiently high to prevent condensation.

Celotex Lath Provides a Continuous Plastering Surface

*Reg. U.S. Pat. Off.

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4a

CELOTEX

REG. U. S. PAT. OFF.

Structural Insulation

AND OTHER BUILDING PRODUCTS

THE CELOTEX
CORPORATION
Chicago 3, Illinois

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OTHER CELOTEX BUILDING PRODUCTS

CELOTEX ACOUSTICAL MATERIALS—See Section 11a.

CELOTEX GYPSUM PRODUCTS—See Section 12b.

INSULATING SIDINGS—Rigid, asphalt-treated sidings made from Ferox*-treated cane fibre board. Brick and stone patterns, granule-surfaced.

CELOCRETE* LIGHTWEIGHT AGGREGATE—An expanded blast furnace slag aggregate graded for making precast lightweight building units, for lightweight monolithic concrete for structural floors and roofs, for floor and roof fill, for fireproofing structural steel, for wall sections, etc.

CELOTEX TRAFFIC TOP*—An extremely wear-resistant cane fibre insulation board, impregnated with selected bitumens by a special process. It is designed for use as a surfacing over built-up roofing, play courts, ramps, terraces, recreation rooms, and other similar surfaces subject to foot traffic. Available only in Eastern sections of the United States.

DISTRIBUTION

Celotex Products are marketed nationally through dealers. Stocks are maintained in all principal cities in the United States and in most foreign countries. Celotex Roof Insulation is available also through reliable roofing contractors everywhere. Acoustical materials are available through franchised distributors.

SERVICE

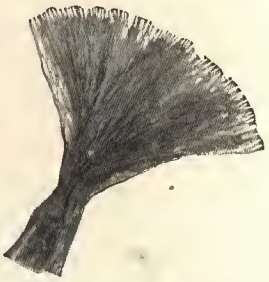
The Celotex Corporation maintains an Architects' Sales Service Department which is available for consultation.

Celotex Structural Insulation Products are made from *bagasse*, the tough fibre of sugar cane after the sugar has been extracted. Cane fibre is an ideal basic material for manufacturing strong, rigid insulation board products because the individual fibres are unusually long, tough, strong, and resilient and are highly resistant to deterioration. Due to climatic conditions and processing methods, Louisiana bagasse has superior qualities not found in sugar cane fibre produced elsewhere.

MANUFACTURING PROCESS

The cane fibres are first cooked and repeatedly washed. The cooking dissolves all sugar and other soluble matter and the washings remove it. The clean fibres are then chemically treated (waterproofed) so that the entire board throughout its thickness is highly water resistant.

Next the fibres are treated against dry rot and termites by the patented Ferox* process (see page 3). While still wet they are then firmly felted, or interwoven (without the addition of adhesives), and fabricated into continuous boards 12 ft. wide and more than 1,000 ft. long. The wet board passes through driers heated to 350° F. or more, drying the board and resulting in a sterile product.



Bagasse, the Source of Celotex Cane Fibre Products

PROPERTIES

THERMAL CONDUCTIVITY—The insulating value of Celotex cane fibre board products varies with use and has been established by many nationally known laboratories (U. S. Bureau of Standards, Illinois Institute of Technology, and others) and meets the requirements set up in A.S.T.M., Federal Specifications, and U. S. Dept. of Commerce Commercial Standards.

TOUGHNESS—A quality of Celotex fibre board products which has advantages in application and shipment is its toughness or resistance to fracture. This characteristic has been measured by means of the Izod type impact machine described in A.S.T.M. designation D256-43T. This test consists of a pendulum swinging through its arc to break a small sample of material and recording the amount of energy expended. Izod tests conducted by Robert W. Hunt Company indicate a high degree of toughness for Celotex Fibre Board Products.

*Reg. U.S. Pat. Off.

COMPRESSIVE STRENGTH—There are two conditions of compressive strength involved in actual practice:

1. The per cent reduction in thickness under load.
2. The per cent reduction in thickness after removing load.

The following table shows the reduction in thickness of Celotex cane fibre board under various load intensities, and the "come-back" upon removing the load. The tests were made by Robert W. Hunt & Company.

Pressure lb. per sq. in.	Per cent Reduction in thickness under load	Per cent Reduction in thickness after removing load
5	1.14	0.62
10	2.44	1.09
20	4.30	1.76
40	8.86	3.16
100	19.22	7.82

NAILING STRENGTH—When standard 1½ in. galvanized roofing nails are spaced 3 in. apart and ⅜ in. away from the edge (recommended Standard Practice) a Celotex Building Board joint will sustain a pull of 750 lb. per ft. of joint before the board pulls away from the nail. This is based on ½ in. Celotex Building Board; greater pulls would be sustained by greater thicknesses.

MOISTURE RESISTANCE—All Celotex cane fibre products are thoroughly processed for water resistance during manufacture by means of a chemical treatment. However, Celotex cane fibre products are not recommended where they will come in direct contact with a hydrostatic head without the additional protection of a bituminous waterproofing course, consisting of alternate layers of saturated roofing felt and asphalt or pitch.

EXPANSION AND CONTRACTION—The linear expansion and contraction of Celotex cane fibre products due to temperature changes is practically nil. The linear expansion of Celotex cane fibre board as the result of moisture changes is only 15/100 of one per cent for a change from 35 per cent to 70 per cent in the relative humidity.

FEROX* PROCESS—The Ferox process (patented), used in the manufacture of all Celotex cane fibre products, is a method whereby the individual fibres, in their wet state before formation into a board, are coated with a chemical complex which is toxic to fungi, termites and other cellulose destroying organisms. This chemical complex in no way alters the physical properties or utility of the finished products. The Ferox-processed Celotex cane fibre product presents no hazards to humans or domestic animals.

TERMITE RESISTANCE—The Ferox* process was originally developed for Celotex cane fibre products sold in tropical countries in order to positively protect the materials against termites. Laboratory tests as well as hundreds of field tests in the tropics have shown that Ferox-treated products are effectively protected against termite attack.

DRY ROT RESISTANCE—The Ferox* process effectively protects against attack by dry rot fungi, making Celotex cane fibre products especially suited for use where moisture collects and does not readily evaporate (e.g., roof sheathing, roof insulation) and in buildings where high humidities exist (e.g., textile mills).

RODENT AND VERMIN RESISTANCE—Celotex cane fibre products contain no food for squirrels, rats, mice or other rodents or vermin. Rodents will only attack a Celotex cane fibre board when food or water on the opposite side attracts them, in which case they may gnaw a hole through it as they would through plaster, wood or even concrete. When this occurs it will be noted that the fibres are left lying at the hole and are not eaten.

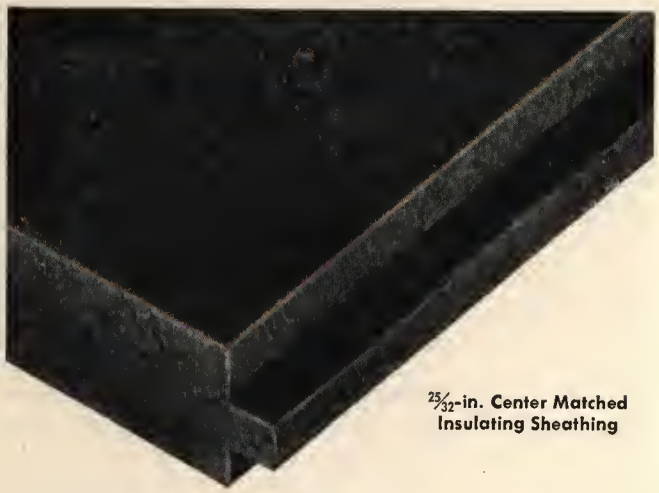
FIRE RETARDANT—Celotex cane fibre does not flame readily like wood, because it contains no pitch or resins. Its heat insulating value retards the spread of fire and tends to confine fire to the space in which it originates. It is used normally in large sheets and thus presents few cracks or open joints through which flame can pass and ignite the edges of the material or reach more combustible material beyond. Celotex cane fibre weighs only a third to a quarter as much as wood and generates correspondingly less heat.

DURABILITY—The life-of-the-building permanency of Celotex cane fibre products is due to (1) the natural decay-resistance of cellulose fibre, (2) Ferox* process protection against dry rot, other fungi, and termites, and (3) the moisture-resistance of the treated fibres.

WORKABILITY—Celotex cane fibre board is easily cut, carved, grooved and otherwise worked with ordinary wood-working tools with keen cutting edges. Special cutting knives and grooving planes have been developed by the Stanley Company and other tool makers for beveling, grooving and cutting Celotex Building Board to leave clean, smooth surfaces. Celotex Building Board may be sanded, stained, painted, lacquered, nailed and glued or cemented, making it one of the most facile materials used in building construction.

WEIGHT—The weight of Celotex cane fibre products varies according to the density. The shipping weights per sq. ft. of some of these products are: ½ in. Building Board—.77 lb., ½ in. Interior Finish—.8 lb., 25/32 in. Sheathing—1.36 lb., ½ in. Insulating Lath—.73 lb., and ½ in. Regular Roof Insulation—.66 lb.

*Reg. U.S. Pat. Off.



25/32-in. Center Matched Insulating Sheathing

DESCRIPTION

Celotex Insulating Sheathing is an asphalted cane fibre product designed to be used as a wall sheathing in frame construction in combination with various types of exterior finish, such as wood siding, wood shingles, stucco, or brick veneer. Building paper is not required where Celotex Sheathing is used on walls except under stucco. (Under F. H. A. Specifications sheathing paper may be omitted over Celotex Sheathing when wood siding is used, but is required for other exterior surfacing materials applied over this or other types of sheathing.) Also recommended as roof boarding on pitched roofs with wood stripping or solid wood sheathing. Celotex Sheathing is integrally moisture-resistant and treated against dry rot by the patented Ferox process. In addition it is given a weatherproofing surface treatment—both sides and all edges being coated by means of a surface impregnation of asphalt. See details below for recommended uses.

TYPES AND SIZES

BIG BOARD—For vertical application, with long dimension parallel to framing members. 4 ft. wide x 8, 9, 10 and 12 ft. long by 25/32 in. thick. Square edges.

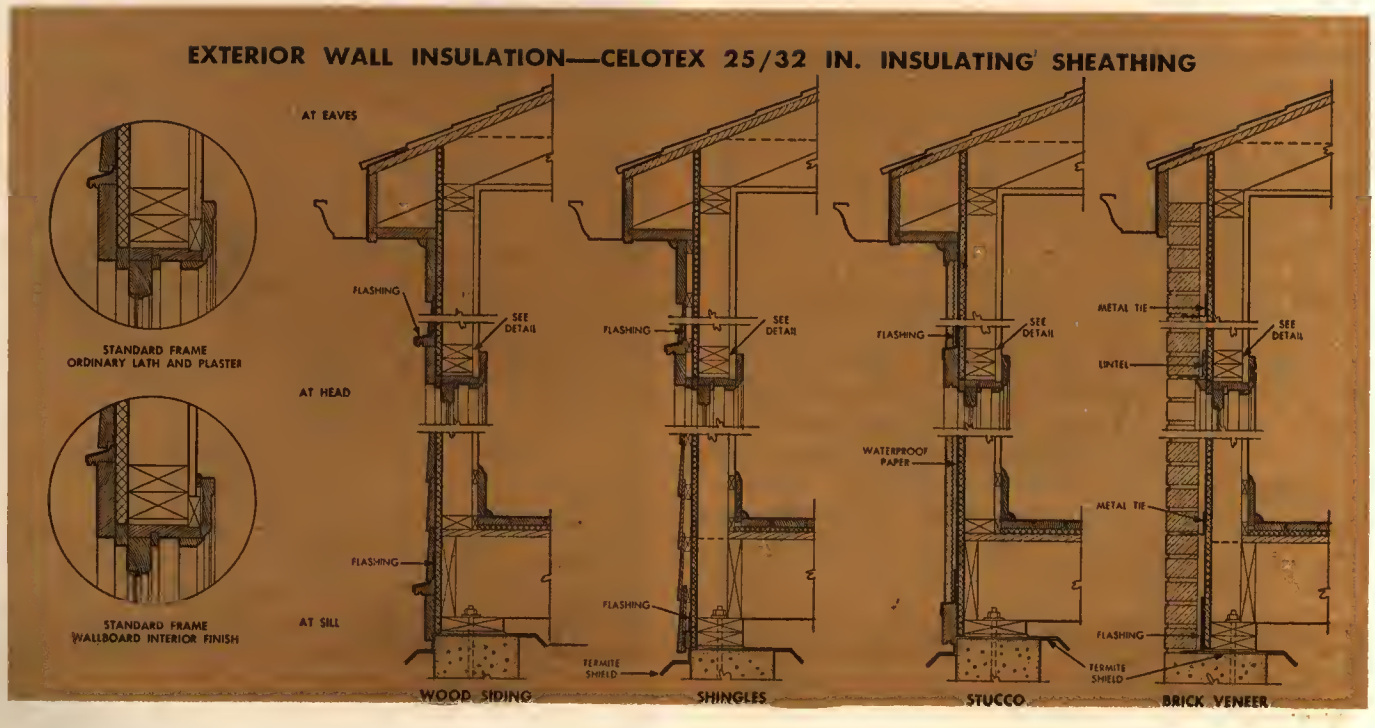
CENTER MATCHED—For horizontal application, with long edges at right angles to framing. 2 ft. wide x 8 ft. long x 25/32 in. thick. Tongue and groove on long edges.

ASPHALTED BUILDING BOARD—4 ft. wide x 8, 9, 10 and 12 ft. long x ½ in. thick. Square edges.

STRUCTURAL STRENGTH

Tests conducted by Robert W. Hunt Co., Columbia University, and other recognized testing laboratories show that 4-ft. wide Celotex Insulating Sheathing exceeds the bracing strength of horizontal wood sheathing with let-in bracing, and is approximately the same as diagonal wood sheathing. Partial results taken from such tests are shown below:

Type of Sheathing (4 ft. x 8 ft. panels)	Applied Loads (in lbs.)	Lateral Displacement (in inches)
N.C. Pine Sheathing 1 in. x 8 in. (nominal) T&G applied horizontally	1600 2700 (max.)	3.10 7.90
N.C. Pine Sheathing 1 in. x 8 in. (nominal) T&G applied diagonally	1625 2800 6540 (max.)	.10 .27 3.20
Celotex Sheathing 25/32 in. thick applied as a continuous sheet	1640 2700 6530 8920 (max.)	.10 .20 .90 2.00
½ In. Celotex Asphalted Building Board (8 ft. x 12 ft. panel)	1500 2000 3100 (max.)	.28 .45 2.22



SPECIFICATION NO. 1—Exterior Wall Insulation 25/32 in. Insulating Sheathing

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*
NOTE: *Select and include only those clauses which apply to the particular work.*
NOTE: *For ½ in. Asphalted Building Board used as Sheathing, see Specification No. 3, page 6.*

(1) SCOPE OF WORK

The carpenter contractor shall sheath all exterior walls from tops of foundation to underside of roof sheathing at the eaves, gables and dormers with Celotex Sheathing.

(2) FRAMING

All framing shall be 12 or 16 in. on center.
NOTE: *Follow the standard recommendations of the Building Code Committee of the U. S. Department of Commerce for all wood framing. All inner stud spaces shall be securely blocked off at plates and sills to prevent free circulation of air through such places.*
NOTE: *Celotex 25/32 in. Big Board Insulating Sheathing may be applied to braced framing 24 in. o.c. where regulations permit.*

(3) MATERIAL

Sheathing shall be Celotex Sheathing [25/32 in. thick by 4 ft. wide by length best adapted] [center matched 25/32 in. thick by 2 ft. by 8 ft. units].

(4) APPLICATION

(4a) GENERAL—Apply Celotex Sheathing to the framing members. All end joints shall center over framing. Space boards 1/16 to ⅛ in. apart at all ends (and at all edges which are centered over framing members). At window and door frames, bring Celotex Sheathing in close contact with frame members.

NOTE: *Celotex Sheathing is made ⅛ in. or less than full theoretical dimensions to allow for spacing as above on standard framing members.*
NOTE: *Where humidity conditions are above normal or where air conditioning is used, a vapor barrier (such as Celotex Vapor-seal Lath or other vapor-resistant barrier) applied to the inside face of the studs is recommended for conventional wood frame construction.*

(4b) 4 FT. WIDE, SQUARE EDGE UNITS—Apply Celotex Sheathing vertically with the length parallel with framing members. Boards shall be of sufficient length to completely span between sills and plates or other structural nailing members. Where intermediate end joints are necessary, use 2 x 4 in. nailing headers between framing members as nailing base. All joints shall center over framing.

(4c) CENTER MATCHED UNITS—Apply Center Matched Units horizontally at right angles to framing members with tongue up. Fit the tongue and groove joints securely together. Stagger end joints in successive courses.

(4d) NAILS—Use 2 in. galvanized nails with ⅜ or ½ in. heads.

(4e) NAILING 4 FT. WIDE, SQUARE EDGE UNITS—First nail Celotex Sheathing to intermediate framing members and then nail the edges. On intermediate framing members, space nails 6 in. apart. At all edges space nails 3 in. apart and ⅜ in. in from the edge. Drive nail heads flush with the surface.

NOTE: *The surface of square edge units is indented to show proper location of nails.*

(4f) NAILING CENTER MATCHED UNITS—First nail units to intermediate framing members and then nail the ends, spacing nails 4½ in. apart and ⅜ in. in from the edge (6 nails to each support). Drive nails until heads are flush with the surface.

(5) INSTRUCTIONS FOR OTHER TRADES

NOTE: *Provide for the following in other specification divisions when and where they apply.*
NOTE: *Celotex Sheathing is not a nailholding base.*
NOTE: *For building paper requirements see first paragraph on page 4.*

(5a) WOOD SIDING (Horizontal)—All joints shall butt over the center of a stud. Nail through Celotex Sheathing to each stud using nails of sufficient length to pass through and penetrate the stud at least 1 in. For siding not over ½ in. thick, use 9d 11½ ga. diamond point siding nails. For siding not over ¾ in. thick, use 10d 10½ ga. diamond point siding nails.

(5b) MASONRY VENEER—Masonry veneer shall be laid in the usual manner allowing not less than ½ in. space between the face of the Celotex Sheathing and the back of the veneer. Metal ties for masonry veneer shall be nailed through the sheathing into the studs. Nails shall be of sufficient length to pass through sheathing and penetrate the studs at least 1 in.

(5c) EXTERIOR STUCCO—

(5c1) Flashing—Flash over the head casings of all windows and doors with metal or prepared roofing.

(5c2) Waterproof Building Paper—Cover Celotex Sheathing beneath exterior stucco with a continuous layer of asphalt coated waterproof paper, with all edges lapped and securely nailed into framing members.

(5c3) Self-Furring Stucco Bases—Self-furring stucco bases, such as beveled wood lath and various forms of self-furring wire and expanded metal lath, shall be applied directly over Celotex Sheathing and paper, nailing or stapling through the board into the studs with standard penetration into the wood.

(5c4) Non-Furring Stucco Base—(a) Provide 1 x 2 in. vertical wood furring strips to each stud over Celotex Sheathing and paper to form furring for metal lath. Nails shall be of sufficient length to penetrate framing members at least 1 in.

(b) Metal furring, round steel rods, or galvanized crimped band iron shall be stapled or nailed through the board into the studs with standard penetration into the wood. Metal lath stucco base shall be wired to the furring.

(5d) FURRING STRIPS FOR RIGID SHINGLES AND VERTICAL WOOD SIDING—Provide 1 x 2 in. wood furring strips laid at right angles to framing members, over the Celotex Sheathing, properly spaced to take shingle weather exposure. Nails shall be of sufficient length to pass through the board and penetrate the framing members at least 1 in.

NOTE: *For direct application without furring, using special fasteners, write to the Celotex Corp.*

(6) PAINTING EXPOSED EXTERIOR SHEATHING

Celotex Sheathing (Big Board only) is an ideal material for exterior surfacing of so-called temporary structures. After application to framing as specified above, apply battens and wood trim over the boards. For painting or finishing the asphalt surfaces when exposed to weather write for Technical Note 43i.

Celotex Center Matched 25/32-in. Insulating Sheathing

Celotex Big Board 25/32-in. Insulating Sheathing

SPECIFICATION NO. 2—Pitched Roof Insulation—25/32 in. Insulating Sheathing or 1/2 in. Building Board

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications. Select and include only those clauses which apply to the particular work.*

(1) SCOPE OF WORK

The carpenter contractor shall insulate the following roofs with Celotex [25/32-in. Sheathing] [1/2-in. Asphalted Building Board] [1/2-in. Building Board].

NOTE: *Here list and locate definitely the roof areas to be insulated.*

(2) FRAMING

Rafters shall be spaced 12 or 16 in. on centers.

(3) MATERIALS

Roof Insulation shall be Celotex [25/32-in. Sheathing] [Square Edge] [Center Matched] [1/2-in. Asphalted Building Board] [1/2-in. Celotex Building Board].

(4) APPLICATION

(4a) CELOTEX CANE FIBRE INSULATION APPLIED DIRECTLY OVER ROOF RAFTERS AND UNDER WOOD SHEATHING OR SHINGLE LATH—

(4a1) Apply Celotex [Square Edge Sheathing] [Asphalted Building Board] [Building Board] directly to the top of roof rafters with the length parallel with the rafters. Where intermediate end joints are necessary, use 2 x 4-in. headers between framing members as a nailing base. All joints shall center over framing. Space boards 1/16 to 1/8 in. apart at all edges. Nail to intermediate framing members first, spacing nails 6 in. apart and then nail along the edges, spacing nails 3 in. apart and 3/8 in. in from the edges. Drive nails until the heads are slightly below the surface. (In dry weather, moisten Celotex Building Board the day before application by sprinkling lightly with a broom dipped into a pail of water, and pile. Remove boards from the pile just prior to nailing to rafters.)

(4a2) Apply Celotex Center Matched Sheathing directly to the top of and with length at right angles to the roof rafters with ample bearing for nailing along the ends. Fit tongue and groove joints together. Stagger end joints in successive courses. Space boards 1/16 to 1/8 in. apart at square edges. Nail to intermediate framing members first, and then nail along the edges. Space nails 4 1/2 in. apart and 3/8 in. in from the edges.

(4a3) NAILS—

(a) Use 2-in. galvanized roofing nails with 3/8 or 1/2-in. heads for Celotex Sheathing.

(b) Use 1 1/2-in. galvanized roofing nails with 3/8-in. heads for 1/2-in. thick Celotex [Building Board] [Asphalted Building Board].

NOTE: *When sheet metal roofing, asphalt shingles, prepared roll or composition roofing or rigid shingles are to be used as roof covering, specify wood sheathing over Celotex Cane Fibre Insulation. See below.*

(4a4) Wood Sheathing Over Celotex Cane Fibre Insulation—Apply wood sheathing over Celotex Boards, driving nails into roof rafters, using nails of sufficient length to penetrate roof rafters at least 1 in. All joints shall butt over the centers of rafters.

(4a5) Roofing material shall be applied to wood sheathing in accordance with standard practice.

NOTE: *When wood shingles, rigid asbestos shingles, slate or tile are to be used as roof covering, shingle lath may be applied over Celotex Cane Fibre Insulation to serve as a nailing base for the shingles. See below.*

(4a6) Wood Strips Over Celotex Cane Fibre Insulation—

NOTE: *Where slate or tile roofing or rigid asbestos shingles are to be used, specify a continuous layer of Celotex 15-lb. Asphalt Felt to be laid directly on the Celotex insulation.*

Apply [1 x 2 in.] [1 x 3 in] [1 x 4 in.] wood strips over the [Celotex insulation] [waterproofed felt] properly spaced to conform to exposure of the roofing units. Strips shall be nailed through the Celotex insulation into the rafters, using nails of sufficient length to penetrate rafters at least 1 in.

(4a7) Provide solid wood sheathing over the Celotex insulation under all metal work, such as gutter aprons, valleys, hips, ridges, saddles, etc., to which the metal shall be attached, in accordance with standard practice.

(4a8) Roofing units shall be applied to wood strips in accordance with standard practice.

(4b) CELOTEX CANE FIBRE INSULATION APPLIED OVER WOOD SHEATHING OR OTHER CONTINUOUS NAIL HOLDING ROOF SURFACES—

(4b1) Apply Celotex [Sheathing] [Asphalted Building Board] [Building Board] directly to roof deck [specify type]. Edges of Celotex Boards shall be brought to moderate contact. Nail 12 in. on center along edges and through middle of Celotex Boards. Space nails 3/8 in. in from edges. Drive nails until the heads are slightly below the surface. (In dry weather, moisten Celotex Building Board as specified in [4a1]).

(4b2) Nails—Same as (4a3).

(4b3) Wood Strips Over Celotex Cane Fibre Insulation—Same as (4a6).

(4b4) Same as (4a7).

(4b5) Same as (4a8).

SPECIFICATION NO. 3—Exterior Wall Insulation—1/2 in. Asphalted Building Board

Use paragraph 1, 2, 4a, note No. 2 under 4a, 4b, 4e, 5 and 6 from Specification No. 1, page 5.

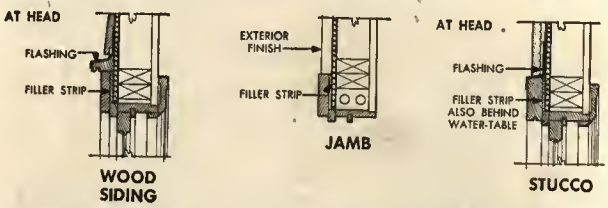
(3) MATERIAL

Sheathing shall be Celotex Asphalted Building Board 1/2-in. thick, 4 ft. wide by length best adapted.

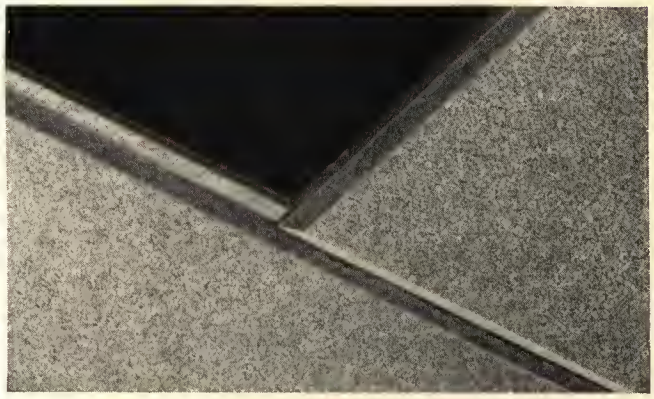
(4) APPLICATION

(4b) NAILS—Use 1 1/2-in. roofing nails with 3/8-in. head.

NOTE: *The proper adjustment in dimensioning ordinary window and door jambs should be made to compensate for 1/2-in. Asphalted Building Board. Where stock frames are used, suitable mention should be included in the millwork portion of the carpentry specifications to allow for such variation.*



(See detail above.) On modular standard window frames, reversible blind stop extension permits frame to be used with 1/2-in. Celotex Asphalted Building Board or 25/32-in. Celotex Sheathing. Consult National Door Manufacturers Association's catalog.



Celotex Insulating Lath

DESCRIPTION

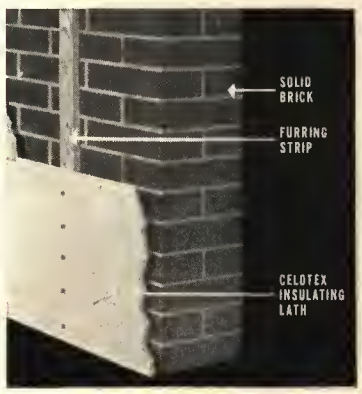
Celotex Cane Fibre Insulating Lath is a continuous, solid plaster-base material. Many years experience has proven the practicability and service of this sheet lath. It is manufactured under moisture control conditions to minimize expansion and prevent bucklings. All edges are beveled and the long edges are shiplapped. Plaster will not work through the joints or board itself to wet the back surface. Made of cane fibre under the Ferox* Process, the lath units have all the inherent strength and physical characteristics of all Celotex Cane Fibre Products (see pages 2 and 3).

USES

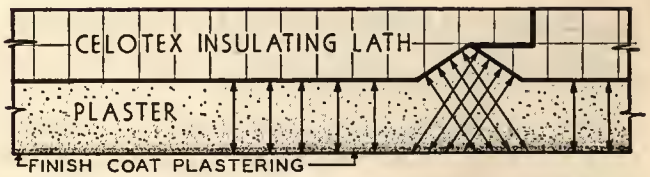
For heat insulation of exterior walls (frame and masonry) and top floor ceilings. For sound insulation of dividing walls, interior partitions and intermediate floors (ceilings).

ADVANTAGES

The beveled and shiplapped joints provide the necessary reinforcement along the edges. It provides the necessary diagonal reinforcing allowing a longer and gradual change in the bonding surface to resist tension due to structural changes. Due to the extra thickness of the plaster at the joints, cracking tendency caused by the inelastic properties of plaster is avoided. As the plaster dries the resiliency of the fibres and internal strength of the board resists any subsequent deformation. As the scratch and brown coats dry a continuous homogenous surfacing with additional bracing strength is provided to eliminate line cracks.



Celotex Insulating Lath is an effective, economical and practical material to provide adequate insulation in masonry construction.



The beveled edges provide added plaster reinforcement at the joints where needed.

PLASTER BONDING STRENGTH

Laboratory tests show that a direct perpendicular pull of 700 to 1,160 lb. per sq. ft. is required to break plaster loose from Celotex Cane Fibre Insulating Lath. As the plaster load of a ceiling equals only about 5 lb. per sq. ft., the use of this product as a plaster base provides a factor of safety of about 150. This is greatly in excess of the strength of bond of plaster to wood lath.

TYPES

REGULAR LATH—Has the natural, rough textured surface on the front and back. ½ in. thick, 18 x 48 in.

VAPOR-SEAL LATH—Has a surface coating of asphalt, on the back surface, to act as a vapor barrier. ½ in. thick, 18 x 48 in.

PREVENTION OF CONDENSATION

For use on exterior walls and top floor ceilings in presence of high humidity or in cold climates where air conditioning or humidifiers are used, Celotex Vapor-Seal Insulating Lath is recommended. The application specifications are identical to Celotex Regular Insulating Lath.

Vapor barriers should be located as near as possible to the warm side of the wall because the temperatures at such barriers must be high enough to prevent condensation.

Celotex Vapor-Seal Insulating Lath ½ in. thick was developed and is recommended for use with Celotex Sheathing or to provide a vapor barrier where other types of insulation are used within the framing. When used as recommended the temperatures at the vapor barrier on the back of ½ in. Celotex Vapor-Seal Lath are sufficiently high to prevent condensation.

Celotex Lath Provides a Continuous Plastering Surface

*Reg. U.S. Pat. Off.

SPECIFICATION NO. 4—Plaster Base—Regular or Vapor-Seal Lath

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) SCOPE OF WORK

The plastering contractor shall provide and have the lather install Celotex Cane Fibre Lath to following [wall] and [ceiling] areas.

NOTE: *Here list and locate. For outside walls and top story ceilings, specify Celotex Vapor-Seal Lath. For other wall or ceiling surfaces, specify regular Celotex Cane Fibre Lath. If more than one kind is used, list separately and the respective areas covered.*

(2) FRAMING

All framing or furring on masonry shall be straight, true, and spaced 12 or 16 in. o.c.

(3) MATERIAL

Plaster base shall be **[Celotex Cane Fibre Lath]** ½ in. thick or **[Celotex Cane Fibre Vapor-Seal Lath]** ½-in. thick, 18 in. wide x 48 in. long, delivered to the building site in the original manufacturer's packages.

(4) APPLICATION

(4a) GENERAL—Do not moisten lath units before application. Apply lath with beveled edges out with the length at right angles to the framing (or furring) members. End joints shall be staggered and centered over framing members.

Where piecing out is necessary, use only strips of lath. Accurately cut and fit lath around all electric outlet boxes, piping, etc.

(4b) SPACING—Bring edges together in moderate contact.

(4c) NAILS—Use 1⅛ in. long, blued wallboard nails for ½-in. thick lath.

(4d) NAILING—Nail lath units securely to each framing (or furring) member with 5 nails spaced uniformly approximately 3 in. apart (20 nails to each unit).

On curved surfaces, first nail at center to intermediate supports and spring to the contour of the framing.

(4e) ANGLE REINFORCEMENT—All corners shall be reinforced with metal corner beads. All re-entrant angles shall be reinforced with expanded metal lath angle strips. Reinforcement shall be securely stapled over lath. Use 6 in. strips of expanded metal lath at juncture of frame and masonry constructions.

(5) PLASTERING

(5a) CAUTION—Do not wet Celotex Cane Fibre Lath before applying plaster.

(5b) INSPECTION—Inspect nailing and notify lather of any portions of lathing not adequately secured in accordance with the manufacturer's specifications. See that all corners and angles are reinforced with metal corner beads accurately set to line with grounds and that all re-entrant angles are reinforced with expanded metal lath angle strips.

(5c) PLASTER—Use standard gypsum cement plaster or gypsum wood fibre plaster for scratch and brown coats mixed accurately in accordance with the manufacturer's specifications. Both scratch and brown coats shall be mixed to a wet consistency to allow for application with light trowel pressure and to facilitate darbying. Use any standard plaster finish over the brown coat, such as gypsum, lime, or lime gauged with gypsum, mixed in accordance with the manufacturer's specifications.

NOTE: *Lime plaster, lime gauged with gypsum, or gypsum plaster containing more than ten per cent of lime should not be used for scratch or brown coats.*

(5d) APPLICATION—Apply in three coats to full ½ in. thickness in accordance with the plaster manufacturer's specifications. Surfaces shall be rodded to a true plane. All corners and angles shall be plumb and true. Wherever necessary, and particularly on ceilings, provide plaster screeds to insure an even, uniform ½-in. plaster thickness.

In applying the scratch coat of plaster, it shall be carefully pressed into all beveled edges and joints to provide plaster reinforcement at these vital points.

If the brown coat becomes stiff and sets during darbying, wet down the surface to allow for darbying without undue pressure against the plaster surface.

Darby strokes shall be in the direction of framing members with the darby spanning two studs or joists.

(5e) VENTILATION—Provide adequate ventilation for the proper drying of the plaster.

NOTE: *Due to the moisture resistant characteristics of Celotex Cane Fibre Lath, all plaster moisture must be carried off by the air in contact with the exposed plaster surface.*

(5f) HEAT—Provide adequate heat to prevent injury to fresh plaster by frost.

(6) INSTRUCTIONS FOR OTHER TRADES

(6a) CONSTRUCTION—Follow the standard recommendations of the Building Code Committee of the U. S. Department of Commerce for all wood framing.

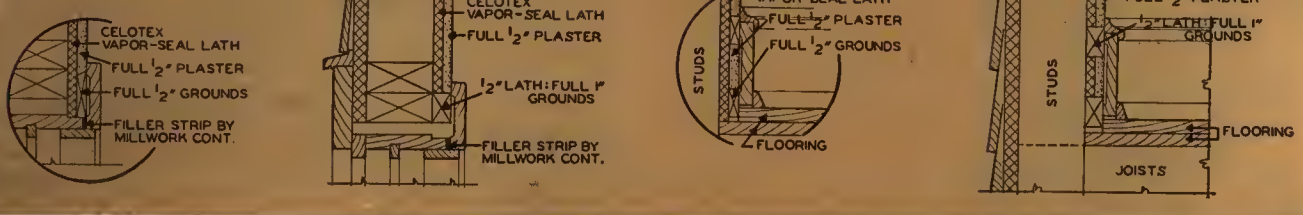
(6b) FURRING—Fur all exterior masonry walls to receive Celotex Cane Fibre Lath with 1 x 2 in. furring strips set 12 or 16 in. on centers accurately shimmed to a true, level plane. Secure substantially to masonry.

(6c) GROUNDS—Furnish and erect, substantially secured to framing members, wood grounds of sufficient thickness to provide a full ½ in. of plaster on the lath. (See details below.)
On ceilings it is desirable to provide small metal lath plaster screeds to insure uniform full plaster thickness.

SHORT FORM SPECIFICATION

All wall and ceiling areas herein listed or noted on drawings shall be insulated with **[½-in. CELOTEX CANE FIBRE LATH]** and/or **[½-in. CELOTEX CANE FIBRE VAPOR-SEAL INSULATING LATH]** applied in strict accordance with manufacturer's current specifications.

Jamb and Base Ground Details



Celotex Interior Finish Products are decorative structural insulating units for application to interior walls and ceilings in new construction or remodeling. They are triple-function materials in that they **build**, as they **insulate**, as they **decorate**. Made in a variety of shapes, sizes and finishes, a countless variety of decorative schemes can be achieved by using them in various combinations.

Celotex Interior Finish Products are distinguished from similar appearing products in that they are made from the fibre of sugar cane—long, tough, wiry fibres that give the boards proven superiority in structural strength, lasting durability, and insulation against heat, cold and noise. They are effectively protected against termite and dry rot attack by the exclusive Ferox* process.

Celotex Tile Board and Finish Plank with Type "E" concealed nailing joint may be applied by nailing over wood or other nail holding bases or by cementing and supplementary nailing through tongues over sound plaster. The use of adhesive for intermediate fastening avoids the necessity of face-nailing units.

Open framing, unsound plaster, masonry and concrete should be cross-furred with 1 x 3-in. furring strips.

Celotex Interior Finish products provide attractive, quiet, economical interiors in churches, schools, stores, offices, recreation parlors, and homes—both in new construction and remodeling.

PRODUCT	SIZES	FINISH	JOINT
Celotex Tile Board (All edges beveled)	12"x12", 16"x16" and 16"x32"	No. 91 Smooth White	Type "E" Concealed Nailing
Celotex Finish Plank (Long edges beveled)	Widths—12", 16" Lengths—8', 12'	No. 91 Smooth White	Type "E" Concealed Nailing
Celotex Building Board (Square edge)	Width—4' Lengths—8', 9', 10', 12'	No. 94 Warm White	Square Butt
Celotex Beveled Interior Board (Beveled edges)	Width—4' Lengths—8', 9', 10', 12'	No. 94 Warm White	Beveled Butt

Celotex Tile Board

Room decorated with Celotex Tile Board and Finish Plank

Celotex Finish Plank

Celotex Building Board

*Reg. U.S. Pat. Off.

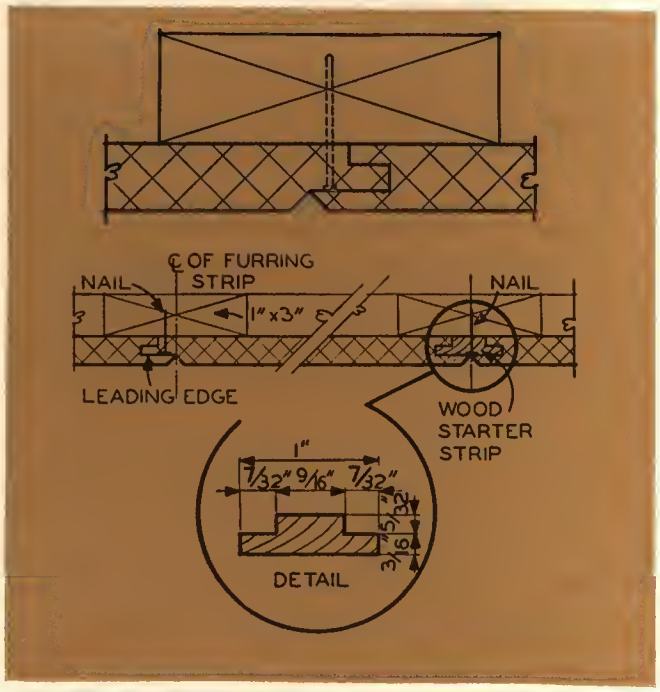
TYPE "E" CONCEALED NAILING JOINT

The Type "E" Concealed Nailing Joint is standard on all ½-in. Celotex Tile Board and Finish Plank. It is an interlocking joint, essentially tongue and groove in principle, but offset in such a manner that nails driven through the tongue are subsequently concealed by the interlocking member.

This practical joint feature permits true blind nailing and easy, rapid application of the tile and plank units. It provides a tight-fitting, dustproof joint.

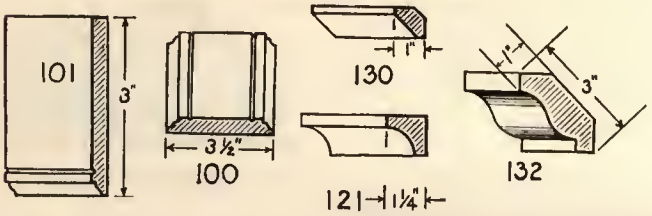
STARTER STRIPS

The recommended method of laying Tile and Plank is to use Wood Starter Strips and begin the job at the center of the area to be covered. The strips provide a joint for the first courses to be applied, and permit application in the four quarters of the area at one time. (See detail drawing.)



CELOTEX CANE FIBRE MOULDINGS

Factory-cut and shaped from cane fibre material in the designs illustrated below, these mouldings are especially designed to harmonize with Celotex Tile Board, Finish Plank, and Building Board interiors. They are equally adaptable for use with other wall and ceiling finishes. They may be used as furnished, painted, or left in natural finish.



Pattern No.	FINISH	Sizes	Pieces per Package	Lineal Feet per package	Thickness
100	No. 91 Smooth White	3½"x9'	18	162	½"
101	No. 91 Smooth White	3" x9'	18	162	½"
121	Natural color sanded	1¼"x9'	18	162	1¼"
130	No. 91 Smooth White	1½"x9'	18	162	½"
132	Natural color sanded	3" x9'	12	108	1"

CELOTEX BUILDING BOARD AND LATH FOR SOUND INSULATION

The sound insulating efficiency of wall or floor construction is called its "transmission loss" (T.L.) and is measured in decibels. Listed in Table I are the results of tests of the sound insulating properties of various partitions constructed with Celotex Cane Fibre Insulation in comparison with other types of standard partition construction in Table 2. These tests were made by nationally recognized laboratories. For complete information, write for Technical Note No. 10-e.

Table 1—
CELOTEX WALL OR PARTITION CONSTRUCTION

Construction	Transmission Loss	Weight Lb. per Sq. Ft.
2x4 in. studs, ½ in. Building Board on both sides—unplastered	32.2	3.8
2x4 in. studs, ½ in. Insulating Lath on both sides, plastered each side ½ in. plaster	40.9	12.6
2x4 in. staggered studs, ½ in. Insulating Lath both sides, plastered each side ½ in. plaster	53.7	13.1
2x2 in. special double stud construction, ½ in. Insulating Lath and ½ in. plaster both sides, ½ in. Building Board standing loose in middle	52.3	14.3
Double 3 in. gypsum hollow tile, plastered, ½ in. Building Board standing free in 2 in. air space separation	47.8	32.0

SOUND INSULATING FLOORS—Transmission of sound through floors is of two types: (1) airborne, (2) impact. Ordinary wood floor joist construction with insulating lath and plaster on under side of the joists and rough and finish flooring on top, has an efficiency for airborne sound of 45.1 decibels, but is comparatively ineffective against impacts on the bare floor. Higher insulating value for both airborne and impact sounds may be attained by using a floating floor or separate ceiling joist, or both. For definite recommendations, write to The Celotex Corporation, Chicago 3, Ill.

Table 2—
ORDINARY STANDARD WALLS

Construction	Transmission Loss	Weight Lb. per Sq. Ft.
2x4 in. studs, wood lath and plaster	37.5	17.1
1½ in. solid metal lath and plaster	29.6	13.9
2 in. solid gypsum tile, plastered both sides	34.2	19.6
4 in. hollow clay tile, plastered both sides	39.8	27.2
8 in. brick wall, ½ in. plaster both sides, no furring	53.8	88.0

SPECIFICATION NO. 5—Celotex Tile Board with Type "E" Joint

NOTE: *For application of other Celotex Interior Finish Products, see Specifications Nos. 6 and 7. Where more than one Celotex Interior Finish Product is being used, the application may be covered in one consolidated specification. For best results, detailed elevations of walls and plans of ceilings showing type, finish, size, and thickness of units, including mouldings, should be included and referred to in the specifications.*

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) SCOPE OF WORK

The carpenter contractor shall provide and install ½ in. Celotex Cane Fibre Tile Board [and Celotex Mouldings] to the following [wall] and [ceiling] areas.

NOTE: *Here list and locate definitely the wall and ceiling areas to be covered. Size of units and pattern desired shall be included in drawings and referred to here. (See pages 9 and 10.)*

(2) BASE

NOTE: *Select base best adapted to design and construction.*

(2a) FRAMING—Framing members shall be of sound seasoned lumber, straight and true, spaced to conform to the size of units to be used but not to exceed 16 in. on center. Joists and studs shall be set in alignment to provide a uniform base for application of the Tile Board. (For ceiling application with 16-in. Tile Board, cross stripping on 8-in. centers is advisable.)

(2b) FURRING STRIPS—Provide [1 x 3-in.] [1 x 4-in.] [2 x 2-in.] furring strips spaced 8, 12 or 16 in. on centers.

NOTE: *Where humidity conditions are above normal or where air conditioning is used, it is recommended that a 35 to 50-lb. glossy surfaced asphalt building paper be applied to open framing or furring strips before the application of tile board.*

(2c) SOLID WOOD BASE—Cover framing with 4, 6, or 8-in. wide, matched $^{25}/_{32}$-in. thick lumber to form a continuous level nailing base.

(2d) PLYWOOD BASE—Cover framing with plywood (preferably ⅜ in. thick) to form a continuous level nailing base.

(2e) PLASTER BASE—Shall be tested level and solid. Painted surfaces to be washed and scratched before application with adhesive.

NOTE: *Concrete construction plastered or unplastered should be furred as in (2b) above.*

(3) MATERIALS

(3a) Interior Finish shall be Celotex Type "E" Tile Board of size and pattern indicated on drawings.

(3b) For center point application, wood starter strips (see detail on page 10) distributed by The Celotex Corporation through lumber dealers must be used.

(3c) Adhesive shall be Celotex Plastic Heavy Body Adhesive or approved equal.

(4) APPLICATION

(4a) CONDITIONING—Condition all Tile Board by opening packages and allowing to stand 24 hours for adjustment to atmospheric conditions before erection.

(4b) GENERAL—Celotex Tile Board [and Celotex Moulding] shall be applied in exact accordance with the detailed drawings.

(4c) WITH STARTER STRIPS—Permanently nail the first starter strip on the center line parallel to the long dimension or one-half Tile's size away from center line if an uneven number of Tile are to be used. The starter strip at right angles shall be temporarily nailed so that its position may be adjusted as application of Tile Board progresses. Begin application of Tile Board at the intersection of the starter strips in such a way that the tongues of the Tile Board are the leading edges. Complete first course working parallel to the fixed starter strip from each side of the temporarily positioned starter strip and repeat procedure for subsequent courses. In this manner, application in the four quadrants of the area to be covered shall proceed to boundaries.

(4d) WITHOUT STARTER STRIPS—Begin application at the center of the boundary working in both directions along the boundary. When cutting to proper border widths, remove portion of Tile Board containing the groove. Application of subsequent courses of Tile Board shall begin at the corner and proceed towards the opposite wall or boundary with tongues as the leading edges.

(4e) SPACING—Bring units to a moderate contact. Do not force.

(4f) NAILS—For nailing through tongue use 1-in. No. 17 flat head brads. For face nailing concealed by mouldings, use 1¼-in. common flat head nails.

For exposed face nailing (on rectangular Tile Board), use 1¼-in. No. 17 flat head cadmium plated needle point nails or 1¼-in. No. 16 or No. 17 brads or finish nails. (Where high humidities exist, use cadmium plated or zinc coated nails.)

(4g) NAILING OVER WOOD—(Rectangular Tile shall be applied with long dimension across the furring strips.) Nail the tongue on the leading edge of the Tile to the furring strip. Space nails approximately 4 in. on center. Drive nails through thickest portion of tongue and as close to bevel as possible with heads flush. (Where possible, drive an additional nail at far corner of other tongue.)

NOTE: *If Celotex Adhesive is not used on intermediate bearing, face nail with 1 to 4 nails depending on size of Tile Board. If finish nails are used, drive at an angle and set flush or just below the surface.*

(4h) STAPLING OVER WOOD—Use a Bostitch Tacker for stapling to wood framing or furring, stapling through thickest portion of tongue and as close to bevel as possible with ½-in. staples and space staples same as for nails. For detailed information, ask for Technical Bulletin No. 44a.

(4i) ADHESIVE—For cementing and nailing Tile Board to plaster, use Celotex Plastic Heavy Body Adhesive or approved equal.

(4j) CEMENTING AND NAILING OVER PLASTER—On Tile Board apply spots of adhesive 3 or 4 in. in diameter to the back surface near each corner with additional spots approximately 8 to 10 in. apart over the area of large tile. Exercise care to prevent adhesive from appearing on the exposed finished side. Slide unit into position, level and true, and nail in position through tongue with additional face nailing as required for large units.

SUPPLEMENTARY

NOTE: *On new work, window and door frames shall be adjusted to compensate for thickness of Celotex Tile Board. On old work, Celotex Tile shall be brought in close contact with trim and finished with a beveled butt joint or all trim shall be removed and replaced over Celotex Tile with finished wood filler strips installed at all jambs to compensate for thickness of wall finish.*

SPECIFICATION NO. 6—Celotex Finish Plank with Type "E" Joint

NOTE: *For application of other Celotex Interior Finish Products, see Specifications Nos. 5 and 7. For best results, accurate, detailed elevations of walls and plans of ceilings showing type, finish, size, and thickness of units, including other Interior Finish Products, should be included in the drawings and referred to in the specifications.*

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) SCOPE OF WORK

The carpenter contractor shall provide and install ½-in. Celotex Cane Fibre Finish Plank [and Celotex Mouldings] to the following [wall] and [ceiling] areas.

NOTE: *Here list and locate definitely the wall and ceiling areas to be covered. Size of units and pattern desired shall be included in drawings and referred to here. (See pages 9 and 10.)*

(2) BASE

NOTE: *Select base best adapted to design and construction.*

(2a) FRAMING—Framing members shall be of sound seasoned lumber, straight and true, spaced not to exceed 16 in. on center. Joists and studs shall be set in alignment to provide a uniform base for application of the units.

(2b) FURRING STRIPS—Provide [1 x 3-in.] [1 x 4-in.] [2 x 2-in.] [2 x 4-in.] vertical furring strips spaced 12 or 16 in. on center for horizontal plank designs. On vertical plank designs, space strips horizontally 9 in. on centers up to shoulder height and spread to 12-in. centers above this height. Shim where necessary to a true plane. On ceiling applications, space strips 12 in. on center.

NOTE: *Where humidity conditions are above normal or where air conditioning is used, it is recommended that a vapor barrier of 35 to 50-lb. glossy surfaced asphalt building paper be applied to open framing or furring strips before the application of Finish Plank interiors.*

(2c) SOLID WOOD BASE—Cover framing with 4, 6, or 8-in. wide, matched $^{25}/_{32}$-in. thick lumber to form a continuous level nailing base.

(2d) PLYWOOD BASE—Cover framing with plywood (preferably ⅜ in. thick)) to form a continuous level nailing base.

(2e) PLASTER BASE—Shall be tested level and solid. Painted surfaces to be washed and scratched before application with adhesive.

NOTE: *Concrete construction plastered or unplastered should be furred as in (2b) above.*

(3) MATERIALS

(3a) Interior finish shall be Celotex Finish Plank of size and pattern indicated on drawings.

NOTE: *If dado is required, specify Celotex Hard Board.*

(3b) Adhesive shall be Celotex Plastic Heavy Body Adhesive or approved equal.

NOTE: *Supplementary nailing, spacing nails 16 in. o.c., must always be used with adhesive for applying Celotex Finish Plank, and Celotex Hard Board Products. (Where the sub-surface is not a suitable nailing base, wood furring strips must be provided.)*

(4) APPLICATION

NOTE: *Finish Plank may be applied by cementing and nailing over plaster or by nailing over wood.*

(4a) CONDITIONING—Condition all Finish Plank by opening packages and allowing to stand at least 24 hours for adjustment to atmospheric conditions before erection.

(4b) GENERAL—Celotex Finish Plank [and Celotex Mouldings] shall be applied in exact accordance with the detail drawings. Begin wall application of Celotex Finish Plank in one corner of a room, face nailing at wall junctures. The exposed nail heads should be later covered with a suitable moulding. Edges of ceiling application should be nailed in same manner. The tongue edge of each Plank should always be the leading edge in order to permit nailing. On ceiling applications, butt end joints, centering on furring strips, should be covered with mouldings or beveled to form a V-groove joint.

(4c) SPACING—Bring units to a moderate contact. Do not force.

(4d) NAILS—1-in. No. 17 flat head brads.

(4e) ADHESIVE—For cementing and nailing Finish Plank to plaster, use Celotex Plastic Heavy Body Adhesive or approved equal.

(4f) CEMENTING AND NAILING OVER PLASTER—On Finish Plank apply adhesive in ribbons 2 or 3 in. wide along edges with additional intermediate ribbons of adhesive along the center of wider planks. Exercise care to prevent adhesive from appearing on the exposed finished side. Slide unit into position, level and true, and nail in position by driving nails through thickest portion or tongue of Celotex Finish Plank and as close to bevel as possible with heads flush.

(4g) NAILING OVER WOOD—On Finish Plank drive nails through thickest portion of tongue of Celotex Finish Plank and as close to bevel as possible with heads flush. Space nails 16 in. o.c. and at each point of bearing.

(5) SUPPLEMENTARY

NOTE: *On new work, window and door frames shall be adjusted to compensate for thickness of Celotex Finish Plank. On old work, Celotex Plank shall be brought in close contact with trim and finished with a beveled butt joint or all trim shall be removed and replaced over Celotex Plank with finished wood filler strips installed at all jambs to compensate for thickness of wall finish.*

SPECIFICATION NO. 7—Celotex Building Board—Square Edge—No. 94 Finish and Celotex Beveled Interior Board—Beveled Edge No. 94 Finish

NOTE: *For application of other Celotex Interior Finish Products, see specifications Nos. 5 and 6. Where more than one Celotex Interior Finish Product is being used, the application of all such products may be covered in one consolidated specification. For best results, detailed elevations of walls and plans of ceilings showing disposition, size, and thickness of units, including mouldings, should be included and referred to in the specification.*

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) SCOPE OF WORK

The carpenter contractor shall provide and install **[Celotex Building Board] [Celotex Beveled Interior Board]** to the following **[wall] [and] [ceiling]** areas:

NOTE: *Here list and locate. If more than one thickness is used, list separately and the respective areas to be covered.*

NOTE: *See page 9 for sizes and thicknesses.*

(2) BASE

NOTE: *Select base best adapted to design and construction.*

(2a) FRAMING—Framing to receive **[Celotex Building Board] [Celotex Beveled Interior Board]** interior finish shall be of sound, seasoned lumber, straight and true, and shall be set in alignment to provide a uniform nailing base. Studs and joints shall be spaced to conform accurately to the design, set 12 or 16 in. on center. Install additional studs, joists, and headers where necessary to provide a continuous nailing base behind all edges of the **[Celotex Building Board] [Celotex Beveled Interior Board]** and back of baseboards, chair rails, cornices or other heavy wood trim.

(2b) FURRING STRIPS—Provide **[1 x 2-in.] [1 x 3-in.] [2 x 2-in.] [2 x 4-in.]** [specify] furring strips spaced according to design and on not over 16-in. centers, accurately shimmed to a true level plane. Secure substantially to solid masonry or plaster base.

(2c) SOLID WOOD BASE—Cover framing with 4, 6, or 8-in. wide, matched $^{25}/_{32}$-in. thick lumber to form a continuous level nailing base.

(2d) PLYWOOD BASE—Cover framing with plywood (preferably ⅜ in. thick) to form a continuous level nailing base.

NOTE: *Plaster and masonry surfaces should be furred as in (2b) above.*

(3) MATERIAL

Interior finish shall be **[Celotex Building Board] [Celotex Beveled Interior Board]** No. 94 Warm White, Smooth Finish. Board shall be ½ in. thick, 4 ft. wide by length best adapted.

(4) APPLICATION

(4a) CONDITIONING—The board shall be placed singly around the room and allowed to remain at least 24 hours before erection to allow adjustment to atmospheric conditions.

(4b) JOINT TREATMENT—

(4b1) Exposed Joints (Celotex Building Board—square edge) Where joints are to be left exposed, edges of boards shall be cut to a [shiplapped beveled joint] [inset wood moulding joint] with a fibre board cutting tool against a straight edge.

(4b2) Exposed Joints (Celotex Beveled Interior Board) Beveled butt edge provides "V" joint for a paneled effect.

(4b3) Covered Joints (Celotex Building Board—square edge)—Where joints are to be covered with battens, Celotex or other mouldings, plastic paint or wall covering, edges of boards shall be cut with a fibre board cutting tool or with a fine tooth saw, using a sharp blade, with rapid strokes and a minimum of pressure.

(4c) GENERAL—Apply **[Celotex Building Board] [Celotex Beveled Interior Board]** with smooth finish exposed and with length parallel to or at right angles to framing members, depending on design. All joints shall center over framing members.

(4d) EDGE SPACING (EXPOSED)—Bring boards to a moderate contact. Do not force into place.

(4e) EDGE SPACING (JOINTS TO BE COVERED)—Space boards 1/16 to ⅛ in. apart at edges.

(4f) NAILS EXPOSED—

(4f1) For nailing the board, use standard 1¼-in. galvanized finishing nails, No. 17 flat head cadmium plated or No. 16 gauge brads.

(4f2) Drive finishing nails or brads at an angle and set heads flush with a nail set to avoid hammer marks on the board. Drive flat head nails straight and flush, but do not set below the surface of the board.

(4g) NAILS COVERED (Under Battens, Mouldings, Wall Coverings, or Plastic Paint)—

(4g1) For nailing the board use 1½-in. galvanized shingle nails, galvanized roofing nails or box nails.

(4g2) Drive the nail heads slightly below the surface of the board.

(4h) NAILING—Nail the board to intermediate framing members first, spacing nails 6 in. apart; and then along the edges, spacing nails 3 in. apart and ⅜ in. in from the edge.

(4j) MOULDINGS, BATTENS AND TRIM—Apply [as detailed] over the board with nails of sufficient length to pass through the board and penetrate the framing members at least 1 in.

SUPPLEMENTARY

NOTE: *On new work, window and door frames should be adjusted to compensate for the thickness of (Celotex Building Board) (Celotex Beveled Interior Board). On old work, the board shall be brought in close contact with trim and finished with a beveled butt joint or all trim shall be removed and replaced over wood filler strips installed at all jambs to compensate for thickness of wall finish. Electric outlet boxes shall be set to finish flush with the face of the board.*

NOTE: *Temporary partitions or other temporary construction built with framing set 16 in. or not over 24 in. on center may be covered with (Celotex Beveled Interior Board) (Celotex Building Board) using either square butt joint or battened joints.*

NOTE: *For Insulating Pitched Roofs see Specification No. 2, page 6.*

NOTE: *For Celotex Building Board as a base for Plastic Paints and Wall Coverings, and for Felt Base Application for Wall Paper, see Specification No. 8, page 14.*

NOTE: *See page 14 for Decoration of Celotex Interior Finish Products.*

SPECIFICATION NO. 8—Covering Celotex Building Board with Plastic Paint or Wall Coverings

NOTE: *Use paragraphs 1, 2 (a, b, c, or d as required), 3, 4 (a, b, c, e, g, and h) from Specification No. 7, Interior Finish, Celotex Building Board, page 13.*

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

NOTE: *For more complete information, write The Celotex Corporation for Technical Note 43i.*

(5) PREPARATION FOR APPLICATION OF PLASTIC PAINT OR WALL COVERING (Wire Mesh Method)

(5a) COVERING JOINTS—

(5a1) Sanding—After the Celotex Building Board has been applied as specified above, rub down a recessed area from 4 to 6 in. wide at joints, using coarse sandpaper.

(5a2) Stripping—Strip joints with galvanized annealed wire mesh, 12 or 16 to the in., 3½ in. wide, using Swedish putty as a bonding cement. Apply similarly, a strip of wire mesh bent around all corners and re-entrant angles. Cover nail heads with Swedish putty applied with a putty knife and allow to dry.

(6) APPLICATION OF PLASTIC PAINT

(6a) Apply the plastic paint to the surface of Celotex Building Board with a wide brush to the proper thickness. Finish with a textured finish [Old English] [Swirl] [specify type].

NOTE: *Water base plastic paints can be applied directly to unsized Celotex Building Board. Specify sizing of the surface with oil or varnish size for oil base plastic paints.*

(6b) PAINTING AND GLAZING—After the plastic paint has thoroughly dried, apply a coat of lead and oil paint in color as selected or specially prepared sizes and allow to dry thoroughly. Finish with a glazing coat consisting of one part of boiled linseed oil and two parts of turpentine with color as selected. High light the surface by going over the fresh glazing coat with a cloth moistened with turpentine.

NOTE: *Most plastic paints are white. If a continuous uniform color is desired, specify that the pigment be added to the plastic paint before application.*

(7) APPLICATION OF WALL COVERING (Over Wire Mesh Reinforced Joints)

After the joints have been prepared as specified above, the surface of the Celotex Building Board shall be given a coat of paperhanger's size, glue size, or prepared size of the glue type. After the size is thoroughly dry, lightly sand the Celotex Building Board. [Wallpaper] [Decorator's Canvas] shall then be applied in accordance with conventional practice.

(8) PREPARATION FOR APPLICATION OF WALL COVERINGS OVER FELT BASE

NOTE: *This is an alternate to the wire screen method, par. (5).*

(8a) POINTING UP JOINTS—After the Celotex Building Board has been applied as specified in paragraphs (1) to (4) inclusive, sand down any uneven joints to a smooth flush surface. Level up any remaining irregularities or unevenness with spackle, Swedish putty, or other similar compound.

(8b) SIZING OF CELOTEX BUILDING BOARD SURFACE—Size the surface of the board with wallpaper paste, glue size, or prepared size of the glue type and allow to dry thoroughly.

(8c) APPLICATION OF FELT—Coat ¾ lb. deadening felt with wallpaper paste and apply to the Celotex Building Board. All felt joints must butt tightly and smoothly, but must be offset at least 6 in. from Building Board joints.

Along inside corners felts shall butt one against the other. On outside corners carry felts around corners so that all butt joints will be at least 8 to 10 in. from such corners.

NOTE: *Where felt and wallpaper is to be applied to ceilings as well as walls, apply felt on ceiling first and carry down 1 in. on the sidewalls.*

(9) APPLICATION OF WALLPAPER OR DECORATOR'S CANVAS (over Felt Base)

After the felt has been applied as previously specified and has dried thoroughly, apply [Wallpaper] [Decorator's Canvas] in accordance with conventional practice.

DECORATION OF CELOTEX INTERIOR FINISH PRODUCTS

NOTE: *For complete information on the decoration of Celotex Interior Finish Products and Celotex Hard Board, write The Celotex Corporation for Technical Notes 43i and 44b.*

(1) WATER PAINTS—Calcimines and water paints shall be applied directly to Celotex Cane Fibre Board Interior Finish Products. A preliminary coat of varnish size permits removal of calcimine finishes by washing.

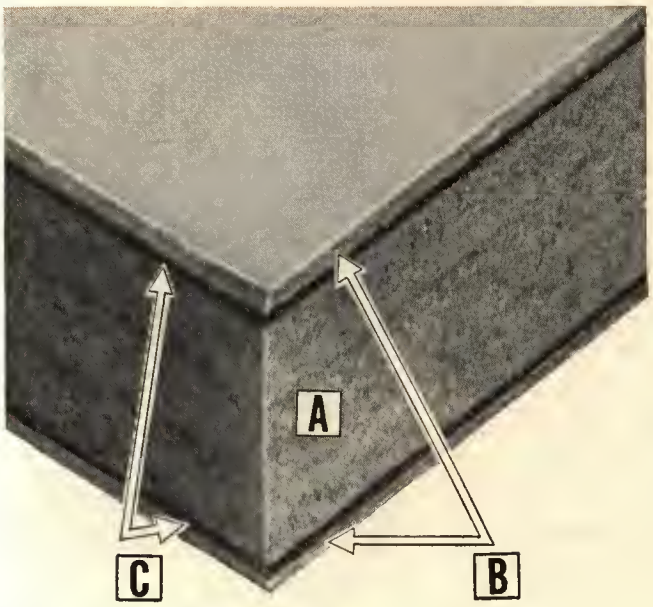
A single coat of casein base water paint will give very good coverage on Celotex Interior Finish Products, although two coats are recommended.

(2) STAINS—Stains are very effective in producing decorative effects on the textured surface [reverse side] of Celotex Building Board. Glue stains made by dissolving ½ lb. of flake or ground glue in a gallon of boiling water give the best results.

(3) OIL OR VARNISH PAINTS—The factory finishes used on Celotex Interior Finish Products act as primers increasing obtainable coverage per gallon of certain types of paint. Flat paints applied to Celotex Interior Finish Products in a one coat application will provide adequate coverage, but when a field applied pigmented wall primer is used, coverage per gallon of finish paint is greater and a better finished surface is obtained. Gloss paints always require an undercoater or primer before the application of the finish coat.

(4) STENCIL DECORATION—Where a light touch of color is desired or where a means of accenting a design is sought, stencils are recommended, using colors ground in Japan and applied with a stiff stencil brush.

(5) MISCELLANEOUS DECORATIONS—Artistic decorative effects may be produced by carving the surface of Celotex Building Board, particularly in the case of large relief carving where detail is not required. A design is first laid out in pencil. Razor blades or sharp knives are then used to carve the Celotex Building Board



DESCRIPTION

Celotex Cemesto* Board is a structural insulating unit consisting of a core of laminated cane fibre insulation board (A), surfaced on both sides with asbestos-cement board (B). A moisture-proof highly vapor-resistant bituminous adhesive (C) bonds the asbestos-cement to the core.

USES AND ADVANTAGES

Cemesto provides structural strength, insulation, and maintenance-free exterior and interior finish in a single-thickness material. It is used in industrial and commercial building of all kinds for exterior walls, roof decks, partition walls, and as a lining material. It may be applied to steel or wood framing. Cemesto is also used for construction of industrial process enclosures requiring temperature and humidity control, such as dryers, ovens, etc., in which temperatures do not exceed 200° F.

In home construction, Cemesto is used with wood or steel framing as a complete exterior wall, flat roof decks, partitions, and ceiling lining.

The light gray asbestos-cement board surfaces are hard, durable, washable and fireproof. They require no painting, but may be painted if desired. The surface is not damaged by sulphur dioxide or ordinary acid fumes.

Cemesto is readily workable with ordinary carpenter tools. It may be sawed, drilled, and nailed. It may be applied with nails, screws or bolts and clips. Nailing will not fracture the surface when reasonable care in driving is used.

SIZES, THICKNESSES AND WEIGHTS

Standard Sizes—4' wide x 4', 6', 8', 10', and 12' long.

Overall Thickness	11/16"	1 1/8"	1 5/16"	2"
Approximate Wt. per Sq. Ft. (lbs.)	3.0	4.0	4.8	5.3
Approximate Wt. per Sq. Ft. Crated (lbs).	3.5	4.5	5.4	6.0

Special rectangular sizes or other special shapes are furnished, but a charge is made for waste as well as for cutting costs.

Long edges on 1 5/16" and 2" thicknesses may be shiplapped or grooved for spline. Each panel is labeled "Place All Labeled Surfaces On Same Side of Construction." Where Cemesto is used for exterior walls and roof decks or in rooms of more than normal humidity, specify factory sealing of edges with inorganic waterproofing compound.

*Reg. U.S. Pat. Off.

PHYSICAL PROPERTIES OF CEMESTO

INSULATING VALUE—The high insulating value of the Celotex cane fibre core is retained in Cemesto. The conductivity of the core complies with Federal Specification LLL-F321B, Class A.

The following is a condensed summary of over-all heat transmission coefficients for Cemesto Walls.

	Stud Wall faced Both Sides	Single Thickness Walls		
Overall Thickness	11/16"	1 1/8"	1 5/16"	2"
Core Thickness	5/16"	7/8"	1 5/16"	1 3/4"
Conductance of Core	.48	0.38	0.25	0.19
Cemesto Wall Coefficients Air to Air ("U" Value)				
Inside Walls or Partitions	.15	0.25	0.19	0.15
Outside Walls	.17	0.28	0.20	0.16
Cemesto Surface To Surface Coefficients (Conductance)	.19	0.36	0.24	0.18

STRENGTH AND STIFFNESS—Uniform loading tests indicate that 1 1/8" or 1 5/16" Cemesto in walls will transmit usual design wind loads of 20 to 30 lbs. per sq. ft. to supports on 4' centers without appreciable deformation. Roof loading tests are shown on next page. Racking load test indicates that Cemesto wall is about three times as rigid as standard wall construction of lath, plaster, sheathing and siding at an equivalent load per foot of length.

WATER RESISTANCE—Cemesto Board is manufactured with a waterproofing and bonding asphalt between the asbestos cement board and the Celotex fibre board core. Rain penetration tests, equivalent to a rain driven by a sixty mile per hour wind, indicate that moisture does not penetrate the asphalt laminant. For exterior walls and roof decks all edges should be ordered sealed at the factory.

EXPANSION AND CONTRACTION—The contraction of Celotex Cemesto Board due to temperature and humidity changes is a minimum and maximum shrinkage of approximately 1/64" per ft. The expansion of Cemesto Board is negligible.

FIRE RESISTANCE—Asbestos-cement itself is fireproof. In combination with Celotex cane fibre board, Celotex Cemesto Board is fire retardant.

BOND STRENGTH—The bond between the asbestos-cement and the Celotex cane fibre core is in excess of the internal cohesive strength of the core and it will not delaminate under severe climatic conditions when the application is in accordance with Celotex Cemesto specifications.

PERMANENCE—The Celotex cane fibre core is manufactured under the Ferox* Process (patented) and therefore effectively resists damage by fungus growth, dry rot, and termites. The hard surfaced coating of asbestos-cement will withstand exposure to severe climatic changes without the asbestos-cement facing flaking, chipping, spalling or becoming loose from the Celotex core. The surface will not discolor or streak. It can be washed to maintain a clean wall finish.

NAIL AND SCREW HOLDING POWER—Tests indicate that the total load per nail for nailing cemesto to wood is about equal in lateral resistance and holding power to nailing an equivalent thickness of wood to wood. The puncture resistance of Cemesto is in excess of the holding power of common nails in wood. The holding power of screws for attaching steel and wood to Cemesto is satisfactory for transmitting applied loads to framework.

SOUND TRANSMISSION—A test of 1 1/8" Cemesto used on both sides of a wood stud wall shows an average sound transmission reduction of 39.8 decibels. This compares favorably with lath and plaster applied to single studs which shows a transmission loss of 37.0 decibels.

Cemesto is a registered trade mark identifying structural insulation composed of cane fibre board with cement-asbestos surfaces. Manufactured and marketed by the Celotex Corporation.

APPLICATION TO WOOD OR STEEL FRAMING

Cemesto* Roof Deck Panels provide structural deck, thermal insulation and ceiling finish with a saving in weight and framing compared to conventional roof decks. Cemesto panels can be furnished cut to size as required for the deck. Use 1 9/16" or 2" Cemesto, either 4' wide square edge or 2' wide panels with long edges grooved for wood splines for roof decks on flat, sloping or bow-string curved roofs. Cemesto is applied to wood framing, steel or other metal framing with wood nailers, or directly to metal framing on spans not over 4'-0" o.c. Lay planking over Cemesto deck to protect from heavy loads or wheeling during roofing application. Tests on roof clips indicate an ample safety factor based on upward wind load of 30 lbs. per sq. ft.

For complete architectural details for supporting and attaching Cemesto for roof decks ask for Detail Sheet 4500-4.

Nailing Cemesto to wood framing

DESIGN DATA AND LOADING TABLE

Uniform Loading Test—1 9/16" Cemesto—4'-0" Span (By R. W. Hunt Co.)

	Deflection at 50 lbs. per sq. ft.	Breaking Load Lbs. per sq. ft.
4' x 8' Panels. Supported on 4 edges	.085"	200
2' x 8' Splined Panels. Across Supports	.070"	230

Recovery Tests—1 9/16" Cemesto 4' x 8' Panels—Supported on 4 Edges

Deflection under Uniform Load of 75 lbs. per sq. ft.				48 hrs. later	
Immediately After Application of Load	On Removal of Load	24 hrs. after Application of Load	24 hrs. after Removal of Load	Deflection at 50 lbs. per sq. ft.	Breaking Load
.3407"	.0748"	.4022"	.0233"	.215"	250 lbs.

On 4'-0" span above uniformly distributed load tests indicate ample safety factor for 1 9/16" and 2" Cemesto Roof Decks, with deflection at combined live and dead loads under the limiting value $\frac{L}{240}$ =.20".

INSULATING VALUE—The over-all heat transfer coefficient for Cemesto Roof Decks, under side exposed and including built-up roofing, is shown below. Condensation will not occur on the under surface of Cemesto provided the relative humidity does not exceed the value shown in the table below which is based on 80° F. inside temperature. Where the relative humidity is constantly maintained in excess of 50%, paint the exposed surface of Cemesto (consult paint manufacturer). Effectively seal all joints.

Thickness	Weight per sq. ft.	"U" Value with Roofing	Temperature Difference		
			50°	80°	110°
1-9/16"	4.8 lb.	0.186 B.t.u.	83% R.H.	74% R.H.	66% R.H.
2"	5.3 lb.	0.149 B.t.u.	87% R.H.	78% R.H.	72% R.H.

SCOPE OF WORK—All roof decks as specified shall be Cemesto with all edges factory sealed as manufactured by The Celotex Corporation, Chicago, Illinois. Cemesto shall be (1 9/16") (2") thick by not over 8' 0" long (specify size) (specify grooving, if required).

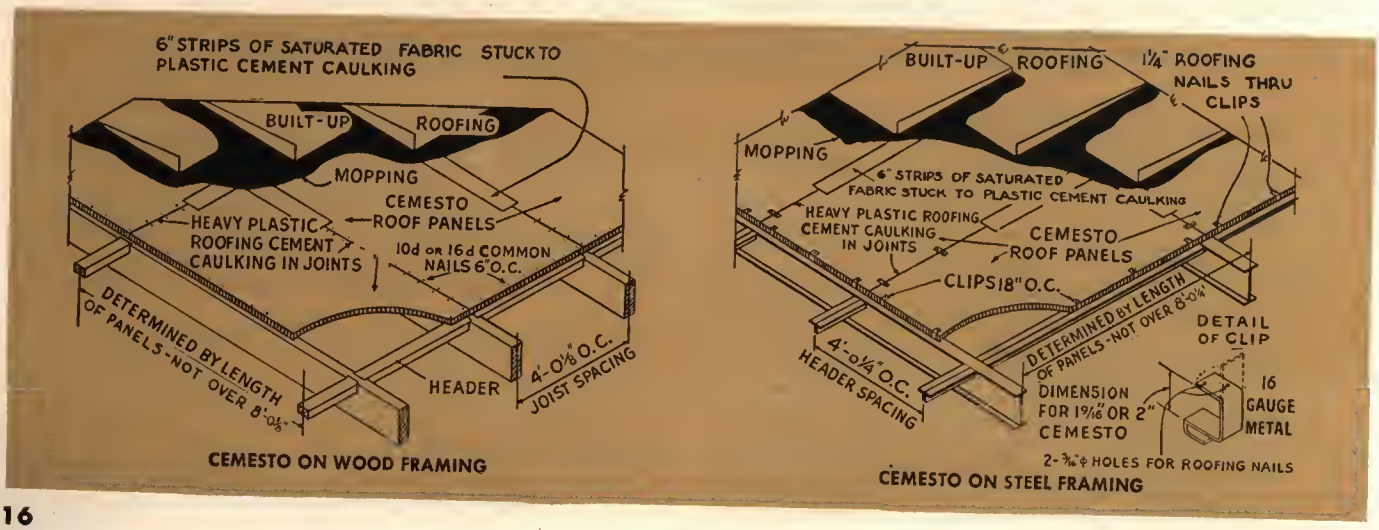
APPLICATION TO WOOD FRAMING OR WOOD NAILERS ON STEEL—Wood framing or wood nailers on steel framing of sufficient strength to support the loads shall be spaced not over 4'-0 1/8" on centers. (Apply 4'-0" wide Cemesto parallel to framing with 2" x 4" wood headers under short edges.) (Apply 2' wide (specify length) Cemesto, with long edges grooved, at right angles to framing with *labelled* surface down and use wood splines for joining long edges.) Short edges to rest on framing, with 1/8" clearance between panels. Nail Cemesto to framing, spacing nails 6" o.c. Use large-headed 10d nails for 1 9/16" Cemesto and 16d nails for 2" Cemesto. Caulk square edge joints and cover with 6" wide strips of saturated fabric or felt cemented to Cemesto.

APPLICATION TO STEEL FRAMING WITH CLIPS—Steel beams or bar joists of sufficient strength to support the load shall be spaced 4'-0 1/4" o.c. Apply 4'-0" wide square edge Cemesto parallel to framing with steel angle or tee headers under short joints, with 1/4" clearance between panels. Clip Cemesto to flanges of steel framing with 16 gauge metal clips spaced not over 18" o.c. Bend down clips over Cemesto and nail to Cemesto with 1 1/4" 11 gauge roofing nails. Caulk joints between Cemesto panels with plastic roofing cement and cover with 6" strips of saturated fabric or felt stuck to caulking.

APPLICATION OF ROOFING—Immediately after application of deck, apply built-up roofing, using suitable specification for application over concrete decks. If asphalt type, prime Cemesto with asphalt primer. Use saturated fabric for asphalt roofing and 30-lb. felt for pitch roofing.

EXPANSION JOINTS—In extremely long steel frame structures, one or two expansion joints are desirable for Cemesto roof decks. For details ask for Form No. 7281.

Cemesto clipped to steel framing



*Reg. U.S. Pat. Off.

APPLICATION TO STEEL FRAME STRUCTURES

DESCRIPTION—Single thickness curtain walls, using large panels of Cemesto with all edges factory sealed, applied to steel or other metal framing with bolts and clips. For physical characteristics of Cemesto and sizes, see page 15.

S-1 SINGLE WALL—HORIZONTAL APPLICATION

FOR GIRT SPACING UP TO 4'-0" use 11/16", 1 1/8", 1 9/16" or 2" Cemesto. Back up horizontal joints between Cemesto panels with girts spaced not over 4'-0" o.c. and flash joints with 16-gauge "Z" and caulking tape. Cover vertical joints with strips of 55 lb. smooth roll roofing on the outside and 5/16" cement asbestos battens on both the outside and inside.

FOR GIRT SPACING FROM 4'-0" TO 16'-0" use 1 9/16" or 2" Cemesto not over 8'-0" long. Provide vertical steel studs, spaced not over 8'-0" o.c. to back up vertical joints between Cemesto panels. Flash horizontal joints not backed up with girts or other steel framing with 12-gauge structural "Z" and caulking tape. 12-gauge "Z" must bear against vertical studs to transmit wind load to structural frame. Cover vertical joints backed up with vertical studs with strips of 55 lb. smooth roll roofing and cement asbestos battens on the outside only. See details below.

S-1 SINGLE WALL—VERTICAL APPLICATION

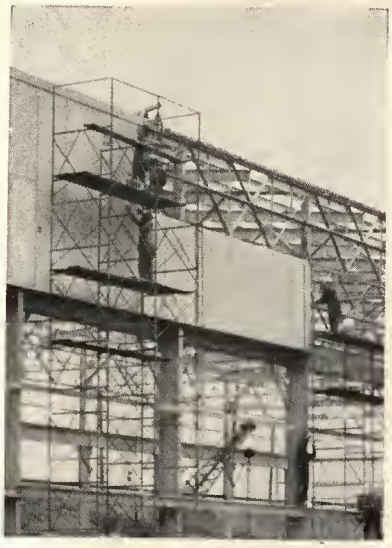
FOR GIRT SPACING UP TO 4'-0" use 11/16", 1 1/8", 1 9/16" or 2" Cemesto. Length of panels two or more girt spaces but not more than 12'-0". For girt spacing from 4'-0" to 6'-0" use 1 9/16" to 2" Cemesto. Locate girts so as to back up horizontal joints between Cemesto panels. Flash horizontal joints with 16-gauge "Z" and caulking tape. Cover vertical joints with strips of 55 lb. smooth roll roofing on the outside and 5/16" cement asbestos battens on both the outside and inside.

FOR GIRT SPACING MORE THAN 6'-0" AND UP TO 12'-0" space vertical steel studs not over 4'-0" o.c. to back up vertical joints between Cemesto panels which may be 1 1/8", 1 9/16" or 2" thick. Cover outside of vertical joints with strips of 55 lb. smooth roll roofing and 5/16" cement asbestos or metal battens. Flash horizontal joints with 16-gauge "Z" and caulking tape. See details below.

ATTACHMENT OF CEMESTO PANELS TO STEEL FRAMING—Fasten Cemesto to steel framing with 16-gauge pressure clips and 1/4" diameter bolts complete with steel and caulking washers. Use 1 1/2" diameter washers when bearing directly on Cemesto surfaces. Space bolts 12" o.c. Fasten battens in place with bolts through Cemesto. When using metal channel type battens, the bolt or welded stud may pass between the butting edges of the Cemesto.

DETAILS—Complete architectural details, including design of metal accessories and source of supply will be furnished on request. Ask for Detail Sheets 4500-1, 2, 3.

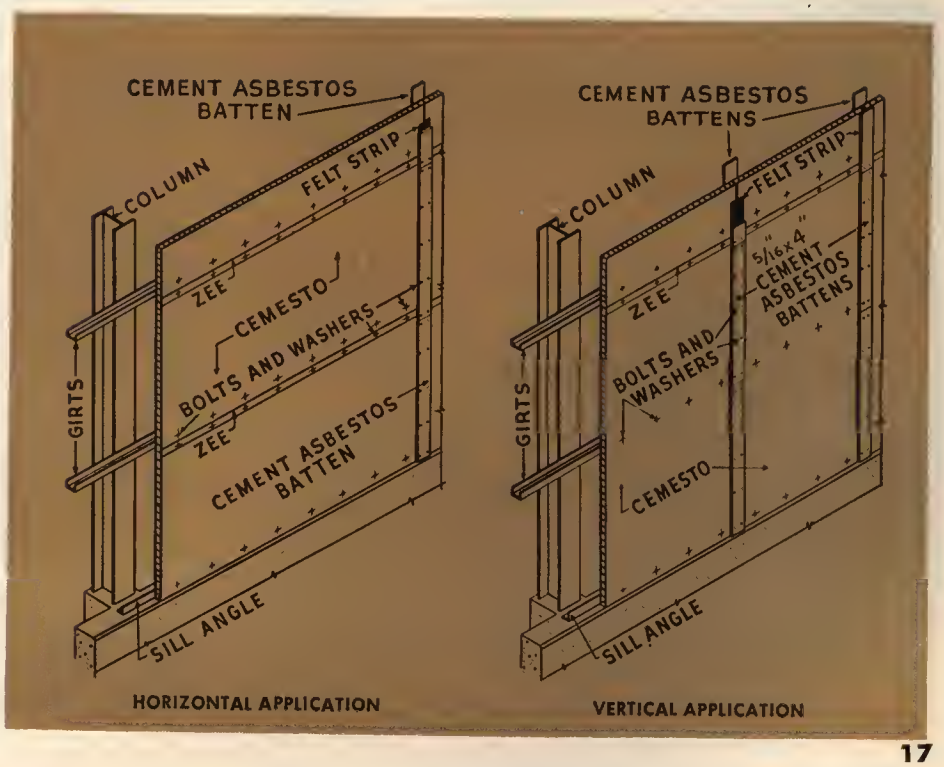
EXPANSION JOINTS—In extremely long steel frame structures, one or two expansion joints are desirable for Cemesto curtain walls. For details ask for Form No. 7281.



Simple scaffolding and crane speed up application

Application to steel with clips

Metal battens applied to butting joints without drilling Cemesto. Bolts pass between Cemesto panels.



*Reg. U.S. Pat. Off.

APPLICATION TO WOOD FRAMING

DESCRIPTION—Single thickness curtain walls, using large panels of 1⅛", 1⁹⁄₁₆" or 2" Cemesto with all edges factory cut and sealed, applied to wood framing with nails or screws.

W-1 SINGLE WALL—HORIZONTAL APPLICATION

MILL CONSTRUCTION—Frame horizontal wood girts spaced not over 4'-0" o.c. between wood columns. Frame nailing members between girts at vertical joints between Cemesto panels to allow these joints to occur independently of columns. See detail at right. (Wood industrial sash may be installed at any desired location in the walls.)

W-2 SINGLE WALL—VERTICAL APPLICATION

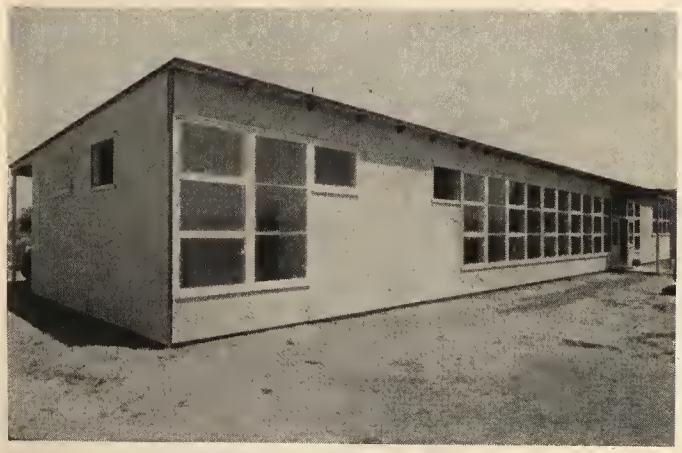
ORDINARY WOOD FRAMING—Space studs at least 4" (nominal) thick, 4'-0" o.c. to utilize standard widths of Cemesto. Set in horizontal nailing headers between studs and space so as to center on horizontal joints between Cemesto panels. See detail at right.

APPLICATION—Attach Cemesto panels to wall framing with (nails) or (screws). Bearing along all edges of Cemesto must not be less than 1¼". Use large-head 8d nails for 1⅛", 12d for 1⁹⁄₁₆" and 16d for 2" Cemesto. (For demountable construction use flat head wood screws long enough to penetrate wood framing 1½". Space screws 12" o.c.) Space nails 8" o.c. along edges of Cemesto and ¾" from edges.

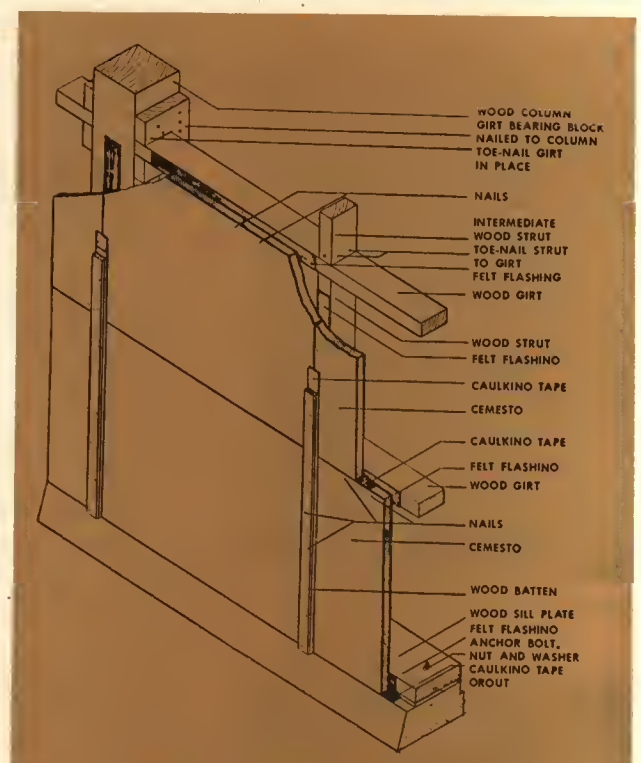
JOINT TREATMENT—Cover vertical joints with 55 lb. smooth roll roofing or caulking tape and wood, asbestos, or metal battens. Seal horizontal joints with smooth roll roofing or caulking tape and point-up with caulking compound.

DETAILS—For complete architectural details ask for **Detail Sheets 4500-6 and 4500-7.**

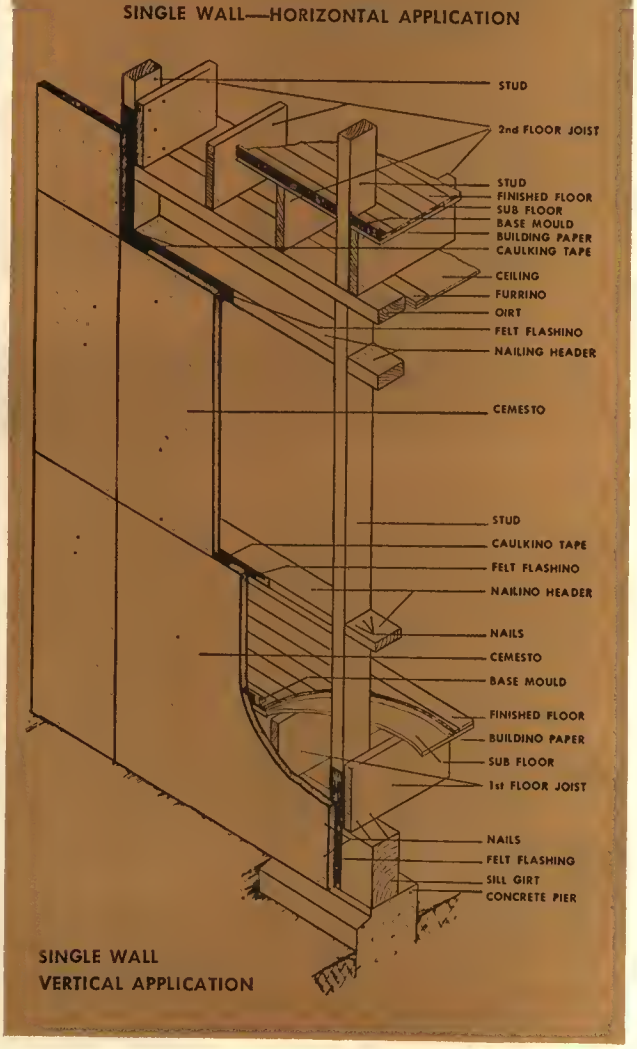
Application of Cemesto to wood framing



Vertically applied Cemesto panels



SINGLE WALL—HORIZONTAL APPLICATION



SINGLE WALL
VERTICAL APPLICATION

*Reg. U.S. Pat. Off.

DESCRIPTION—Single thickness partitions of three types, limited to a height of 12'-0". The constructions described below permit the partitions to be demounted and reassembled with ease.

SPLINED NON-BEARING PARTITION—A studless, non-load bearing partition wall may be built with Cemesto grooved on long edges to receive a 7/16" x 1¾" wood spline. The spline method of construction eliminates the need of framing members or battens at the joints. The spline is inserted in a slot having a depth of 1" in each Cemesto panel. Each panel carries a label—"Place All Labeled Surfaces On Same Side of Construction." This permits a reasonably flush wall on one side only, with the difference in thickness due to tolerance in manufacture on the opposite exposed side. The partition should be anchored top and bottom with rabbeted plates or base and cove mouldings. For permanent partitions the spline should be glued in place using either chip glue or Celotex Light Bodied Adhesive. Suitable for 1 9/16" or 2" Cemesto in 4' widths or less. See detail below.

LOAD BEARING PARTITION—Cemesto panels are framed between 2" x 4" or 4" x 4" studs set approximately 4'-2" o.c. and are held in place with wood stops nailed to the studs around all edges on both sides of the Cemesto. The studs are tied together by a suitable top plate of proper size to carry required loading. Suitable for 1⅛", 1 9/16" or 2" Cemesto in 4' widths or less. See detail below.

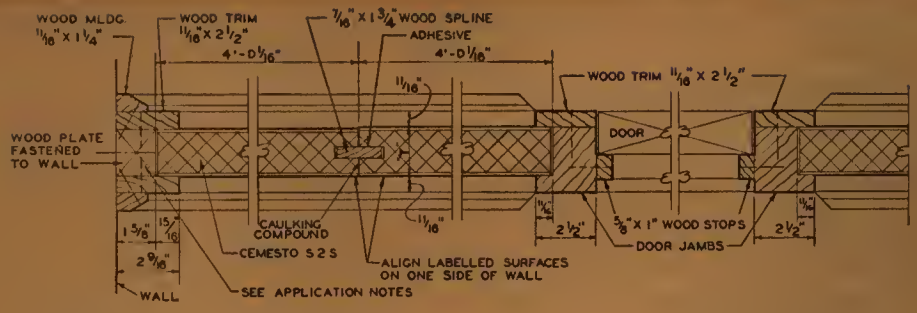
BATTENED NON-BEARING PARTITION—Similar to splined non-bearing partition except the spline is omitted and 1" x 3" or heavier wood battens are placed on opposite sides of all vertical joints and fastened together by nailing through the batten on one side and through the Cemesto into the batten on the other side. The top and bottom plates are rabbeted to receive the Cemesto and the battens stop at the plates. Suitable for 1⅛", 1 9/16" or 2" Cemesto in 4' widths or less. See detail below.

DETAILS—Complete architectural details furnished on request. Ask for Detail Sheets **4500-8, 4500-9.**

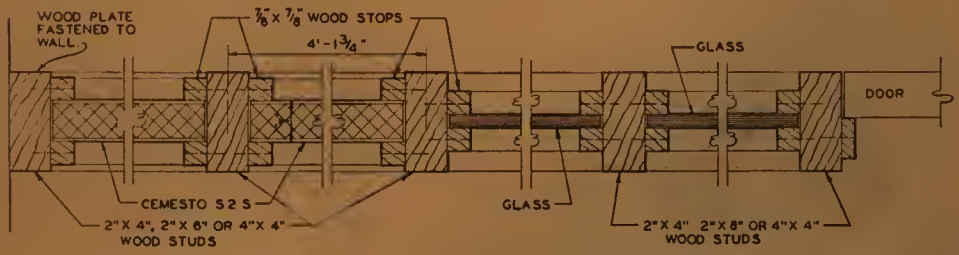
Splined non-bearing partition

Cemesto ceiling lining and partitions

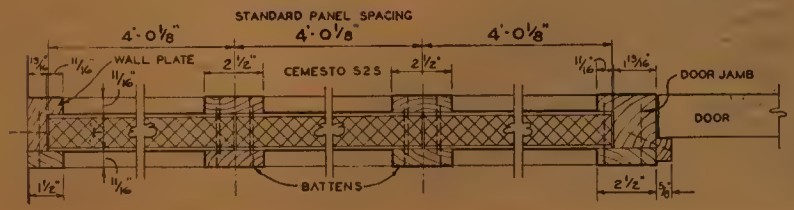
SPLINED NON-BEARING PARTITION



LOAD BEARING PARTITION



BATTENED NON-BEARING PARTITION



CEMESTO* RESIDENTIAL CONSTRUCTION

POST AND PANEL SYSTEM

The Cemesto Post and Panel construction system is a modern expression of the conventional, sturdy, mill-type framing system. It provides for maximum pre-cutting, pre-processing, and sub-assemblies of components for speedy, low-cost erection. By using Celotex Post and Panel standard details (see typical drawings at right), a designer can lay out any floor plan for houses, either conventional or modern in design, for this system of construction.

SIMPLICITY

The wood framing of the Cemesto Post and Panel house is conventional with the exception of the columns and girders used to frame the Cemesto wall and partition panels. This framing is composed of the usual lumber and millwork which is readily available at any lumber yard, and easily produced at a shop or at the building site.

After conventional foundation floor framing or slab is prepared, the T-posts and girders are assembled and erected. The posts are spaced to frame the Cemesto panels. Roof trusses or conventional rafters and ceiling joists are installed and braced to complete the framework. Walls are completed by simply nailing or screwing Cemesto panels into the framework. After weather-sealing exterior joints, battens are applied over the joints on the inside.

The simplicity of this system is shown by the few shapes or sections of plain local millwork which are used in a wide variety of combinations to form the framing for any desired arrangement of exterior panels or partitions.

PERFORMANCE

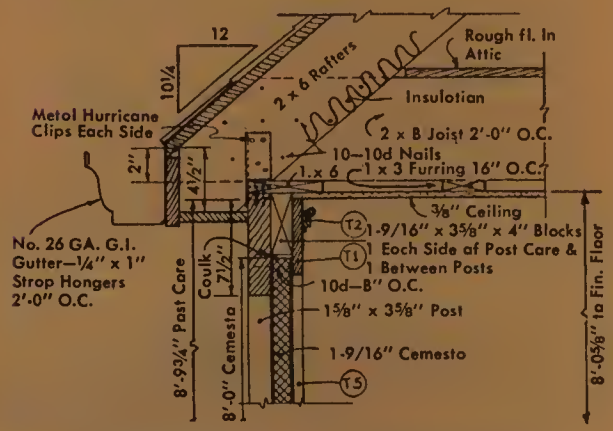
In performance, the Cemesto panel fulfills or exceeds every basic requirement for exterior wall, partition or roof deck construction in homes. Its structural strength and durability are firmly established by its wide and increasing use in industrial construction. The insulating properties of Cemesto make it superior in resistance to heat transmission to ordinary walls constructed of siding, brick, stucco or wood, wood sheathing, lath and plaster. A fire-resistant surface is furnished by the cement-asbestos board facings. This surface is also weather-resistant and maintenance-free for both exterior and interior. Pleasing neutral gray surfaces make decoration unnecessary. However, if desired, surfaces may be painted, papered or otherwise decorated to suit individual tastes.

ECONOMY

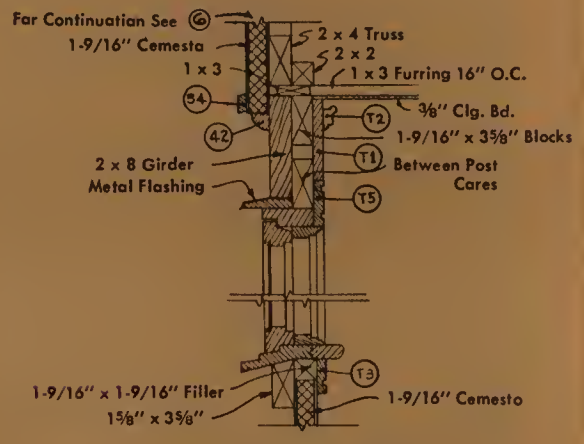
Because the Cemesto Post and Panel construction provides strength, insulation, interior and exterior finish in a greatly reduced number of operations, homes can now be constructed in much less time than is required for the conventional types of construction. Use of Cemesto Post and Panel system in home construction has enabled some contractors to figure carpenter labor in the field at approximately one-third of the time usually required for ordinary construction.

Cottage type residence of Cemesto Post and Panel construction. Complete specifications and erection instructions for Standard Cemesto Post and Panel houses are available from the Celotex Corporation.

TYPICAL DRAWINGS from Standard Details booklet No. 7278 showing 90 construction details plus millwork details. Available on request.



EAVE SECTION FOR 1½ STORY HOUSE



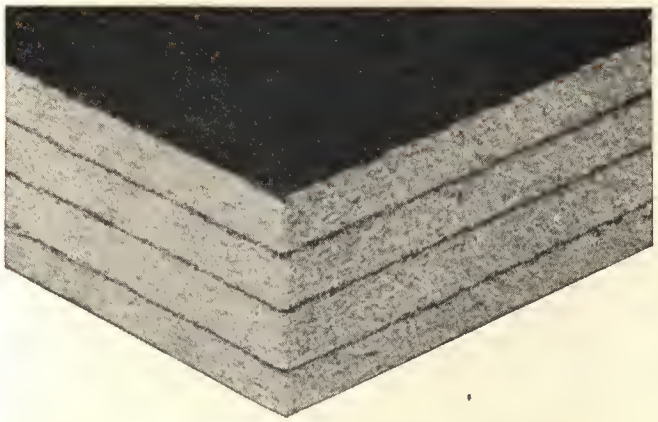
WINDOW SECTION

*Reg. U.S. Pat. Off.

CELO-BLOCK Cold Storage Insulation

TRADE MARK

CELOTEX
REG U.S PAT. OFF



DESCRIPTION—Celo-Block Cold Storage Insulation is made of ½" low density cane fibre boards laminated with asphalt mastic and surfaced front and back with asphalt. Thus a 2" thickness of Celo-Block has five moisture-resistant membranes. Effectively protected against termites, dry rot and fungus attack by the exclusive Ferox* process. Celo-Block is lightweight, strong, rigid, and easy to apply.

SIZES—12" x 36" and 18" x 36", 2" and 3" thicknesses.

WHERE ADAPTED

1. Breweries (fermenting, racking, storage rooms).
2. Beer storages (distributing depots, taverns, hotels).
3. Meat, fruit and vegetable walk-in refrigerators (restaurants, hotels, grocery stores, markets).
4. Dairy products (milk, cream, cheese, ice cream hardening rooms, etc.). Milk cooling tanks.
5. Meat packing plants.
6. Locker and low temperature storages.
7. Ice storages and manufacturing plants.
8. Fur storages.
9. Candy factories.

INSULATING EFFICIENCY—The conductivity of Celo-Block is 0.30 B.t.u. per hour, per sq. ft., per degree F., per inch thickness.

THICKNESSES OF INSULATION USUALLY RECOMMENDED

+45° F. and above..... 2"	+5° F. to +28° F..... 5"
+35° F. to +45° F..... 3"	−5° F. to + 5° F..... 6"
+28° F. to +35° F..... 4"	−5° F. to −20° F..... 8"

APPLICATION INFORMATION

(For detailed specifications write the Celotex Corporation.)

If hot asphalt is used as an adhesive (purchased from local sources of supply), it should be the best grade of blown insulation asphalt obtainable and should be odorless and have a melting point of from 160 to 180 degrees Fahrenheit. Selection within this range shall be made to suit atmospheric temperatures. Most of the large oil refineries carry this grade of asphalt at a stock point adjacent to the job. The Celotex Corporation will furnish a list of approved brands.

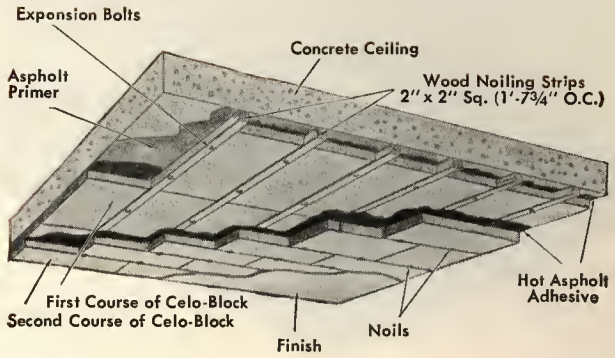
TYPES OF RECOMMENDED FINISHES

(1) Emulsified Asphalt with dry mastic Compound Filler.
(2) Fibrated emulsified asphalt.
(3) Portland Cement plaster.

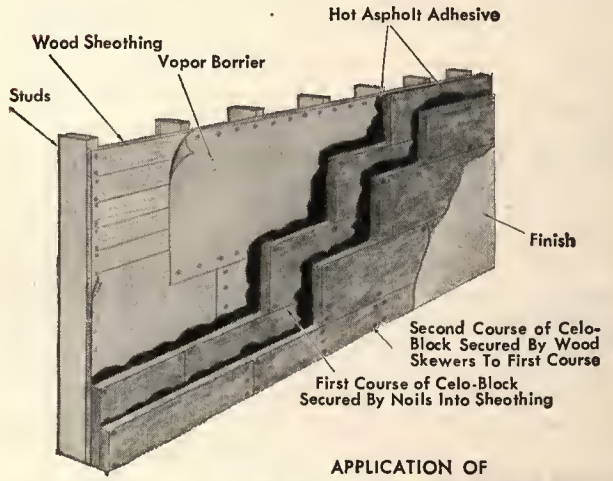
The finishes listed above may be painted with approved white enamel paint.

The trademark CELO-BLOCK identifies the laminated block-type cold storage insulation composed of ½-in. layers of cane fibre board bonded with waterproof mastic and surfaced front and back with vaporproofing asphalt, manufactured by The Celotex Corporation.

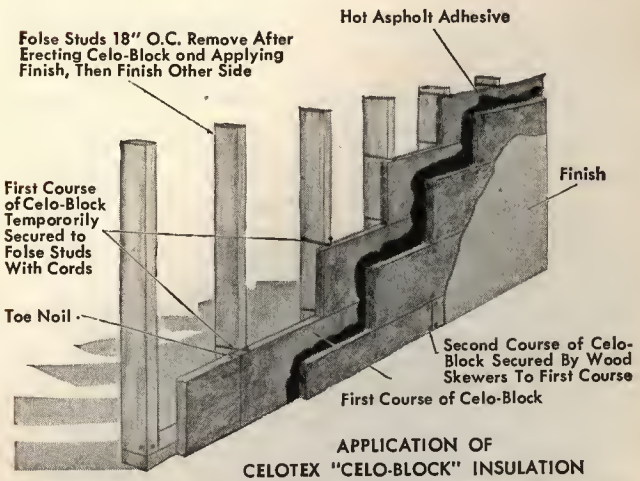
*Reg. U.S. Pat. Off.



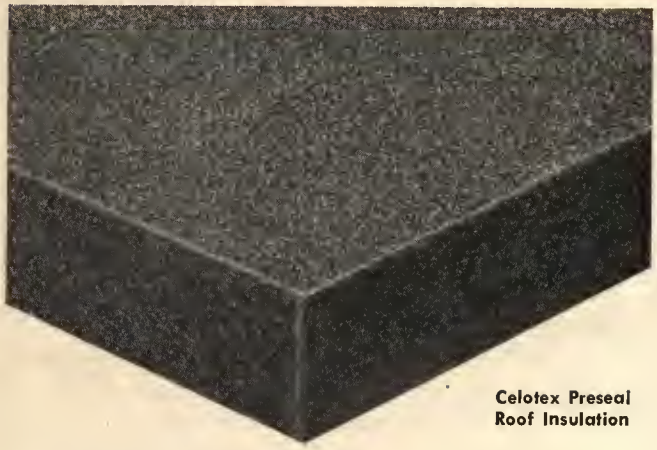
APPLICATION OF CELOTEX CELO-BLOCK INSULATION TO EXISTING CONCRETE CEILINGS



APPLICATION OF CELOTEX "CELO-BLOCK" INSULATION TO WOOD WALLS



APPLICATION OF CELOTEX "CELO-BLOCK" INSULATION TO SELF-SUSTAINING NON-BEARING WALLS



Celotex Preseal Roof Insulation

DESCRIPTION

CELOTEX BRAND ROOF INSULATION is a cane fibre product especially designed for the insulation of roofs under built-up roofing, slate or tile roofs. It provides a highly desirable surface for mopping with asphalt or pitch.

TYPES

CELOTEX PRESEAL ROOF INSULATION is Celotex cane fibre roof insulation board with a thorough coating of special asphalt on both faces and all edges. Moisture resistance is the outstanding feature of Celotex Preseal Roof Insulation. The asphalt coating greatly reduces the danger of moisture pickup while the board is in storage or when subjected to showers on the job; also increases protection against moisture penetration in case of roof leaks. The asphalt coating affords a positive bond for the hot-mopped roofing felts of either the asphalt or coal tar pitch type. Thicknesses: ½", 1", 1½", and 2". Standard size is 23" x 47". Square edges.

CELOTEX REGULAR ROOF INSULATION is Ferox treated cane fibre board manufactured in thicknesses of ½", 1", 1½" and 2" with square edges. Square edge roof insulation in thicknesses over ½" consists of layers of ½" Celotex Roof Insulation stapled together. Standard size is 23" x 47".

CELOTEX VAPOR-SEAL ROOF INSULATION is an improved type of water resistant cane fibre board roof insulation with low density core, having a higher thermal insulation value than above two products. It is integrally treated by the Ferox Process to resist dry rot and termites, and is coated on all edges and surfaces with high grade asphalt. It is provided with offsets on four edges and when applied, a network of channels next to the roof deck is formed which provide a means of equalizing the air pressure therein, (See detail in circle.) Size, 24" x 48". Thicknesses of 1", 1½" and 2". Square-cut offsets ½" wide by ½" deep are provided along all edges of the underside of each thickness of board.

Detail shows half inch offsets on all edges of the underside of Celotex Vapor-seal Roof Insulation.

SPECIFICATIONS—Flat Roof Insulation

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply. Words in bracketed bold face type are selective.*

NOTE: *Built-up roofing shall be applied in accordance with manufacturer's specifications.*

(1) INSULATING MATERIAL

Insulation shall be (specify) thick Ferox Treated **[Regular Celotex Roof Insulation] [Celotex Preseal Roof Insulation] [Celotex Vapor-Seal Roof Insulation]** laid in **[one] [two]** layer[s].

NOTE: *On Celotex Regular Roof Insulation or Celotex Preseal Roof Insulation specify square edge.*

NOTE: *Apply Celotex Vapor-Seal Roof Insulation with channels or offsets on the underside next to the deck. Do not shiplap. Celotex Vapor-Seal Roof Insulation shall be applied in one layer only.*

The following roof areas shall be insulated:

NOTE: *List and locate. If more than one thickness of insulation is required, list and locate each separately.*

(2) GENERAL

All Celotex Roof Insulation shall be kept dry before, during, and after application. Only as much Celotex board shall be laid over roof area as can be covered by finished roofing in any one day. Lay Celotex Roof Insulation in **[one] [two]** layer[s] over entire roof area. Adjoining edges of boards shall be brought to a moderate contact but shall not be forced into place. Where the roof meets vertical surfaces, such as parapets, penthouses, etc., boards shall be cut in a neat, workmanlike manner to insure proper joining without forcing. Boards shall be laid in parallel courses with end joints in each course breaking with those of adjoining courses. Where insulation is laid in two (2) layers, the boards of the second layer shall be laid parallel with those of the first layer, and the joints of the second layer shall break with those of the first.

NOTE: *Specify pitch with tar saturated felt and asphalt with asphalt felt.*

(3) ROOF DECK

(3a) WOOD—The surface of the roof deck shall be broomed clean, free from dirt, loose material, and thoroughly dry. All loose or springy boards shall be properly nailed before insulation is laid.

(3b) CONCRETE, ETC.—The surface of the roof deck shall be reasonably smooth without depressions, broomed clean, free from dirt and loose material. The concrete shall be dry before any insulation is applied.

(3b1) Unit Tile Construction—The joints of all tiles shall be properly pointed up.

NOTE: *Include (3b1) where deck is of cement, gypsum, book or similar construction.*

(3c) STEEL—The steel deck shall have a shop coat of paint or primer. It shall be securely anchored to the roof purlins and all joints shall be made rigid.

Laying Celotex Preseal Roof Insulation

APPLICATION A—Over Wood Roof Decks for Normal Conditions

NOTE: *This specification applies to insulation against heat loss and to protect against top story excessive summer heat.*

Use Clauses (1), (2) and (3a).

(4) BUILDING PAPER

NOTE: *Use this clause when coal tar pitch is specified.*

The entire roof area shall be covered with one ply rosin sized building paper, lapping edges 2". Fasten with barbed roofing nails until insulation is laid.

(5) APPLICATION

(5a) NAILS—Nails shall be of sufficient length to pass through the insulation and penetrate the wood roof deck at least ¾".

(5b) NAILING—Space nails 12" apart. Each board shall be secured in place by nailing along each edge and staggered along the longitudinal center line.

(5c) Nailing of two (2) layer insulation shall be through the second or top layer only.

NOTE: *For inclines exceeding 3" per ft. use steep roofing pitch or steep roofing asphalt and supplementary nailing.*

APPLICATION B—Over Wood Roof Decks for High Humidities

NOTE: *This specification applies where high humidities are maintained and prevention of condensation is necessary.*

Use Clauses (1), (2) and (3a).

(6) VAPORPROOFING COURSE

NOTE: *Include over entire roof area in conjunction with roof insulation on wood roof decks over rooms carrying high manufactured or incidental humidities. Select either (6a) or (6b) specified below—select also, dependent on the type of finished roofing specified—pitch or asphalt.*

(6a) When pitch is specified, cover the wood roof deck with a layer of rosin sized building paper lapped 2" at joints and nailed sufficiently to hold fn position. Over the wood roof deck or sheathing paper lay two (2) plies (lapped half) of 15-lb. saturated roofing felt [tarred] or [asphalt]. Nail the back edge of each sheet with tin-capped, galvanized, barbed roofing nails spaced 12" on center. Laps shall be mopped with hot [coal tar pitch] [asphalt]. Do not mop over this membrane until just prior to the laying of insulation.

(6b) Over the wood roof deck or sheathing paper lay two (2) plies (lapped half) of 45 lbs. per square prepared asphalt roofing having one side coated. Lay coated side down. Nail the back edge of each sheet with tin-capped, galvanized, barbed roofing nails spaced 12" on center. All laps shall be mopped with hot asphalt. Do not mop over this membrane until just prior to the laying of insulation.

(6c) Wrap the vaporproofing course around edge and mop back 6" on top of insulation at walls, skylight curbs and under monitor skylight sash.

(7) APPLICATION

Mop the exposed vaporproofing felt liberally with hot [coal tar pitch] [asphalt]. Only sufficient area to provide complete embedment of each Celotex board shall be mopped at a time. Embed each board firmly in the bituminous mopping.

NOTE: *For inclines exceeding 3" per ft., use steep roofing pitch or steep roofing asphalt and supplementary nailing.*

(7a) TWO LAYER INSULATION—Mop exposed surface of first layer liberally with hot [coal tar pitch] [asphalt]. Only sufficient area to provide complete embedment of each board shall be mopped at a time. Embed each board of second layer firmly fn the bituminous mopping.

APPLICATION C—Over Concrete, Gypsum and Unit Tile

10a
4a

Use Clauses (1), (2), and (3b) or (3b1).

(8) APPLICATION

(8a) PRIMING THE DECK—Prime the deck with asphalt primer.

NOTE: *Include priming if asphalt mopping and asphalt felt are used for the vaporproofing course. If pitch and tarred felt are used, no primer is necessary. Use a liberal coating of waterproof primer over gypsum decks.*

NOTE: *A seal course is recommended for protection against elements and against moisture of fresh monolithic concrete.*

NOTE: *When high humidities prevail use vaporproofing course.*

(8b) VAPORPROOFING COURSE—Mop entire roof area with a coat of [coal tar pitch] [hot asphalt]. Over the mopping, while hot, lay two (2) plies (lapped half) of 15-lb. saturated roofing felt [tarred] [asphalt] and thoroughly coat between laps with hot bitumen. Wrap vaporproofing course around edges of insulation and mop back 6" at walls, skylight curbs, and under monitor skylight sash. Do not mop over this membrane until just prior to laying insulation.

NOTE: *On unit tile construction keep mopping back 4" from joints.*

(8c) MOPPING THE DECK—[Mop the roof area] [vaporproofing course] with a coat of hot [coal tar pitch] [asphalt]. Only sufficient area to provide complete embedment of each Celotex board shall be mopped at a time. Embed each board firmly in the bituminous mopping.

NOTE: *If the deck is monolithic construction (concrete, poured gypsum), the mopping shall be continuous. On precast units (book tile, precast gypsum concrete), without vaporproofing course, coat the entire surface with a light and uniform mopping of asphalt; if coal tar pitch is used, spot or strip mop the individual units, keeping mopping back 4" from joints. Mop tile so as to prevent drippage.*

NOTE: *On steep decks, where incline exceeds 3" per foot, embed wood nailing strips (not to exceed 3' on center) in the surface of the deck parallel to slope of roof.*

(8d) TWO LAYER INSULATION.

NOTE: *Same as paragraph (7a) under Application B.*

APPLICATION D—Over Steel Roof Decks

Use Clauses (1), (2) and (3c).

(9) PREPARATION

Mop the entire roof area with a coat of hot asphalt and lay one ply of 15-lb. saturated felt, lapping edges 2".

NOTE: *If vaporproofing course is to be used include (8b) above. Use hot asphalt only for application to deck.*

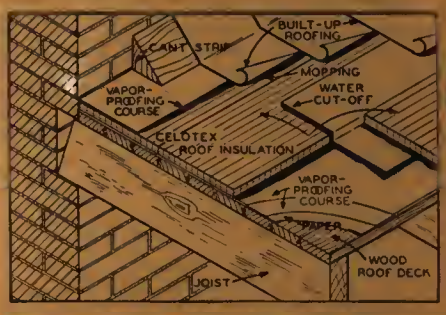
(10) APPLICATION

Mop the [deck] [vaporproofing course] with a liberal coat of hot asphalt. Only sufficient area to completely embed each Celotex board shall be mopped at a time. Embed each board firmly.

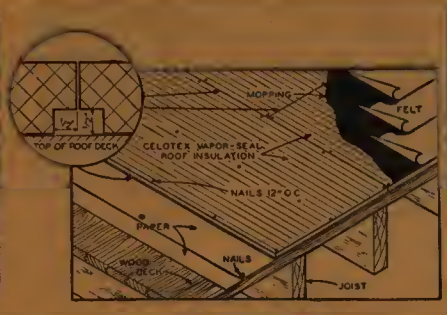
NOTE: *Pitch should not be used for bonding felts or insulation to steel decks.*

(10a) TWO LAYER INSULATION—Mop exposed surface of first layer liberally with hot asphalt. Only sufficient area to provide complete embedment of each Celotex board shall be mopped at a time. Embed each board of second layer firmly in the bituminous mopping.

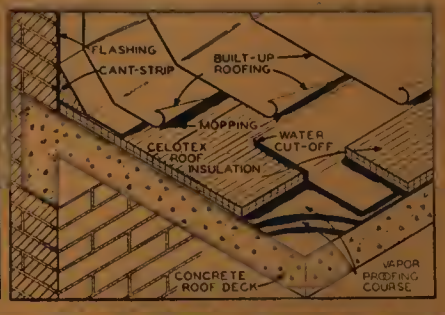
(10b) FOR STEEP STEEL DECKS—In addition to the mopping, each Celotex board shall be secured to the steel deck, along the top, with three (3) bolts, metal darts, sheet metal screws or other effective device (to be furnished by the deck manufacturer).



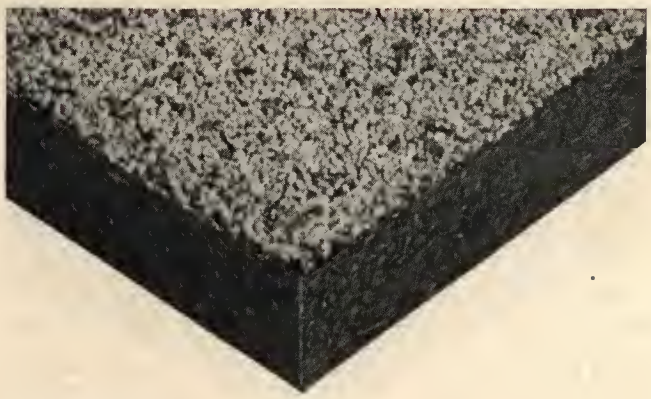
Celotex Roof Insulation with vaporproofing over wood deck



Celotex Vapor-Seal Roof Insulation over wood deck



Celotex Roof Insulation over concrete with vaporproofing course



DESCRIPTION

Celo-Siding* is a granule surface siding made with a core of genuine Celotex cane fibre structural insulation board. The core is coated on all sides and edges with an asphalt compound. An additional coating of extra high-grade asphalt is applied to the exterior-surface side, into which crushed mineral granules are firmly pressed, presenting a durable, attractive exterior finish. The bracing strength of Celo-Siding is similar to that of Celotex Sheathing and exceeds that of horizontal wood sheathing.

*CELO-SIDING is a Registered Trade Mark identifying a granule-surfaced insulating siding manufactured by The Celotex Corporation.

A MULTI-FUNCTION MATERIAL—Celo-Siding provides structurally strong sheathing, effective insulation, and weather resistant exterior finish—all in one material, all in one application.

Celo-Siding is especially suited for low-cost housing projects, warehouses, factories, farm buildings, and many other types of construction where its insulation value (2½ times that of Yellow Pine) assures greater comfort and fuel savings—yet where cost must be held to a minimum.

EASILY APPLIED—This lightweight, structurally strong siding can be applied by any carpenter. No new or special technique is required. The T. and G. material is applied horizontally across wood studs spaced 16" or 24" o.c. or vertically on wood studs spaced 24" o.c. The 4'-0" widths may be applied horizontally or vertically to framing 16" and 24". A caulking compound is used to seal all joints.

THICKNESSES, COLORS, SIZES—Celo-Siding is 7/8" and 5/8" thick. Furnished in three colors: Buff, Green and Shell Gray.

(a) 7/8" Celo-Siding (big board)—4' x 8' or 10', square edges.

(b) 7/8" Celo-Siding (center matched)—2' x 8'. Long edges T. and G. Short edges square.

(c) 5/8" Celo-Siding (big board)—Size 4' x 8' only. Square edges.

CELOTEX Rock Wool

Celotex Rock Wool Products are produced from fireproof mineral materials. They meet Federal Specification HH-I-521B for their particular types of material.

THERMAL CONDUCTIVITY—Celotex Rock Wool insulation has an average thermal conductivity of .27 B.t.u. per square foot, per hour, per one inch thickness, per degree difference in temperature.

TYPES

Rock Wool Batts—For fast, economical insulation of walls, ceilings, and floors. Easy-to-handle size speeds installation and eliminates waste. Full-thick and semi-thick. 15" x 24" and 15" x 48". Batts are faced one side with a vaporproof paper flanged on the long sides for nailing to framing. Batts should be installed with the vapor barrier on the warm side.

Hand Pouring Type Rock Wool—Specially processed into pellets properly sized for hand pouring into open attic floors and other areas. Packed in 40-lb. bags.

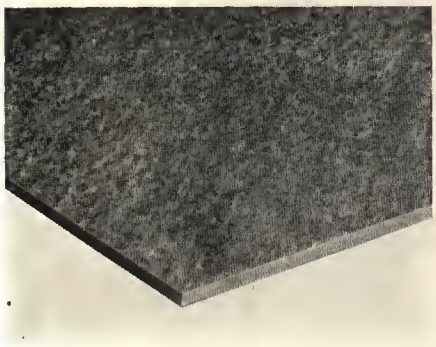
Loose Rock Wool—Loose wool is the basic material from which all other rock wool products, through additional processing or fabrication, are produced. It is also occasionally used as a hand packing material.

Granulated Rock Wool—Granulated Rock Wool is made of loosely formed pellets used for blown-in insulation, particularly in existing buildings.

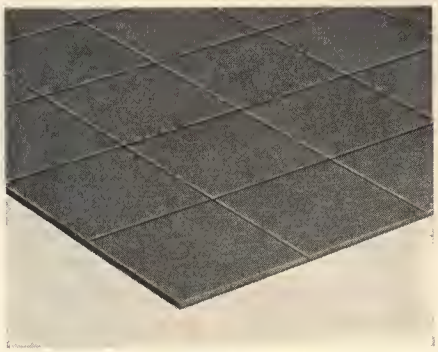
Batts are easily handled

Hand Pouring type paurs into place

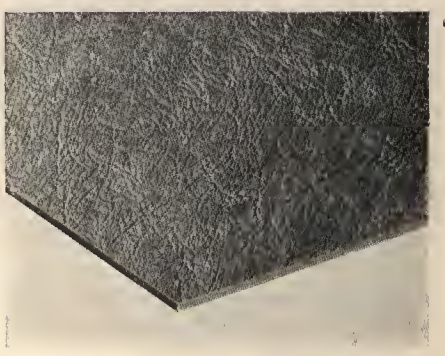
Blown-in Celotex Rock Wool



Regular Hard Board



Hard Board Tile (Tempered)



Leather-grain Hard Board (Tempered)

DESCRIPTION

Celotex Hard Board Products are rigid, hard, grainless, moisture-resistant wood-fibre boards. Low in insulation value, but tough and highly resistant to abrasion, they are designed for use as wall paneling, wainscoting, partitions, table-tops, counters, shelving, etc. They may also be cut on the job into attractive border overlays, friezes, and ornaments. Hard Board can be sawed, cut, or drilled with standard woodworking tools.

TYPES

REGULAR HARD BOARD—Natural brown finish. Face surface is smooth; back has canvas-like texture.

TEMPERED HARD BOARD—Made by treating Regular Hard Board to a tempering process by which it is impregnated with a special tempering compound in the manufacturing operation. Natural brown finish.

BLACK TEMPERED—Permanent, clear-through black finish.

HARD BOARD TILE (TEMPERED)—Has 4 in. square scored tile pattern. Natural brown finish; smooth back.

LEATHER-GRAIN HARD BOARD (TEMPERED)—A novel finish simulating Spanish-grained leather. Is attractive in its natural rich brown color, or when glazed for antique finish, or when painted in solid colors.

GENERAL APPLICATION INSTRUCTIONS

Celotex Hard Board Products may be easily and rapidly applied to wood framing, furring, and continuous wood or sound plaster.

FOR APPLICATION TO WOOD BASES—Use 1¼ in. finishing nails spaced approx. 6 in. apart to intermediate bearing. Along all joints, space nails 4 in. apart and approx. ¼ in. in from the edges.

FOR APPLICATION TO SOUND PLASTER BASES—Coat entire back of Celotex Hard Board Products with Celotex Light Body Adhesive. Immediately after spreading the adhesive the board should be placed into position, pressing and tapping the entire surface firmly in place. After application the boards should be braced or supported overnight to insure solid contact. Where possible it is desirable to use nails in addition to the adhesive application and the nails should be countersunk and touched up with plastic wood prior to finishing the board.

PAINTING AND DECORATING—Hard Board Products in natural finish require no further decoration. If desired, oil or varnish paints, lacquers, or water paints may be applied. Preliminary priming is necessary when oil or varnish paints or lacquers are to be applied, but no priming is required for application of water paints.

A two-tone glazed finish may be applied to Leather-grain Hard Board by applying an undercoater or lacquer sealer followed by flat paint, enamel or lacquer. The third coat shall be glazing liquid with pigment added. When wiping off the excess glazing liquid, a portion remains in the depressions to secure a two-tone effect.

Detailed application specifications and instructions are available from The Celotex Corporation.

CELOTEX DECORATED PANELS

Colorful, plastic-coated tempered hardboard interior panels for quick, economical new construction or remodeling. The smooth, glossy, wear-resistant surface is permanently fused to the hard board base through controlled high-temperature baking processes. It does not chip or peel, and is resistant to heat, cold, moisture, grease, ordinary acids and alkalies.

Celotex Decorated Panels provide beautiful, sanitary, easily-cleaned walls and ceilings for homes and business establishments.

TYPES

Tile (scored 4 in. squares), **Plain,** and **Streamline** (parallel score lines 8 in apart).

COLORS—Peach, Ivory, Light Green, Light Blue, and White. Contrasting score lines. (Other colors available on special order).

SIZES—4 ft. wide x 5/32 in. thick x various lengths.

ACCESSORIES—Celotex accessories include metal mouldings for edges, corners, dividers, and channels around bathtubs and other fixtures; hard board cap, base, and mullion mouldings; waterproof cement, joint filler, and touch-up enamel.

For complete application instructions write The Celotex Corporation.

Celotex Decorated Panels

CELOTEX TRIPLE-SEALED SHINGLES

Description—Made of heavy felts, saturated and triple-sealed with finest asphalts and surfaced with colorful mineral granules.

TYPES

210 Lb. Thick Butt Shingle—A three-in-line strip shingle with extra thickness in exposed portion.

Size—12" x 36" Headlap—2" Exposure—5"
Slabs per sq.—80 Bundles per sq.—3 Approx. wt. per sq.—210 lbs.
Plain Finish—Spanish Red, Evergreen, Blue Black
Grained Finish—Red, Slate, Blue, and Brown Blends

250 Lb. Giant Thick Butt Shingle—An extra heavy, extra durable thick butt three-in-line shingle.

Size—12" x 36" Headlap—2" Exposure—5"
Slabs per sq.—80 Bundles per sq.—3 Approx. wt. per sq.—250 lbs.
Plain Finish—Blue Black
Grained Finish—Green, Slate, and Red Blends

3-Tab Hexagon Shingle—A popular strip shingle for both re-roofing and lower cost new construction.

Size—11⅓" x 36" Headlap—2" Exposure—4⅔"
Slabs per sq.—86 Bundles per sq.—2 Approx. wt. per sq.—167 lbs.
Plain Finish—Evergreen and Blue Black
Grained Finish—Green, Red, and Blue Blends

CELOTEX TRIPLE-SEALED ROLL ROOFING

Description—Tough, waterproof, easily-applied roofing that gives lasting protection and attractive appearance at low cost.

TYPES

DIAMOND POINT ROLL ROOFING—32" x 48'. 2 strips per roll. 128 sq. ft. per roll. Approx. wt. 105 lbs. per roll. **Colors**—Evergreen, Blue Black, Red Blend, Green Blend.

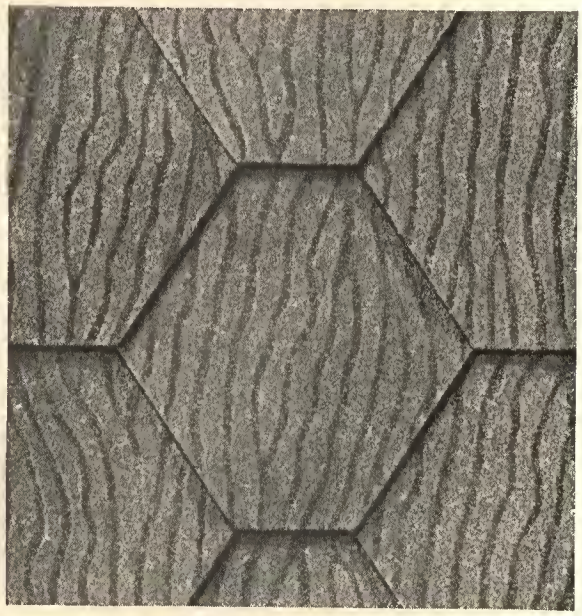
90 LB. MINERAL SURFACE ROLL ROOFING—36" x 36'. 108 sq. ft. per roll. **Colors**—Spanish Red, Evergreen, Blue Black, Red Blend, Green Blend.

SMOOTH SURFACE ROLL ROOFING—36" x 36'. 108 sq. ft. per roll. Mica surfaced. **Weights**—Medium 45 lbs.; Heavy, 55 lbs.; Extra Heavy, 65 lbs.

CELOTEX ROLL SIDING

Brick and Stone Patterns—16" x 41'. Comes in ½ square rolls. Weight approx. 50 lbs. per roll. The brick pattern comes in Red Blend and Buff Blend. The stone design simulates cut stone in a warm gray blend.

Celotex 210 lb. Thick Butt Shingles



Celotex 3-Tab Hexagonol Shingles

Celotex Roll Brick Siding

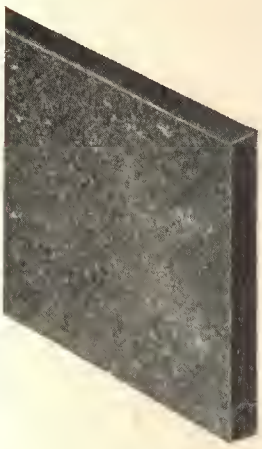
Celotex Roll Roofing

FLEXCELL Expansion Joint

CELOTEX REG. U. S. PAT. OFF

10a
4a

DESCRIPTION—Flexcell* Expansion Joint is a pre-moulded fibre joint of cellular nature, impregnated throughout with a durable asphaltic compound. It is used between slabs of concrete in highways, runways, floors, or any other large area where normal expansion and contraction must be compensated. It is made by scientifically treating genuine Celotex Cane Fibre Board with selected asphalt. The asphalt is carefully applied so that each springy fibre is coated without overloading the tiny air cells within the fibres.



USES—The normal uses are divided into two classes:

(1) Concrete slabs in paving work such as highways, streets, curbs and gutters, airport runways, service stations, drive-in markets, swimming pools, tennis courts, etc.

(2) Structures such as retaining walls, abutments, bridge piers, viaducts, loading platforms, machine bases, reinforced concrete buildings and similar uses where the need for expansion joint is dictated by the nature of the construction.

PHYSICAL PROPERTIES—Like all Celotex cane fibre products, the base of Flexcell is manufactured under the Ferox Process (patented), an integral treatment which effectively protects the material against destruction by dry rot, fungus growth, and termites.

Impregnation—From 35 to 50 per cent by weight of asphalt is introduced into the fibres by the Flexcell process.

Compressibility—The material is compressible to 50 per cent of its original thickness under a pressure not exceeding 750 lbs. per sq. in. The normal elongation of a concrete slab exerts a force of less than this amount.

Resiliency—Tests show that Flexcell, after compression to 50 per cent, returns to 70 per cent or more of its original thickness. This factor of 70 per cent is usually included in basic specifications; whereas for the actual thickness of joint selected in proper construction, the recovery is between 92 and 99 per cent.

Non-extrusion—Flexcell is non-extruding because the air chambers retained within the board permit it to be compressed without being displaced. When compressed to half its original thickness, the extrusion will be less than ⅛".

Bonding Strength—The rough surface of Flexcell permits the concrete to grip and hold firmly to the Flexcell filler, thus providing a tight joint and anchoring it in position.

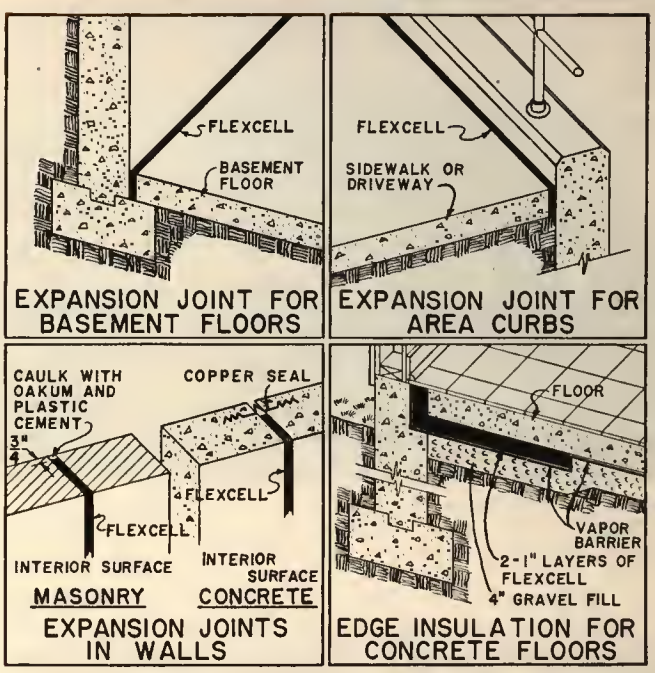
Ease of Handling—Flexcell is light in weight, easily handled at all temperatures. It does not become hard or brittle in cold weather, nor soft and sticky in hot weather. It is readily stored and holds its shape indefinitely.

Durability—Flexcell in use over a period of 15 years has shown no deterioration and no harmful effects from heat, moisture, freezing, and thawing.

SIZES AND THICKNESSES

Standard Size sheets 36" wide by 10' long in thicknesses of ¼", ⅜", ½", ¾", and 1". Necessary size of joint is cut from this sheet to fit job conditions. Other sheet sizes and rectangular strips are available on special order.

* FLEXCELL is a registered trade mark identifying a premoulded expansion fibre joint consisting of cane fibre and asphalt compound, manufactured by The Celotex Corporation.



TYPICAL USES OF FLEXCELL EXPANSION JOINT

Here the Flexcell Expansion Joint will remain non-extruding and provide a smooth and trouble-free road for years to come.

FLEXCELL COMPLIES WITH:

American Association of State Highway Officials Standard Specification M 59-42.

Federal Specification HH-F-334.

American Society for Testing Materials Tentative Revisions of Standard Specifications for Preformed Expansion Joint Filler D 544-41.

War Dept., U. S. Engineer's Office Spec. No. 3276.

Navy Dept., Bureau of Yards and Docks Spec. 4Yd, Item 1-10, 11.

U. S. Veterans' Administration.

State Highway Department Specifications for Bituminous Fiber Expansion Joint for Use on State and Federal Aid Projects.

FLEXCELL* VIBRATION ISOLATION—Has the same properties and characteristics as Flexcell Expansion Joint. Used in 1" thickness, in varying number of layers, for isolating mechanical vibrations. The heavier the machine or vibration factor, the thicker the cushioning material required. The machine can be mounted on a rigid concrete base floated on Flexcell or Flexcell can be placed under legs or bearing surface of machine.

CELOTEX
REG. U. S. PAT. OFF.

Structural Insulation

AND OTHER BUILDING PRODUCTS

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EAGLE-PICHER

BUILDING INSULATION

pneumatically applied

● FOR HOMES AND COMMERCIAL BUILDINGS

THE EAGLE-PICHER COMPANY

Dark gray Eagle-Picher Mineral Wool is distinctive both in color and performance.

Eagle-Picher

MINERAL WOOL BUILDING INSULATION

Eagle-Picher Insulation is a highly-efficient, heat-resistant material, blawn fram malten minerals at high temperatures. It is available in Granulated Waal, Type H-1, which pravides maximum results using the pneumatic pracess af installatian, and Type H-2, Loose Waal, a material used far hand-packing with a pneumatically installed jab.

Eagle-Picher Insulatian pays far itself in savings—it reduces fuel consumptian up to 40%. It pravides greater camfart and more healthful living canditians in the winter, and keeps homes up ta 15F coaler in the summer.

WHY EAGLE-PICHER INSULATION IS OUTSTANDING

HIGH EFFICIENCY — An autharitative, unbiased research bureau gives Eagle-Picher Mineral Waal the law thermal canductivity af 0.27 Btu at 103 F mean temperature. This means that anly 0.27 British thermal units af heat pass thraugh a sq ft af Eagle-Picher Mineral Waal, ane in. thick, in an hr, when the temperature difference between the hat and cald surface is 1 F (mean temperature 103 F).

FIRE RESISTANT—Eagle-Picher Insulatian, a non-cambustible material, farms an effective barrier to flames, gives added pratection when installed in the raaf and in hallaw, flue-like sidewall spaces. As a result af tests canducted at Columbia University, the N.Y.C. Bureau af Buildings gave full appraval to the use af Eagle-Picher Insulation "where fire retarding is required under the pravisians af building cade and the multiple dwelling law."

NON-CONDUCTOR — Eagle-Picher Insulatian actually serves as a safeguard when shart circuits ar braken wires occur within the walls. As a result, it helps prevent fires that are caused by sparks from shart circuits ar braken wires.

WATER-REPELLENT—In a recent test by Pittsburgh Testing Laboratary, a sample af Eagle-Picher insulatian was submerged in water ta a depth af one inch for twa haurs, in accardance with Test Pracedure C-209 af the American Saciety for Testing Materials. The vapar absarptian of the insulation under these test canditians was only 0.6% by volume, clearly indicating its remarkable water repellency.

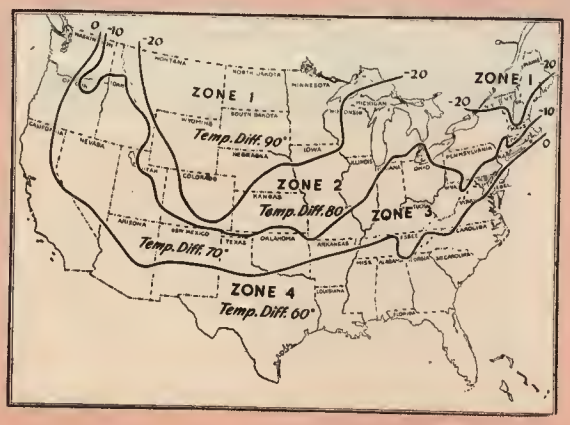
SOUND-DEADENING — Althaugh nat usually considered an acoustical material, Eagle-Picher Insulatian pravides valuable assistance in helping ta reduce saund transmissian thraugh areas in which it is installed—helps keep aut the unpleasant din af street cars, buses, car harns, and ather naises.

NON-SETTLING—The springy, resilient fibers of Eagle-Picher Mineral Waal help this insulation hold its positian in sidewalls and slopes, keeping the heat barrier intact and free fram vaids ar "settled" uninsulated areas where heat might leak thraugh.

FULL-THICK EAGLE-PICHER INSULATION BRINGS THE GREATEST SAVINGS

The heat-stopping ability af any nan-reflective insulating material, whether rigid ar fill type, increases in direct ratia with the thickness ta which it is installed.

When Eagle-Picher Insulation is installed full-thick, it brings results which greatly exceed those produced by installations that merely meet Gavernment minimum requirements. The accampanying map shaws the various zanes where fuel savings, made by full-thick Eagle-Picher Insulatian, are of paramount importance as the temperature difference becames greater.



IT'S EXCLUSIVE...IT'S DIFFERENT

THE *Eagle-Picher Certified* INSULATION JOB ASSURES THOROUGH PROTECTION

All insulations are not alike, and neither are supervisory controls of the methods by which various types are installed. The Eagle-Picher Company, through a contractual agreement with authorized applicators, offers home owners the Certified Insulation Job—a new, exclusive, complete method of installing insulation that assures maximum benefits, winter and summer.

Every Eagle-Picher Certified Job is, in effect, a "custom insulation application," actually designed for a specific home, and incorporating Eagle-Picher's established scientifically engineered specifications, the highest quality workmanship, and the exclusive use of permanent Eagle-Picher Mineral Wool Insulation.

Specially trained engineers actually study the design and construction of the house and prescribe necessary and adequate measures to insure thorough insulation and maximum protction. Eagle-Picher representatives are assigned to spot-check Certified Jobs to be certain they have been installed in strict accordance with Eagle-Picher's factory-engineered specifications.

THE EAGLE-PICHER CERTIFIED JOB IS EXCLUSIVE IN 3 WAYS

1. ENGINEERED SPECIFICATIONS—Any gaad insulatian jab must be "tailared" to the canstructian af the hause, if it is ta praduce maximum results and insure full satisfactian ta the hameawner. Befare every Certified Insulatian Jab is installed, campetent engineers cansider every detail af the hause canstructian.

Design—The architectural style af the hause, including darmers, flaars aver unexcavated areas, raams aver open parches ar unheated garages, and similar constructian details, make it imperative that individual cansideratian precede the installatian af every Certified Insulatian Jab.

Locatian—is naturally an important factar. The geographic lacatian of the hause determines the seasanal temperature extremes which must be considered.

Exposure—af the hause ta strang winds ar hat sun, and the degree af pratectian afforded by natural abjects will alsa influence the engineering af a Certified Insulatian Jab.

2. QUALITY WORKMANSHIP — When an autharized Eagle-Picher cantractar installs a Certified Insulatian Jab, the hameawner has assurance of expert warkmanship. Tharaughly-trained "hame camfart specialists" are equipped with the mast modern blawing apparatus for pneumatic installatians.

3. QUALITY MATERIALS—An Eagle-Picher Certified Insulatian Jab, pneumatically installed in the home, includes the exclusive use af fireproaf, water-repellent, permanent Eagle-Picher Mineral Waal Insulatian. The material has the same lasting, efficient praperties that are described in detail an Page 2.

WHEN THE JOB IS COMPLETED
The Homeowner Knows That

—proper areas have been insulated campletely, assuring the hame awner af a tharaughly insulated hause. Na vaids remain.

—anly Eagle-Picher Insulatian and tap-grade auxiliary materials have been used.

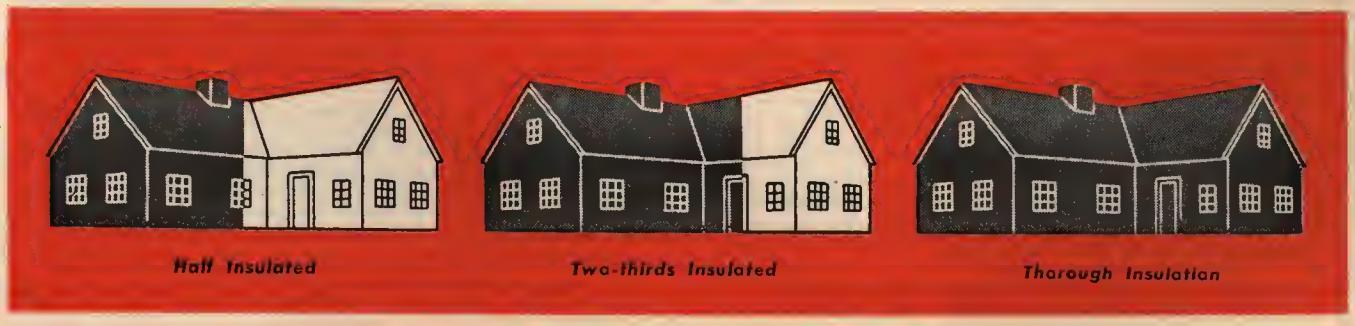
—carrect ventilatian has been pravided.

—the Eagle-Picher Insulatian has been installed at the carrect thickness and density far maximum efficiency.

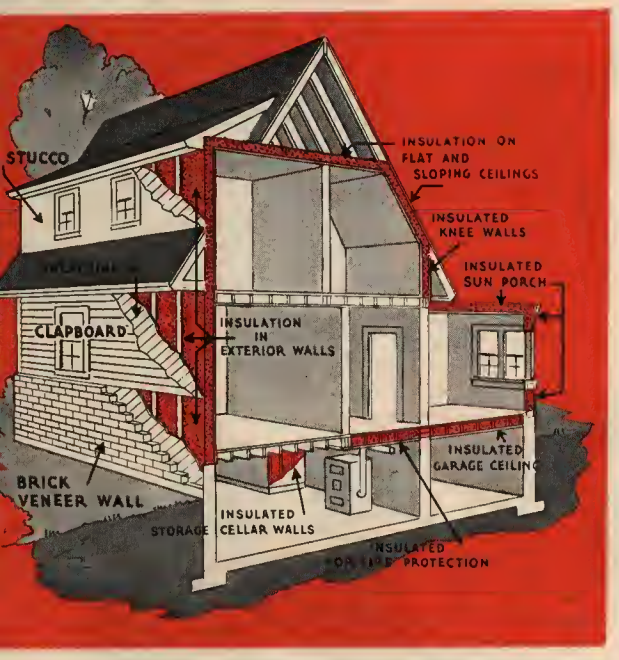
—all wark has been dane neatly and carefully.

—maximum hame camfart and fuel savings will result.

Lastly, when the hame is campletely insulated, the Eagle-Picher Cantractar presents the hameawner with a *signed certificate* stating that the jab has been perfarmed in campliance with Eagle-Picher's rigid, engineering specificatians—assurance that na carners have been cut in materials ar warkmanship.



Eagle-Picher INSULATION FOR



The exclusive Eagle-Picher Certified Insulation Job can be installed in new or existing homes only by the authorized Eagle-Picher Insulation Contractor.

The insulation is pneumatically blown into the roof and hollow sidewall spaces of the house. There is no muss, no fuss; quality workmanship and materials assure complete satisfaction. The Certified Insulation Job is synonymous with maximum, lasting efficiency—it provides thorough, uniform coverage at the correct density.

A quick observation of the illustration at the left is sufficient evidence of the value of COMPLETE insulation in the home. By providing COMPLETE insulation, the homeowner is able to enjoy the ultimate in year 'round comfort, health, protection and economy. Careful planning, based on a thorough engineering survey of the home, assures complete thermal protection with an Eagle-Picher Certified Insulation Job.

GENERAL SPECIFICATIONS

A. Insulating Materials

Mineral Wool insulation used shall be Eagle-Picher Home Insulation as furnished by The Eagle-Picher Sales Company, Cincinnati, Ohio, or by its Authorized Pneumatic Blowing Contractors. The different types of Eagle-Picher Home Insulation which may be used are:

Eagle-Picher Type H-1—Factory-Granulated Mineral Wool for pneumatic applications.

Eagle-Picher Type H-2—Loose Mineral Wool for blocking-off purposes and for application in irregular voids. Comes packed in 40 lb bags.

Eagle-Picher Type H-3—Water-proofed, paper-backed, Full-Thick Mineral Wool Batts for alternate applications in knee walls, unfinished roof rafters, unfinished gable ends.

B. Auxiliary Materials

All auxiliary materials used in conjunction with the application of Eagle-Picher Insulation shall be of first class quality, free of defects.

C. Workmanship

1. Eagle-Picher Home Insulation shall be installed only by authorized Eagle-Picher Contractors using approved equipment.
2. All Eagle-Picher Home Insulation materials shall be carefully installed by trained applicators. Workmanship shall be guaranteed first class and in strict accordance with instructions outlined in Eagle-Picher's Application Specifications and OPERATOR'S MANUAL.
   a. Eagle-Picher Type H-1 shall be blown pneumatically to uniform, specified thickness so as to insure freedom of voids.
   b. Eagle-Picher Type H-2 shall be installed uniformly (by hand) to fill irregular voids, for blocking-off purposes, and as otherwise required to supplement the pneumatic application.
   c. Eagle-Picher Type H-3 Batts shall be installed snugly by hand between wood studs or joists when specified. The paper side of the Batts shall be placed against (or nearest) the warm-in-winter side of the area being insulated.

D. Ventilation

Whenever practical, permanent ventilators shall be installed in all unheated areas located directly above the insulation line to exhaust accumulated heat (in summer) and excessive humidity (in winter).

a. If natural ventilation is provided by means of louvers, they shall be of sufficient number, properly located, to insure cross ventilation.

b. If rotary or turbine type ventilators are used, they shall be of size sufficient to remove six (6) cu ft of air per hr per sq ft of ceiling area.

c. In case of knee walls, ventilation should be supplied by one or a combination of these methods:

1. Grilles under the eaves;
2. Slant type louvers;
3. Leaving a breathing space in every other slope.

In all cases, the intake shall be twice as great as the exhaust.

E. Alternate Methods of Insulating Upper Heat Loss Level

Variations in home construction and operating conditions may require different methods of insulating the Upper Heat Loss Level.

In a house having an unfinished attic not to be used for living quarters, Eagle-Picher Insulation shall be installed over the top floor ceiling. Interior partition walls, which are open to the attic space, should be suitably blocked off. Scuttle holes or trap doors shall be separately insulated. If drop ceilings are present they shall be insulated so that a continuous blanket of Eagle-Picher Insulation is provided. The unfinished attic space shall be ventilated.

Stairways leading from the attic to the floor below shall be treated in the following manner: A hinged trap door shall be provided at the top of the stairway, tightly fitted and insulated so as to prevent air infiltration or excessive heat transmission.

When there is a heated room in the attic, Eagle-Picher Insulation shall be installed over the top floor ceiling, down the slopes to the knee walls, the flats beyond the knee walls, and in the gable ends. Blocked-off, unheated areas, such as directly under the peak of the roof, or behind the knee walls, shall be adequately ventilated.

The exposed ceiling, sides, and face of dormers shall be insulated. When space behind one or both knee walls is desired for storage. Eagle-Picher Insulation shall be installed over the top-floor ceiling, then continuously downward between the roof rafters, over the storage space. The portion of the gable ends closing the heated area shall be insulated. When insulation is to be installed in an unfinished attic, which may be finished at a later date, the insulation shall be placed under the roof between the rafters, but not up to the peak of the roof. A collar beam shall be installed beneath the peak and the space above shall be insulated. Rafter spaces shall be blocked off carefully at the eaves.

APPLICATION SPECIFICATIONS

A. Upper Heat Loss Level

1. Ceiling of Top Floor
   - a. Open flat areas shall be insulated pneumatically with Eagle-Picher Insulation Type H-1, applied between joists to a nominal thickness of four (4) in. The thickness shall be checked carefully on completion of the blowing. When specified, the wool shall be uniformly leveled between the joists.
2. Roof Rafters or Slopes
   - a. Finished rafters or slopes shall be insulated with Eagle-Picher Insulation Type H-1, installed pneumatically to full rafter thickness.
   - b. Unfinished rafters or slopes shall be covered with a suitable vapor barrier, well lapped and secured in place with lath, plaster board, or wires laced in zig-zag fashion between nails spaced on six (6) to eight (8) in. centers. Eagle-Picher Insulation Type H-1 shall then be installed pneumatically to full rafter thickness.
3. Knee Walls.
   - a. Knee walls shall be covered with a suitable retaining material, applied over the exposed face of the studs. Eagle-Picher Insulation Type H-1 shall be installed pneumatically to completely fill each stud space. Open joist spaces located directly beneath the knee walls shall be blocked off with Eagle-Picher Insulation Type H-2, as required to protect the living quarters against air infiltration.
4. Flat Beyond Knee Wall
   - a. Flat areas between the knee walls and the exterior walls shall be insulated pneumatically with Eagle-Picher Insulation Type H-1, applied between the joists to a nominal thickness of four (4) in.
5. Dropped Ceilings and Exposed Interior Walls.
   - a. Dropped ceilings shall be insulated in the same manner as Ceiling of Top Floor.
   - b. Exposed interior walls, such as those adjacent to dropped ceilings, shall be insulated in the same manner as Knee Walls, described under No. 3. Insulation on exposed interior walls shall be joined continuously with the insulation on adjacent specified areas to protect the living quarters against air infiltration.
6. Scuttle Holes, Trap Door or Stairway
   - a. Scuttle holes or trap doors leading into the attic from the living quarters shall be insulated with Eagle-Picher Insulation Type H-3 Batts.
   - b. Stairways shall be blocked off by installing a hinged trap door to cover the entire stairway opening.
7. Dormers
   - a. Dormer ceilings shall be insulated pneumatically with Eagle-Picher Insulation Type H-1, applied between ceiling joists to a nominal thickness of four (4) inches.
   - b. Finished dormer sides and faces shall be insulated pneumatically with Eagle-Picher Insulation Type H-1, blown between studs to full stud thickness.
   - c. Unfinished dormer sides shall be insulated in accordance with specifications outlined for Knee Walls, described under No. 3.
8. Gable Ends
   - a. Finished gable ends shall be insulated pneumatically with Eagle-Picher Insulation Type H-1, installed to full stud thickness. Refer to Specifications for Exterior Walls, described under No. 9.

B. Lower Heat Loss Level

9. Exterior Walls
   - a. The hollow space between studs shall be filled the full stud thickness with Eagle-Picher Insulation Type H-1, applied pneumatically.
10. Floor Overhang
    - a. Eagle-Picher Insulation Type H-1 shall be blown pneumatically between joists to a minimum nominal thickness of four (4) in. Exposed portions of the joists (ends or sides) shall be blocked off, as required, with Eagle-Picher Insulation Type H-2.
11. First Floor Flat and Sloping Ceilings
    - a. Exposed first floor flat and sloping ceilings shall be insulated with Eagle-Picher Insulation Type H-1, blown pneumatically between joists to a nominal thickness of four (4) in.
12. Bays
    - a. The ceiling of bays shall be insulated with Eagle-Picher Insulation Type H-1, blown pneumatically between joists to a nominal thickness of four (4) in. The sides and face of bays shall be insulated in the same manner as Exterior Walls, described under No. 9. The floor of bays shall be insulated in the same manner as Floor Overhangs, described under No. 10.
13. Exposed Floor Above Unheated, Unexcavated Basement
    - a. Accessible exposed floors located above unheated, unexcavated basement areas shall be insulated with Eagle-Picher Type H-3 Batts. Batts shall be installed snugly between the joists and securely wired in place. Exposed portions of the joists (ends or sides) shall be blocked off with Eagle-Picher Insulation Type H-2, as required, to protect the living quarters against air infiltration.
14. Adjoining Garage
    - a. Finished walls separating the garage from the living quarters of the house shall be insulated with Eagle-Picher Insulation Type H-1, pneumatically applied to full stud thickness in the same manner as Side Walls, described under No. 9.
    - b. Finished garage ceilings located directly beneath the living quarters shall be insulated pneumatically with Eagle-Picher Insulation Type H-1, blown between joists to a nominal thickness of four (4) in. Exposed portions of the joists (ends or sides) shall be blocked off as required.

Flat Attic Areas

Siding *Brick Veneer* *Stucco*

COMPARATIVE INSULATING VALUES

Thickness	WALL-THICK	
		Eagle-Picher Insulation, as applied in walls.
	1/2"	Insulating Wallboard.
	6 1/2"	Frame Wall (¾-inch drop siding, paper, 1-inch wood sheathing, studs, 1-inch matched boards.)
	8"	Brick Veneer Wall (4-inch brick, wood sheathing, studs, interior finish.)
	8"	Solid Brick Wall (no finish.)
	6"	Stucco Wall (1-inch stucco, wood sheathing, studs, interior finish.)

Comparison of common building materials shows why homes need Eagle-Picher Insulation.

Eagle-Picher BUILDING INSULATION

Eagle-Picher Type H-3 Insulating Batts are designed far rapid, law cast applicatian, particularly in new hames under canstructian. They can be installed in sidewalls, under raaf rafters, aver ceilings, under flaars, and in knee walls.

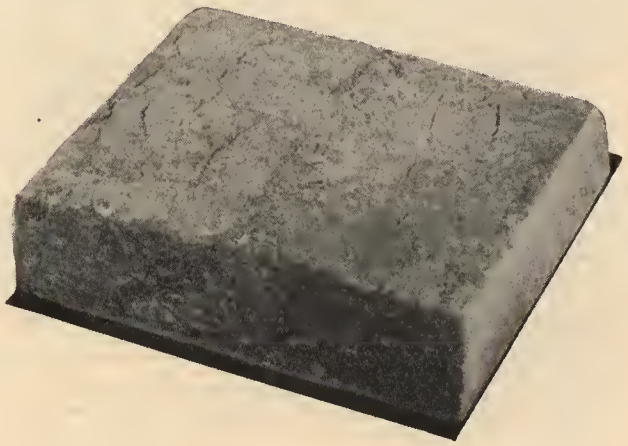
These efficient, light-in-weight Paper-Backed Insulating Batts are manufactured fram carefully selected minerals and pracessed at high temperatures. They passess the same remarkable, lasting praperties as Eagle-Picher Type H-1 Granulated Waal and Eagle-Picher Type H-2 Loase Mineral Waal. Compased af water-repellent, firepraaf Eagle-Picher Mineral Waol, they are backed an ane side by an efficient vapar barrier. They are available as Full-Thick Batts and Semi-Thick Batts, designed ta fit snugly between jaists ar studs spaced an 16 in. centers.

EAGLE-PICHER BATTS ARE EASY TO INSTALL

Eagle-Picher Insulating Batts pravide a quick, canvenient, easy way af applying Eagle-Picher Mineral Waal Insulatian in new hames and far certain applicatians in ald hames. They are easily cut with a knife ar shears; ends are accurately manufactured ta help maintain a cantinuaus, unbraken blanket af insulation. Eagle-Picher Insulating Batts are flexible—they can be curved ta fit ardinary variatians in wall surfaces.

EFFICIENT VAPOR BARRIER

Eagle-Picher Type H-3 Insulating Batts affer an additianal advantage with the efficient vapar barrier, manufactured



af a special, asphalt caated paper. This paper is placed clasest ta the inner ar warm side af the wall, ceiling ar flaar, acting as a seal against the passage of water vapor. 1 ½ in. flanges hold the Batts in place, when lapped aver the studs and tacked.

GENERAL INSTRUCTIONS AND SPECIFICATIONS

MATERIALS

Insulation sholl be Eagle-Picher Insulation as furnished by The Eagle-Picher Compony, Cincinnoti, Ohio, or by its outhorized outlets.

EAGLE-PICHER TYPE H-3 BATTS

For quick, easy opplication in new construction.

SIZE	BATTS PER PKG. FULL-THICK	BATTS PER PKG. SEMI-THICK	SQ FT NET AREA FULL-THICK	SQ FT NET AREA SEMI-THICK
15 in. x 24 in.	12	18	30	45

Integral vapor barrier on one side. Flanges 1½ in. wide are pravided alang twa edges af the vapar barrier ta facilitate tacking in positian.

WORKMANSHIP

Manual Installation

Eagle-Picher Batts sholl be applied uniformly to specified thickness in accordonce with the instollotion methads described here.

WORK INCLUDED

Eagle-Picher Insulotion sholl be instolled in accordance with Eagle-Picher's Application Specificatians to provide o continuous blonket of insulotian over the exposed oreos specified below.

(Note: Delete those areas and applications nat applying.)

1. Attics

(a) Between all ceiling joists.
(b) Between oll rofters.
(c) Between oll studding in gable ends, exposed closets, dormers.

2. Exterior Walls

(a) Between studding in oll walls from foundation ta roof.
(b) Between studding in ..... (state) walls from ..... (state) story to ..... (state) story.
(c) State ony additions or exceptions.

3. Interior Walls

(a) Between studding in ..... (state) woll from ..... (state) floor to ..... (state) floor in .....(state) roams.
(b) State ony additians or exceptions.

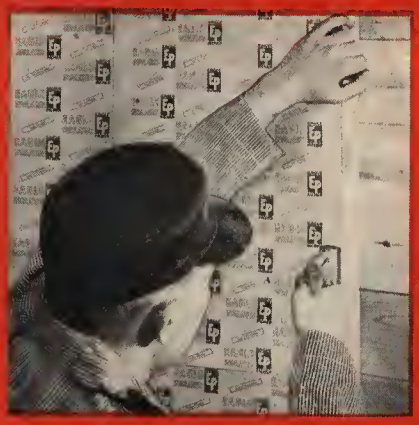
4. Suspended Ceilings

(a) Between supporting members over finished ceiling.
(b) Between supporting members as construction work progresses.
(c) State ony additions or exceptions.

5. Miscellaneous Areas

(a) (State other work to be included.)

HOW TO INSTALL EAGLE-PICHER TYPE H-3 BATTS



STARTING—For best results, begin at the floor ond work up when applying Eagle-Picher Insulating Batts. Secure the sections firmly in place with tacks, lath noils or staples, which should be spoced on centers not greoter than 6 in.

ATTIC FLOORS—The vapor barrier should always face down in open ottic floors, closest to the heated portion of the house. In floors over porches or unexcavated areas, the vapor barrier should face upward. No tacking or wiring is necessary.

CEILINGS—Wire reinforcement is preferoble if the attic is to remain unfinished. When it is impossible to install the Batts from above the ceiling joists, they shall be placed from underside by pushing them between the joists.

PLACING—Tuck the Batts snugly in all stud or joist spaces; then secure them in position by tacking the flanges to the face of the studs or joists. Butt all joints closely together, leoving no voids ot the joints or top and bottom stud plates.

VAPOR BARRIER — The vapor barrier should face owoy from the outside temperatures. In roofs or top floor ceilings, it shall face downward; under cold floors, it shall face upward; in side-walls, it shall face toward the inside of the room.

REINFORCING—When Eagle-Picher Insulating Batts are installed overhead in unfinished areas, they shall be supported by lacing wire or stout cord between short nails spaced 16 in. apart. Over unheoted areos, vapor-permeable paper may be used for the support.

IRREGULAR SPACES—Eogle-Picher Insulating Botts are eosily cut with a knife or shears to fit irregular spaces. Flonges may also be cut to fit ony triangulor corners. Remaining small open spaces are to be filled with Eogle-Picher Type H-2 Loose Mineral Wool.

SIDEWALLS—Meosure the lengths of the studs between ceiling and floor plates. Then add 3 in. to provide 1½ in. tocking space at the top ond bottom. Cut the Insulating Batts and fit the vapor barrier snugly around all obstacles.

END FLANGES—These con easily be mode by cutting through the insulation 1½ in. from the end, *without cutting through the vapor barrier*, which should then extend 1½ in. from the end of the insulation, forming a secure tacking flange.

OTHER *Eagle-Picher* PRODUCTS FOR GREATER HOME COMFORT

THE EAGLE-PICHER COMBINATION STORM WINDOWS AND STORM DOORS FOR WINTER PROTECTION

A leader in the home insulation field, Eagle-Picher now offers other new home conditioning products—the Combination Storm Window and Screen and the Combination Storm and Screen Door.

The efficient Eagle-Picher Storm Window cuts fuel bills up to 30% during winter months and reduces cold drafts around window areas; the lightweight Storm Door provides a permanent weather-tight seal which virtually eliminates cold drafts around doorways. The window and door have lightweight screen insert panels which can be slipped into the permanent aluminum frames in a few seconds, from inside the house. In addition, the Storm Window is equipped with a special Tuk-Away feature which allows for simple, safe storing of either panel in the window frame. Eagle-Picher Storm Windows and Storm Doors provide distinctive beauty that blends harmoniously with any type house construction.

THE EAGLE-PICHER AIR CHANGER FOR COOL, SUMMER COMFORT

Statistics prove that summer's hot temperatures drop steadily during the night. With nature providing this cool air, homes can be cooled too, by drawing the air into the house.

The Eagle-Picher Air Changer keeps a large volume of this cool, constantly-changing air flowing through the home—providing cool, restful comfort.

This superior Air Changer differs from ordinary fans in construction and principle. As a result, it can be installed in basements or in attic spaces, having much less clearances than those required by typical attic fans. Its rustproof, aluminum parts provide unusual lightness-in-weight, lasting durability and greater beauty. The motor and fan wheels are ball bearing supported. All moving parts are floated in rubber, and the blades are acoustically treated to give unusually quiet operation.

MADE BY EAGLE-PICHER ...a leader in business since 1843

Eagle-Picher Insulation and Home Conditioning Products, including the new, aluminum Combination Storm Window and Screen, and the Air Changer are manufactured by Eagle-Picher, an old and reputable company which has served the building and industrial trades with dependable and quality products for over a century.

Today, Eagle-Picher operates numerous plants located throughout the United States. It produces over 200 kinds of materials and ranks among the world's foremost manufacturers of lead, zinc, insulation and building material products. Every Eagle-Picher Product is subjected to the most rigid laboratory and manufacturing control. Constant effort is exerted to reach still higher levels of quality and performance.

As a pioneer in home insulation, and a leader in the field of building material products, Eagle-Picher's modern, well-equipped Research laboratories have played a major role in developing the present high standards of efficiency and durability so characteristic of all Eagle-Picher Products.

EAGLE EP PICHER

THE EAGLE-PICHER COMPANY

HOME CONDITIONING PRODUCTS DEPARTMENT

AMERICAN BUILDING • CINCINNATI 1, OHIO

SALES OFFICES IN PRINCIPAL CITIES

10a
6

FIR-TEX

INSULATING BOARD

for

- INTERIOR FINISH
- PLASTER BASE
- SHEATHING
- SOUND INSULATION
- ROOF INSULATION
- REFRIGERATION INSULATION

1949 EDITION

Fir-Tex

Fir-Tex is a processed all-wood board specially made to do two things at once and at one cost and do both supremely well. The two things are Insulate and Build.

Fir-Tex is made of sound, healthy wood fibres, felted together and pressed into firm solid boards in such a way as to preserve the natural air cells within the fibres and add millions more between fibres. It contains *millions* of these insulating air cells per cubic inch! Naturally very little heat can get through this super insulation, which soaks up noise, too, like a blotter.

Fir-Tex has been chosen to insulate hundreds of government, public and commercial buildings, and thousands of homes and apartment houses. Besides its wonderful insulating qualities, Fir-Tex has other practical advantages:

(*All Fir-Tex products are protected from the ravages of termites by the exclusive Fir-Tex process.*)

advantages

- Durable and permanent. Will insulate efficiently during the life of the building. Its sound wood fibres add to the strength of the structure.
- Won't settle, or shake down. Not affected by vibrations caused by street cars, trucks, etc.
- Provides unbroken area of uniform insulation. No cracks or knot holes. No thin spots. No open space at top.
- Its sound, tough fibres have been sterilized and waterproofed. Not subject to dry rot or fungus growth.
- Easy to handle. Saves labor time. Supports its own weight while being nailed.
- Uniform tensile strength and transverse strength as well as resistance to moisture are assured by rigid testing every two hours during manufacture.
- Clean to handle. No gloves needed.
- All wood, unadulterated. No acids or chemical used during manufacture to break down fibres.

After the wood fibres are felted and pressed into shape, they pass through a battery of dry kilns where they are sterilized under intense heat, emerging as firm solid boards. Then they are color coated, ironed smooth, wrapped and labeled.

guide to applications

paneling for interiors — section a

Fir-Tex is a three purpose building board. It builds, insulates and beautifies at the cost of insulation alone. Presized at the factory, no further painting or decoration is necessary.

• building board

Fir-Tex Building Board is made in large sheets four feet wide, in six lengths and five thicknesses. This type of Fir-Tex goes up fast, is clean and easy to handle. Labor costs are reduced drastically.

• finish plank

Fir-Tex Finish Plank comes in three lengths and in two widths. Used for decorative interior finish, it is equally desirable for homes or restaurants and other commercial buildings.

• tile

Fir-Tex Tile is available in three small sizes and one large size. It is preferred particularly for ceilings but can be used for sidewalls as well.

sound insulation — section b

Because of the myriad of aircells in each square inch of Fir-Tex, it provides marvelous insulating qualities—not only against heat and cold but for sound insulation as well.

• sound deadening

All Fir-Tex products retard the passage of sound from one room to the other. Applied to studs and joists, an unbroken area of insulation is provided.

• building board

This large sheet type of Fir-Tex has the same insulating properties of other Fir-Tex products.

• thrift wall board

A building board of substandard thickness but ideal for temporary construction or when budgets are small.

• insulating plaster base lath

Fitted closely together, Fir-Tex Insulating Plaster Base Lath provides no open spaces for heat to pass through as is the case with wood lath. Lath marks are virtually eliminated and plaster cracking greatly reduced.

Fir-Tex insulation

- **insulating tile**

Fir-Tex Insulating Tile combines beauty and insulation in the one product.

- **insulating finish plank**

High insulation value plus unusual decorative effects are provided in this particular type of Fir-Tex product.

- **acoustical correction**

Fir-Tex Tile sprayed with acoustical paint absorbs noise like a blotter absorbs ink. Use in theatres, auditoriums, everyplace where control of sound is a factor.

- **acoustical tile**

For acoustical correction, Fir-Tex is available in tile in standard sizes.

plaster base — section c

Fir-Tex Plaster Base lath is especially made to receive and hold plaster. It is nailed directly to studs and joists.

- **insulating plaster base lath**

Long edges are shiplapped, ends square edged. Plaster is applied directly to the lath where it sticks like glue.

exterior sheathing — section d

Fir-Tex Sheathing is made particularly for exterior use. Retards filtration of wind, dust and moisture—seals the structure against heat, cold and noise. Replaces wood sheathing and building paper.

- **insulating sheathing**

Horizontal type—A homogeneous, integrally waterproofed insulating sheathing. One size only with long edges Vee-jointed; ends, square edged.

Large sheet type—Strong sturdy boards integrally waterproofed and especially made for exterior sheathing.

refrigeration — section e

Fir-Tex Refrigeration blocks provide a most effective and economical insulation material for cold storage warehouses, breweries, wineries, meat storage and air conditioning plants.

- **insulation blocks**

Low density; high insulation value. Made in one homogeneous board up to 1½″ thick without lamination. Standard thicknesses up to 3″.

roof insulation — section f

Fir-Tex Roof Insulation board is a low density board especially manufactured for use on flat decked roofs of wood, steel, concrete, structural gypsum, or unit tile and for pitched roofs of frame dwellings.

- **insulation board**

Two types of board are available—Square edged and with offset edges. Thicknesses greater than 1½″ are laminated.

- **sheathing**

Especially adapted for use on pitched roofs of frame buildings.

painting and decoration — section g

- **interior walls and ceilings**

Fir-Tex Building board is factory finished and presized, ready for use when delivered on the job. However, if after use, further decoration is desired, the finish lends itself admirably to application of water-thinned paints.

hardboard products — section h

Fir-Tex Hardboard products are manufactured from all-wood fibres and are especially designed to withstand hard use and exposure to moisture. Used for wainscot, counter fronts, etc. Tempered and untempered.

index of Fir-Tex products

	Section	Page
Paneling for interiors	a	4
Sound Insulation	b	8
Plaster Base	c	10
Exterior Sheathing	d	12
Refrigeration	e	14
Roof Insulation	f	16
Painting and Decorating	g	19
Hardboard Products	h	20

building board

Fir-Tex Building Board, as interior finish, takes the place of lath and plaster—thus providing both building material and insulation at the cost of insulation alone. It adds to the strength of the entire structure, becomes an integral part of the home. Fir-Tex does not creep or settle. It provides an unbroken area of insulation continuity thereby reducing fuel bills—even permitting the use of a smaller, less expensive heating plant than must be installed in an uninsulated dwelling.

master specifications

1. **Work Included:**
(NOTE:—Here list and locate accurately the wall and ceiling areas to be covered.)

2. **Material:** Interior Finish shall be Fir-Tex Building Board (specify size, color, thickness).

3. **Framing:** Members shall be spaced accurately at not to exceed 16″ O.C. Headers shall be installed back of all baseboards, chair rails and other heavy wood trim. Additional headers and members shall be installed where necessary. Framing members shall present a true, even surface.

3A. **Alternate:** Sound, dry, wood lining shall be installed horizontally on all walls and ceilings and spaced to provide a firm nailing base. Lining shall be shimmed to provide a true, even surface.

tests and properties

Tests by Robert W. Hunt Co., Chicago, Ill.
(All tests made on ½″ thickness)

Thermal Conductivity	Tensile Strength	Transverse Strength	Nailing Strength	Resistance to Moisture 2 hrs. Immersion at 70°F.
½″ 0.32	241 lbs. per sq. in.	15.78 lbs.	297 lbs. per lin. ft.	4.7% by volume

three types

Ivrykote—Square edged insulating board with glazed, washable mottled ivory surface.

Colorkote—Four colors in addition to Ivrykote—Wheatkote, Blukote, Aprikote, Greenkote.

Natural Tan—Natural color of felted wood fibres.

size of board

Type	Thickness	Width	Length
Ivrykote	½″	4′	6′, 7′, 8′, 9′, 10′, 12′
Colorkote	½″	4′	6′, 7′, 8′, 9′, 10′, 12′
Natural Tan	½″, 1″	4′	6′, 7′, 8′, 9′, 10′, 12′

Fir-Tex Tile on ceilings and Colorkote panels on sidewalls change dingy attic space into a beautiful room.

3B. Alternate: Masonry Walls: Sound, dry wood furring strips shall be installed (vertically) (horizontally) securely to masonry walls (12″) (16″) O.C., and shimmed to present a true, even surface. Header strips of same material shall be installed to provide adequate support behind all heavy wood trim, and also behind all edges of every sheet.

4. Cutting and Fitting:

a. Exposed joints: All cutting, bevelling, and grooving shall be done in a neat, workmanlike manner with special tools such as Bevil Devil, Stanley Cutter, or sharp linoleum knife.

b. Joints to be covered: Cutting may be either with special tools or with a sharp fine tooth saw, using rapid strokes with a minimum of pressure.

5. Application:

a. All packages shall be opened and the Fir-Tex boards placed singly on edge around the room at least 24 hours before erection.

b. The Fir-Tex boards shall be applied with length (paralleling) (at right angle to) the framing members with the finished surface exposed. All joints shall center over framing members.

c. Spacing. Exposed joints: Fir-Tex boards shall be brought to moderate contact but never forced into place.
Covered joints: Fix-Tex boards shall be spaced ⅛″ apart.

d. Nails: Shall be of sufficient length to penetrate at least ¾″ into wood member. Wherever available, use the special needlepoint fibreboard nail. Otherwise use galvanized finish or casing nails. In average work: 3125 nails per thousand sq. ft. of Fir-Tex are required (3¼ lb. neédlepoint; 5¼ lb. 4d. finish; 6½ lb. 4d. casing).

e. Nailing: (Where finish or casing nails are used, drive each nail at a slight angle). Intermediate members shall be nailed first, spacing nails 6″ apart. Exterior members shall then be nailed, driving each nail well home and spacing nails 3″ apart and ⅜″ in from the edge. Same nailing, 3″ apart, shall be done at both ends.

f. Battens: (Wood) (Metal) Battens (size) and Wood Trim (specify kind, size, etc.) shall be installed with nails of sufficient length to penetrate at least ¾″ into the wood member.

g. General suggestions: The following suggestions are recommended by sound, practical experience:

(1) Plan your work carefully, purchasing only those lengths best adapted to your particular job. The wide range of lengths available permits the reduction of joints to a minimum.

(2) As a general rule, apply ceiling first and walls last.

(3) Usually a better appearance can be obtained by commencing work in center of area rather than at one end.

(4) For best results, apply Fir-Tex to wood lining rather than direct to studs.

(5) Fir-Tex Interior finish must not be subjected to moisture. On new construction delay delivery until dry job condition prevails.

(6) Fir-Tex shall be left in original packages and stored in clean dry place until ready for use.

An extra room can be built inexpensively with Fir-Tex providing beauty plus insulation at the price of insulation alone.

finish plank

Use Fir-Tex Finish Plank for decorative interior finish. The long edges are beveled and the natural tan of the board appears in pleasing contrast against the finished surface of the board. In addition to the beauty given to the room, Finish Plank insulates against heat, cold and noise. Quickly and easily applied.

tests and properties

Tests by Robert W. Hunt Co., Chicago, Illinois

Thermal Conductivity	Tensile Strength	Transverse Strength	Nailing Strength	Resistance to moisture 2 hrs. Immersion at 70°F.
½" 0.32	241 lbs. per sq. in.	15.78 lbs.	297 lbs. per lin. ft.	4.7% by volume

two types

Ivrykote—Beveled edge insulating plank with glazed, mottled ivory surface.

Colorkote—Four colors in addition to Ivrykote—Wheatkote, Blukote, Aprikote, Greenkote.

size of plank

Type	Thickness	Width	Length
Ivrykote	½"	12", 16"	8'
Colorkote	½"	12", 16"	8'

edges and joints

Long edges only are beveled with Standard AA joint.

master specifications

1. **Work Included:**

(Here list and locate accurately the wall areas to be covered.)

2. **Material:** Material shall be Fir-Tex Finish Plank (12") (16") (combination) in width. Specify size, type, color.

3. **Framing:**

a. Sound dry lumber of uniform thickness shall be securely nailed horizontally to framing members, spacing lining units to conform accurately with the plank width but in no case to exceed 16" O.C. Lining shall be shimmed as may be necessary to present a true even surface.

(NOTE:—For best results, specify solid base, though it is thoroughly sound practice to space 4" lining 3" apart and 6" lining 4" apart. Lining wider than 6" is not recommended.)

4. **Cutting and Fitting:** All cutting, bevelling and grooving shall be done in a neat, workmanlike manner, with special tools such as Bevil-Devil, Stanley Cutter, sharp linoleum knife.

5. **Application with Nails:**

a. Fir-Tex Finish Plank shall be applied with joints brought snugly together, but in no case forced into place.

b. Nails should be of sufficient length to penetrate at least ¾" into wood member. Wherever possible, use the special galvanized needlepoint fibreboard nail. Otherwise, use galvanized finish or casing nails in which case each nail should be driven at a slight angle. Nails shall be spaced not to exceed 6" apart where possible. Each nail shall be driven in the bevel flush with the surface but not countersunk, care being exercised to avoid hammer marks on the Fir-Tex. When nailed according to these instructions, 5700 nails are required for each thousand sq. ft. of Fir-Tex Plank. (6 lb. needlepoint: 9½ lb. 4d finish; 12 lb. 4d casing.)

6. **Application with Acoustical Cement:**

(NOTE:—This method is advocated on all better class work, but should be confined to mechanics experienced in its use.)

a. Adhesive shall be best quality acoustical cement (suggested brand such as Atlas Acoustick or equal).

b. Spots of adhesive about the size of a half-dollar and ⅛" thick shall be applied to the back surface of each Fir-Tex Finish Plank near each edge, and not over 10" apart. Press Fir-Tex Plank into position using a sliding sidewise motion until cement begins to set, using an occasional brad to hold Fir-Tex in place.

insulating tile

Fir-Tex Tile is used mainly for ceilings but also is applied in conjunction with Building Board or Finish Plank for pleasing decorative effects. Like all Fir-Tex products, Tile has remarkable insulating qualities against heat, cold, and noise. Beveled all four edges—AA joint except Acoustical Tile which has a bevel edge, butt joint.

tests and properties

Tests by Robert W. Hunt Co., Chicago, Illinois

Thermal Conductivity	Tensile Strength	Transverse Strength	Nailing Strength	Resistance to moisture 2 hrs. Immersion at 70°F.
½" 0.32	241 lbs. per sq. in.	15.78 lbs.	297 lbs. per lin. ft.	4.7% by volume

three types

Ivrykote—Beveled edge Tile with glazed, mottled ivory surface.

Colorkote—Four colors in addition to Ivrykote—Wheatkote, Blukote, Aprikote, Greenkote.

Acoustical—Tile sprayed with a special acoustical paint in white only. Bevel edge, butt joint.

size of tile

Type	Thickness	Sizes
Ivrykote	½"	12" x 12", 12" x 24", 16" x 16", 16" x 32"
Colorkote	½"	12" x 12", 12" x 24", 16" x 16", 16" x 32"
Acoustical	1"	12" x 12" 16" x 16"

master specifications

1. **Work Included:**

(Here list and locate accurately the ceiling areas to be covered.)

2. **Material:** Material shall be Fir-Tex Tile (specify size, type, and color) delivered to the building site in manufacturer's original packages.

3. **Base:**

a. Solid wood base: Sound, dry lumber of uniform thickness and shall be securely nailed to joists to form a continuous level nailing base. Shims shall be installed as required.

b. (alternate) Furring strips: Sound, dry lumber of uniform thickness shall be securely nailed to joists on centers to conform accurately with the Fir-Tex Tile size and design, but in no case to exceed 16" O.C.

(NOTE:—Best practice suggests a maximum of 12" O.C. Thus furring strips under 16" x 32" Fir-Tex Tile would be installed 8" O.C. rather than 16" O.C.)

4. **Cutting and Fitting:** All cutting, bevelling and grooving shall be done in a neat, workmanlike manner with special tools such as Bevil-Devil, Stanley Cutter, sharp linoleum knife.

5. **Application:**

a. (1) Fir-Tex Tile shall be laid in exact accordance with detailed drawings.

(2) Where ceiling is furred, Fir-Tex Tile shall be laid with long edges paralleling the furring strips. Where application is being made direct to plastered areas or to solid backing, Tile may be laid in any direction indicated.

(3) Spacing: Fir-Tex Tile shall be brought to snug contact, but never forced into place. All lines and grooves shall be kept straight and true.

b. Cementing: (This method is advocated in all better class work, but must be confined to those mechanics experienced in its use.)

(1) Adhesive: Adhesive shall be best quality acoustical cement such as Atlas Acoustick or equal.

(2) Spots of adhesive about the size of a half-dollar and ⅛" thick shall be applied to the back surface of Fir-Tex small Tile near each corner, and on Fir-Tex large Tile additional spots shall be applied not over 10 inches apart O.C. Press Tile into position, using a sliding sidewise motion, until cement begins to set, using an occasional brad to hold Fir-Tex in place while adhesive is setting.

c. Nailing: Nails shall be of sufficient length to penetrate at least ¾" into wood member. Wherever available, use the special galvanized needlepoint fibreboard nail. Otherwise use galvanized finish or casing nails in which case each nail should be driven at a slight angle. Nails shall be placed at each corner and spaced not over 6" apart where possible. Each nail shall be driven in the bevel of the tile flush with the surface but not countersunk, care being exercised to avoid hammer marks on the Fir-Tex.

sound deadening

In addition to retarding the passage of heat and cold, Fir-Tex also is most effective against the passage of sound from other parts of the structure and from street noises outside. Fir-Tex products used for this purpose are:

Fir-Tex Building Board
Fir-Tex Thrift Wall Board
Fir-Tex Plaster Base Lath
Fir-Tex Tile
Fir-Tex Finish Plank

sizes

Type	Thickness	Width	Length
Building Board	½″	4′	6′,7′,8′,9′,10′,12′
Thrift Wall Board	⅜″	4′	6′,7′,8′,9′,10′,12′
Plaster Base Lath	½″, 1″	18″	48″
Tile	½″	12″ 12″ 16″ 16″	12″ 24″ 16″ 32″
Finish Plank	½″	12″ 16″	8′ 8′

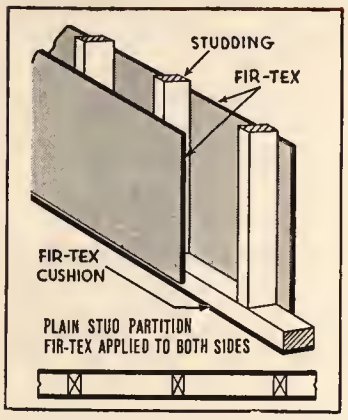
tests and properties

Sound Deadening Properties of Fir-Tex Products
Sound Transmission Tests
(Conducted by Paul E. Sabine, Riverbank Laboratories, Geneva, Ill.)

Frequency of Test Tone	Transmission Loss in Decibels			
	⅜″ thick	½″ thick	1″ thick	Fir-Tex 25/32″ Sheathing
129 cycles	24.5	23.5	26.7	24.5
258 cycles	26.0	26.7	25.2	29.7
517 cycles	32.3	32.5	34.3	34.0
1035 cycles	41.7	41.7	46.5	41.2
2070 cycles	47.0	44.5	44.7	40.7
Average	32.5	32.9	34.5	33.0

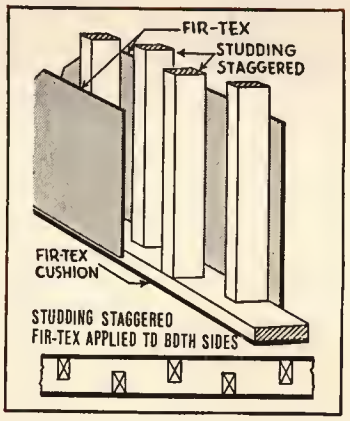
Note: Fir-Tex is much more resistant to transmission of sound than is wood lath and plaster. For unusual sound transmission problems, the following examples are submitted:

EXAMPLE 1



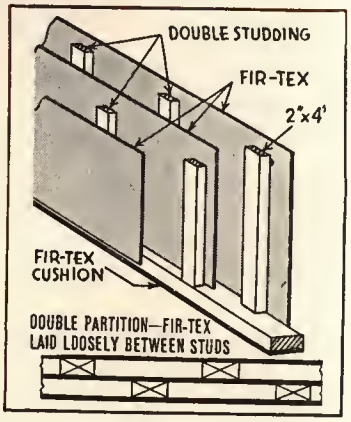
Example No. 1 shows normal position with studs spaced 16″ O.C., and with Fir-Tex applied to each side of the partition, either as Insulating Plaster Base Lath or as Interior Finish . . . Building Board, Finish Plank and Tile, etc. 2″ x 4″ top and bottom plates have been further cushioned by letting them rest on a narrow strip of ½″ Fir-Tex Building Board just the width of the plate.

EXAMPLE 2



Example No. 2 is standard staggered studding procedure. Top and bottom plates are cushioned 2″ x 6″ (or ripped to 4¼″ net if necessary to conserve space). Studs are 2″ x 4″ staggered, each row being 16″ O.C., thus requiring double the number of studs required in Example 1. This method is simple, inexpensive and very effective.

EXAMPLE 3



Example No. 3 goes still further. Top and bottom plates are cushioned 2″ x 6″ (or ripped to 4″ net if necessary to conserve space). Studs are 2″ x 2″ or 2″ x 4″ placed sideways and each row of studs 16″ O.C. In the space thus gained is placed loosely a sheet of Fir-Tex Building Board or Thrift Wall Board. Each wall is then Fir-Texed either with Insulating Plaster Base Lath or Fir-Tex Interior Finish.

acoustical correction

acoustical tile

Fir-Tex Acoustical Tile is the ideal material for the architect to use when he wishes to beautify and also control sound within a room. It is scientifically engineered to absorb reverberation and take the shock or impact out of noise.

This material should be applied only by experienced applicators who are thoroughly familiar with the use of acoustical tile.

forms and sizes

Thickness	Sizes	Density	Color
1″	12″ x 12″ and 16″ x 16″	Low	White

tests and properties

Tests Conducted by Paul E. Sabine, Riverbank Laboratories, Geneva, Ill.

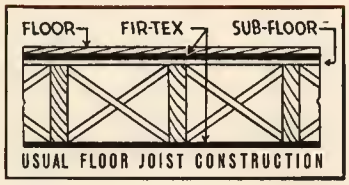
Test No.	Thickness	Density	Surface Treatment	*Mounting	Coefficient at 512 Cycles	**Noise Reduction Coefficient
27	1″	Low	Sprayed 1 coat	No. 2	.91	.80
45	1″	Low	Sprayed 1 coat	No. 1	.85	.75
54	¾″	Low	Sprayed 2 coat	No. 1	.81	.65
27	½″	Low	Sprayed 1 coat	No. 2	.82	.70
49	½″	Low	Sprayed 2 coat	No. 2	.77	.65
50	½″	Low	Sprayed 2 coat	No. 1	.52	.55

*No. 1 Mounting—Fir-Tex Tile cemented to plaster board. This mounting gives effectively the same coefficient as when the Tile is cemented directly to a wall or ceiling.

No. 2 Mounting—Fir-Tex Tile nailed to 1″ x 2″ furring, spaced 12″ o.c.

**The Noise Reduction coefficient is the average of the Coefficients at frequencies from 256 to 2048 cycles inclusive, given to the nearest 5%.

EXAMPLE 4



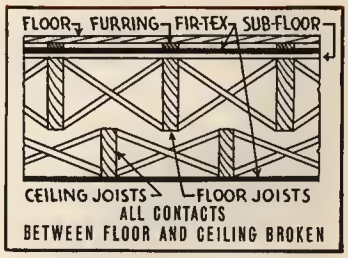
Example No. 4 shows normal joist construction in frame building where Fir-Tex Insulating Plaster Base Lath and plaster or Fir-Tex Interior Finish has been applied to the underneath side of the joists making finished ceiling for the room below. Top side of the joists has been treated in either of two ways:

1. 1st, wood sheathing sub flooring applied directly to joists and nailed securely; 2nd, Fir-Tex Building Board or Fir-Tex ⅜″ Thrift Wall Board has been laid on top of sub floor and tacked lightly in place; 3rd, finish floor has been laid over Fir-Tex and nailed securely through the Fir-Tex into the wood sheathing, using nails of sufficient length to penetrate ¾″ into the wood member.

2. 1st, Fir-Tex Building Board or Fir-Tex ⅜″ Thrift Wall Board has been laid over joists with edges centering over framing members and tacked lightly in place; 2nd, wood sheathing sub flooring has been laid over Fir-Tex and nailed securely through the Fir-Tex into the joists; 3rd, finish floor has been laid over the sub floor and nailed securely in place.

The first method is preferable in practically all cases.

EXAMPLE 5



Example No. 5 shows method commonly used to overcome unusual problems of sound transmission through floors. 1st, two sets of joists, each independently hung, are used. One set, employed as floor joists, is hung in the usual manner 16″ O.C. and bridged. The second set, employed as ceiling joists of the room below, is hung independently, staggered between the floor joists, and bridged. This construction of itself acts in the same manner as staggered studs and prevents sound being "telegraphed" from one room to the other. There must be no contact between the two sets of joists or bridging. The Fir-Tex treatment is as follows: Ceiling of room below—Fir-Tex is applied to underneath side of ceiling joists either as Fir-Tex Insulating Plaster Base Lath or as Fir-Tex Interior Finish. Floor of room above—1st, wood sheathing sub floor has been applied in the usual manner and nailed securely to the joists. 2nd, Fir-Tex Building Board or Thrift Wall Board in large sheets has been laid on top of the sub floor, sheets being spaced approximately ⅛″ apart at ends and sides, and tacked lightly in place. Next sound, dry wood furring strips or sleepers of uniform thickness have been laid 16″ O.C. on top of the Fir-Tex and nailed securely with nails spaced 48″ apart and reaching through the sub floor. Last, the finish floor is laid in the usual manner directly to the furring strips.

insulating plaster base lath

Fir-Tex Insulating Lath offers a remarkably economical and efficient way to prepare walls and ceilings for plaster and at the same time insulate against heat, cold and noise. Fir-Tex holds plaster like glue. It assures smooth, attractive walls for years to come, free from dirt-revealing plaster marks because dust-laden heat does not pass through. Plaster cracking is reduced to a minimum. Replaces ordinary non-insulating plaster bases.

tests and properties

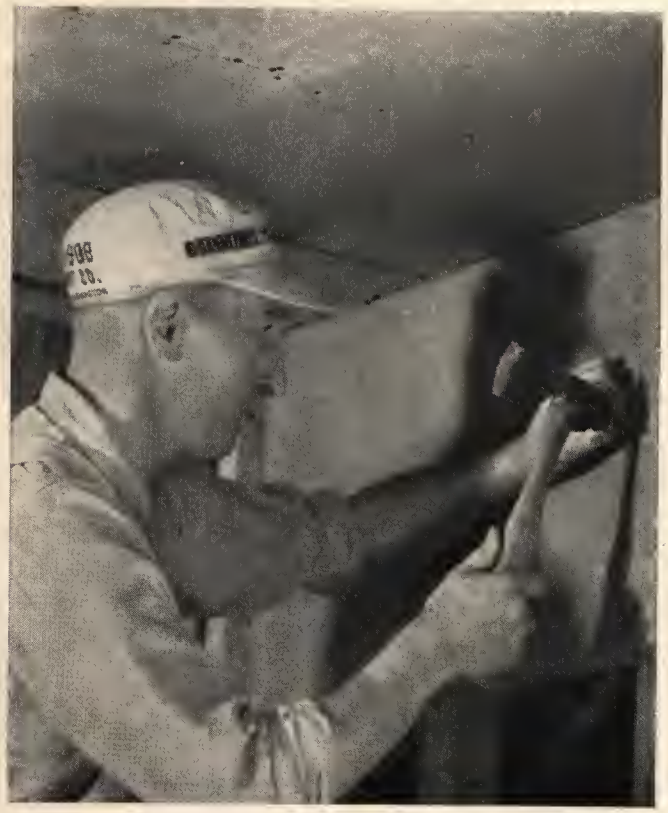
Tests by Robert W. Hunt Co., Chicago, Ill.
(All tests made on ½" thickness)

Plaster Bond	Thermal Conductivity	Tensile Strength	Transverse Strength	Nailing Strength	Resistance to moisture, 2 hrs. immersion at 70°F.
1032 lbs. per sq. ft.	½" 0.32	241 lbs. per sq. in.	15.78 lbs.	297 lbs. per lin. ft.	4.7% by volume

two types

Insulating Plaster Base Lath.
Standard: long edges, shiplapped; ends, square edged.
Optional: Long edges, Vee-joint; ends, square edged.

Insulating Plaster Base Lath (Asphalt Coated)
Same as regular Fir-Tex lath except back side is asphalt coated to form a vapor barrier.



Fir-Tex is the modern base for plaster.

size and thickness

Type	Thickness	Width	Length
Insulating Lath	½", 1"	18"	48"
Insulating Lath (Asphalt Coated)	½", 1"	18"	48"

master specifications

1. Work Included:

(NOTE:—Here List and locate accurately the wall and ceiling areas to be covered and specify thickness to be used on each area.)

2. Material: Plaster Base shall be Fir-Tex Insulating Lath (Fir-Tex Asphalt Coated Insulating Lath) (½") (1") thick, delivered to the job in the manufacturers' original packages. All packages shall be opened and the contents exposed to the air 24 hours before application.

3. Framing: Members shall be spaced accurately not to exceed 16" O.C.

4. Application: *Note:* In cold or damp weather, extra precautions shall be used. All doors and windows shall be in place and heating plant in operation before application. Plastering shall be commenced as soon as application is completed. Insulation continuity shall be maintained. Fir-Tex Insulating Lath shall be applied horizontally across framing members in a continuous line with all end joints staggered and centered on framing members.

When applying Fir-Tex Lath to walls, work should be commenced at

top of wall and progress downward. This automatically exposes the correct shiplapped joint. This instruction is not required with the Vee-joint type.

Fir-Tex Lath shall be spaced ⅜″ between ends and the long edges shall be brought to moderate contact only. The Fir-Tex Lath shall be fitted closely to all openings and to all intersecting surfaces, but in no case shall it be forced into place. Where cutting is necessary, the Fir-Tex Lath shall be sawed with an ordinary carpenter's saw, or scored with a sharp hatchet and broken along the scored line. Where piecing is necessary, use only strips of Fir-Tex.

5. **Nailing:** Nails shall be ordinary galvanized shingle nails with ¼″ heads, and of sufficient length to penetrate at least ¾″ into the framing members. The intermediate members shall be nailed first, using 5 nails to each member, and spacing nails approximately 4″ apart, and in each case driving center nail first. Edge nails shall be approximately ⅜″ from the edge. Proper nailing requires 3340 nails per thousand sq. ft. of Fir-Tex Lath. ½″ Lath requires 12¼ lb. of 4d. galv. shingle nails; 1″ Lath requires 16¼ lb. of 6d. galv. shingle nails per thousand sq. ft.

6. **Reinforcing:** At all interior and exterior corners, a standard metal reinforcing shall be installed over the Fir-Tex Lath, and secured to the framing members. At all exterior corners, metal corner beads shall be installed over the reinforcing and secured to the framing members.

plastering instructions

1. **The Fir-Tex Lath shall not be moistened.**

2. Use gypsum plaster.

3. The plaster shall be applied in standard three-coat job as follows:

   a. Scratch coat: Spread scratch coat very thin and even, pressing well into edges and joints. Allow to set hard before proceeding with the brown coat.

   b. Brown coat: (Combined thickness of brown and scratch coats shall be at least ⅜″.)

   c. Finish coat: This coat shall not exceed ⅛″ in thickness, making the total plaster thickness not less than ½″. This total thickness greatly prevents plaster defects due to normal building strain resulting from shrinkage, settlement and vibration.

4. Plaster shall be protected against freezings and dry-outs. Heat shall be provided in cold weather; in hot dry weather, openings shall be covered.

(NOTE:—Due to the moisture-resistant properties of Fir-Tex Lath, all plaster moisture must be carried off by the air within the room, which fact requires that adequate ventilation be provided.)

Plaster sticks to Fir-Tex Lath like glue. Lath marks are unknown—plaster cracking is reduced to a minimum.

integrally waterproofed sheathing

Fir-Tex Sheathing replaces ordinary wood sheathing and building paper. It seals the home against heat, cold and noise and provides walls of greater bracing strength than lumber. It insulates so well that fuel bills are cut drastically. Available in two types—large sheets and horizontal boards quickly and easily applied.

tests and properties

Tests by Robert W. Hunt Co., Chicago, Ill.

Thrust Pounds	Distortion in Inches (Figures for set in inches given brackets)		
	Wood Sheathed Partition	Fir-Tex ½-in. Bldg. Board Sheathed Partition	Fir-Tex 25/32-in. Asphalt Coated Sheathed Partition
200	0.05 (0.04)	0.01 (0.00)	0.00 (0.00)
1800	5.00 (3.41)	0.08 (0.04)	0.06 (0.00)

Thermal Conductivity	Tensile Strength	Transverse Strength	Nailing Strength	Resistance to Moisture 2 Hrs. Immersion at 70°F.
0.35	193.5 lbs. per sq. in.	37.24 lbs.	342 lbs. per lin. ft.	1.58% by volume

two types

Large sheet type
Horizontal type

sizes

Type	Width	Length
Large sheet	4′	8′, 8½′, 9′, 10′, 12′
Horizontal	2′	8′

master specifications

1. Framing, application, etc.: When Fir-Tex is used as an exterior finish, the procedure in the main shall be as specified for sheathing application with the following exceptions:
   a. Nails shall be galvanized
   b. Due care shall be exercised in the matter of spacing and application so that the battens covering joints shall be symmetrical
   c. Sheathing shall be of sufficient length so that no splice be used on any height 12′ or less.
   d. Painting shall be done before application of battens.
   e. Battens and wood-trim shall be applied with nails of sufficient length to penetrate at least 1″ into the wood member.

exterior wall finish

Fir-Tex Sheathing is admirably adapted for use as an exposed exterior finish over frame construction in such cases as summer cabins, fishing and hunting lodges, dwellings or large construction projects for temporary use.

two types

Large sheet type
Horizontal type

sizes

Type	Width	Length
Large sheet	4′	8′, 8½′, 9′, 9½′, 10′, 12′
Horizontal	2′	8′

master specifications

1. **Work Included:**

(NOTE:—Here list and locate accurately the wall and other areas to be covered.)

2. **Material:**

Sheathing shall be (Fir-Tex horizontal type) (Fir-Tex large sheet type). Master specifications covering both types of Fir-Tex Sheathing are identical with the following exceptions which apply to horizontal type only—

(a) Shall be applied at right angles to framing members, and with grooved edge down, each 2′ x 8′ board spanning seven studs when 16″ O.C. End joints shall be staggered and centered over framing members.

(b) It is unnecessary to provide headers or cross members to support long edges of horizontal type sheathing.

(c) End joints shall be spaced approximately ⅛″ apart. Side joints shall be brought to moderate contact.

(d) Nailing shall be in accordance with instructions for 4′ width sheets. This will require 43 nails for each board or 2687 nails (25 lbs. 8d. com.) for each 1000 sq. ft. of board.

3. **Framing:** Members shall be spaced accurately at not to exceed 16″ O.C. 2″ x 4″ headers or cross members shall be installed as may be necessary, so that every end and edge shall rest on a nailing base.

4. **Application:** Insulation continuity shall be maintained, and all joints shall center over framing members. The Sheathing shall be applied with the length paralleling the framing members. Boards shall be of sufficient length to completely span between sills and plates or other framing members. The boards shall be spaced approximately ⅛″ apart at sides and ends, but brought to snug contact with door and window frames. NEVER shall the boards be forced into place.

5. **Nails:** 8d. common nails shall be used.

6. **Nailing:** The intermediate members shall be nailed first, spacing nails 6″ apart. The exterior members shall then be nailed spacing nails 3″ apart and ⅜″ from the edge of the board. This will require 3125 nails (29½ lb. 8d. common) for each 1000 sq. ft. of board. All nails shall be driven well home.

7. Flashings of the usual type shall be installed in the usual manner.

8. **Exterior Finishes:**

(NOTE:—Fir-Tex is not a nailing base.)

a. Wood siding shall be applied directly over the Sheathing, nailing through to the studs and using nails of sufficient length to penetrate 1″ into the wood. All joints shall butt over the center of framing members.

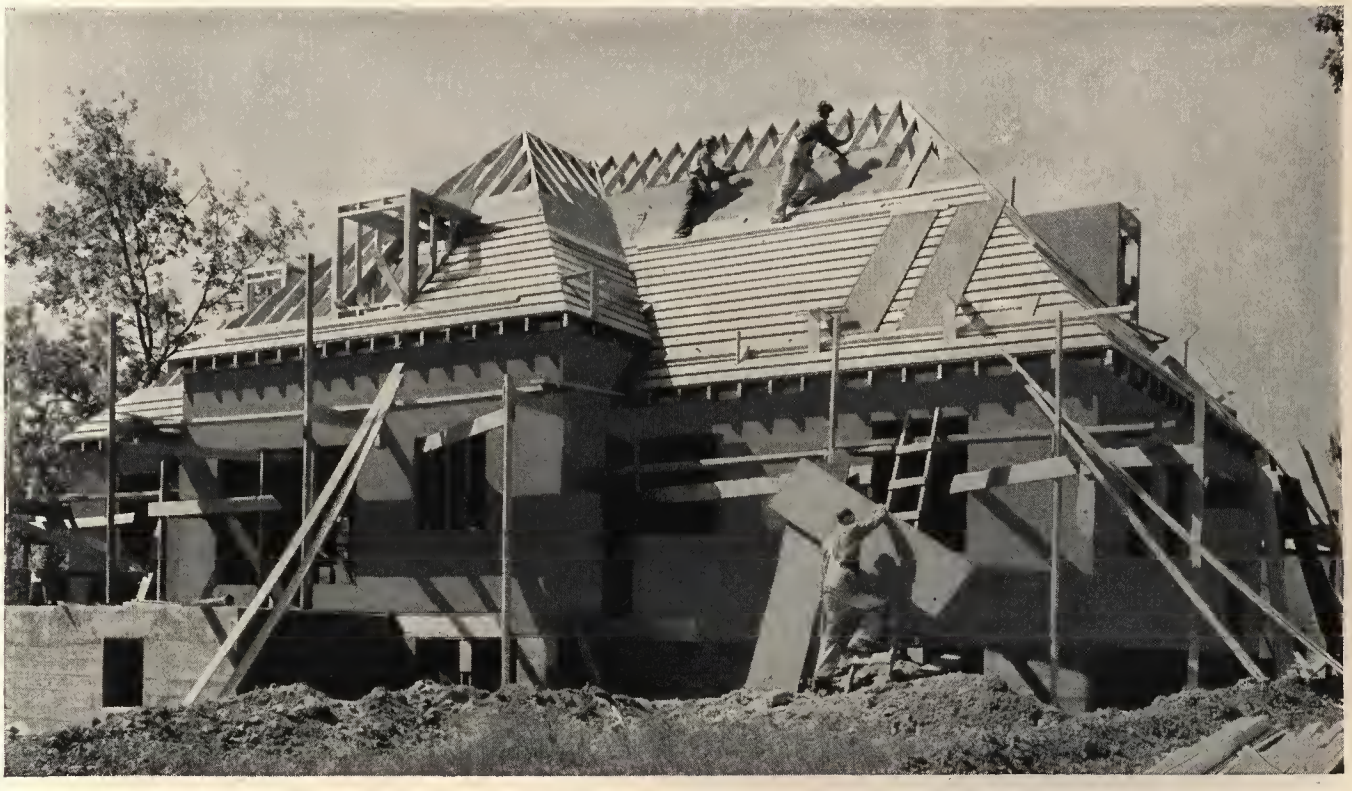
b. Shingles or shakes: Furring strips 1″ x 2″ shall be securely installed horizontally over the Sheathing, and spaced to fit the shingles or shakes, using nails of sufficient length to penetrate into the wood member at least 1″. The shingles or shakes shall then be nailed to the furring strips.

c. Brick or Stone Veneer: Metal ties or anchors of the usual type, properly spaced, shall be nailed through the Fix-Tex into the wood member, using nails of sufficient length to penetrate at least 1″ into the stud. The masonry veneer shall be laid in the usual manner, allowing not less than ½″ space between the face of the Fir-Tex and the back of the veneer.

(NOTE:—It is not necessary to use building paper under any of the above exteriors—siding, shakes, masonry.)

d. Exterior Stucco: All Fir-Tex surfaces beneath exterior stucco shall be covered with a continuous layer of asphalt-coated waterproof paper with all edges lapped. The stucco reinforcing metal shall be applied with a furring nail of sufficient length to penetrate 1″ into the wood member, and which will hold the metal tight and accurately in a position approximately ¼″ from the face of the Sheathing, permitting the mortar to fill the space between the metal and the Fir-Tex.

(NOTE:—Wood furring strips are not recommended because of their tendency to expand and crack the stucco when they become wet during the application of the stucco.)



Fir-Tex Sheathing, used instead of ordinary wood sheathing, seals the home from heat, cold, wind, dust and noise.

refrigeration insulation blocks

Insulation *has* to be right when used for commercial refrigeration. Here, insulation is more than a matter of comfort and of lowered fuel bills, important though these are. In commercial refrigeration and cold storage, a definite degree of cold must be maintained, or valuable stocks of perishables will be lost.

The dependability of Fir-Tex Refrigeration Insulation Blocks in maintaining minimum temperature at lowest cost has led to its selection by a significant number of manufacturers of all kinds of commercial and domestic refrigerators. Makers of railroad and truck refrigeration cars specify Fir-Tex again and again. It possesses insulation qualities of super-efficiency, is resistant to growth of any fungus and mold, and has very low water absorption.

Fir-Tex is a most effective and economical insulation material available for cold storage warehouses, breweries, meat and creamery cookers and air conditioning plants.

sizes

Thickness	Size
1″, 1½″, 2″ and 3″	12″ x 36″ 24″ x 48″

tests and properties

All Tests Made on 1″ Thickness

Meets All Requirements of U.S. Federal Specifications LLL-F321a and Commercial Standard CS42-35

Thermal Conductivity	Vapor Absorption	Absorption by Capillarity	Resistance to Moisture 2 Hrs. Immersion at 70° F.	Compression	Linear Expansion	Mold and Fungus	Odor Emission
0.280	1.11% by volume	2.43% by volume	3.4% by volume	90.3% of original thickness	⅛ of 1%	More than ordinarily immune	No odor emission

master specifications

(NOTE:—No single specification can be adopted for general use. Each job must be analyzed before specific thicknesses can be recommended, due to different types of construction and thickness of the walls in the building in which Fir-Tex is to be used. For specific recommendations, write to the Engineering Dept., Fir-Tex Insulating Board Co., Equitable Bldg., Portland, Oregon. Give all the particulars in your possession, such as: building already constructed, or to be constructed; frame, tile, brick or concrete; number of stories; size, location and exposure of room or rooms in building, temperatures to be maintained; size and kind of ice machines.)

CONCRETE CONSTRUCTION

1. **Work Included:**

(NOTE:—Here list and locate accurately the wall, floor and ceiling areas to be insulated, specifying in each instance the total thickness of Fir-Tex Insulation to be used and the number of layers in which it shall be applied.)

2. **Material:** Insulation shall be Fir-Tex Refrigeration Insulation Blocks (here specify) inches in thickness, and (12″ x 36″) (24″ x 48″) as best adapted to the particular area to be insulated. Asphalt shall be an approved grade of odorless asphalt having melting point of between (160°) and (200°) F.

3. **Cutting and Fitting:** All cutting and fitting shall be done in a neat workmanlike manner. Cutting shall be done with a power saw—or sharp, fine tooth saw, using rapid strokes and a minimum of pressure.

4. **Base:** All surfaces shall be thoroughly dry, smooth, clean, and free from grease or paint. All rough surfaces and hollows shall be trued up with waterproofed Portland Cement which shall be allowed to dry thoroughly before proceeding.

(NOTE:—The above is for use in existing concrete buildings.) When the architect is supervising the erection of the building as well as the insulation, he can control the entire problem. In such cases he will find the following suggestions helpful:

a. All walls, floors and ceilings of area which is to be insulated, shall be poured with integrally waterproofed concrete.

b. All surface areas shall be finished off smoothly to present an even surface for the application of Fir-Tex.

c. In cases where the soil is other than sand and gravel, he will find the following good practice for the floor slab:
(1) Spread 4″ of cinders or gravel over the area to be covered.

(2) Pour 2" of integrally waterproofed concrete over cinders or gravel.

d. Be sure that all concrete is cured and thoroughly dry before permitting next step.

5. Application Floor:

a. Entire floor area shall be sprayed with priming coat of cut-back asphalt (asphalt emulsion diluted with water).

b. Floor area shall then be flooded with smoking hot asphalt, using 35 lbs. asphalt per 100 sq. ft. Only sufficient area to provide complete embedment of each Fir-Tex sheet being mopped at one time.

c. Fir-Tex sheet shall then be firmly embedded in the hot asphalt, spacing sheets ⅛" apart. Asphalt shall be thick enough on floor to squeeze up through joints.

d. When entire floor area has been covered with Fir-Tex, successive layers shall be applied in the same manner, each time flooding the exposed area of the preceding layer with 35 lbs. per 100 sq. ft. smoking hot asphalt, and then embedding Fir-Tex sheet, making sure that each layer be staggered to break all joints of preceding layer.

e. When final layer has been embedded in the hot asphalt of preceding layer, all open joints shall be filled or calked with ground-up Fir-Tex fibre mixed with asphalt. Exposed area of this top layer shall then be flooded with two successive coats of smoking hot asphalt, using 25 lbs. of asphalt per 100 sq. ft. to each coat. When top layer has cooled, it shall be dusted with Portland Cement.

f. Concrete finish floor: Three inches of integrally waterproofed cement shall next be poured on top of the finished Fir-Tex floor. This concrete shall be reinforced with (here specify gauge, size of mesh etc.) metal reinforcing, care being taken that reinforcing be held at least 1" off the floor.

(NOTE:—This may be accomplished either through using self-furring mesh or by the applicator digging into the concrete (as it is poured) with the claws of his hammer and lifting the mesh until it is suspended in the mass of concrete.)

6. Application—Walls and Ceiling:

a. Entire wall and ceiling area shall be sprayed with priming coat of cut-back asphalt (asphalt emulsion diluted with water).

b. Using ice picks to hold the Fir-Tex, totally submerge in hot asphalt until both surface and all edges are thoroughly coated. Then lift the Fir-Tex and apply to wall or ceiling. Each sheet shall be held firmly in place until asphalt has cooled enough to support the sheet. Sheets shall be spaced ⅛" apart at sides and ends. Extreme care should be exercised that no air spaces form between wall and Fir-Tex or between successive layers of Fir-Tex. This is accomplished by sliding Fir-Tex into place.

Start at top of wall and work down to avoid drippings of asphalt collecting on surfaces. Remove any drippings which may collect on concrete to avoid air spaces between Fir-Tex and concrete.

c. Succeeding layers of Fir-Tex shall then be applied in the same manner, each sheet being dipped in the smoking hot asphalt and held in place by butcher skewers or galvanized nails. Sheets shall be spaced ⅛" apart and staggered to break all joints of preceding layer.

d. Exposed surface of last layer then shall be sprayed with smoking hot asphalt, using 25 lbs. of asphalt per 100 sq. ft.

7. Surface Finishes:

All exposed wall and ceiling surfaces shall be given a finish of not less than ⅛" of an approved asphalt mastic or not less than ½" of integrally waterproofed Portland Cement plaster applied in two coats and reinforced with light wire mesh. External corners shall be protected with metal corner beads.

Sub-zero temperatures are maintained by Fir-Tex Refrigeration insulation.

flat decked roofs

Fir-Tex Roof Insulation Board is a low density board especially manufactured for use on flat decked roofs of wood, steel, concrete, structural gypsum or unit tile. Because of its exceptional insulating properties, it is widely used on large industrial plants, schools, commercial, municipal and federal buildings.

sizes

Type	Thickness	Sizes
Square edges	½", 1", 1½", 2", and 3"	24" x 48"

tests and properties

Tests by Robert W. Hunt Co., Chicago, Ill.

All Tests Made on 1" Thickness

Meets All Requirements of U.S. Federal Specifications LLL-F-321a and Commercial Standard CS42-35

Thermal Conductivity	Vapor Absorption	Absorption by Capillarity	Resistance to Moisture 2 Hrs. Immersion at 70°F.	Compression	Linear Expansion	Mold and Fungus	Odor Emission
0.280	1.11% by volume	2.43% by volume	3.4% by volume	90.3% of original thickness	⅛ of 1%	More than ordinarily immune	No odor emission

master specifications

1. Work Included:

(NOTE:—Here list and locate accurately the roof areas to be covered. If different thicknesses are required on some of the areas, list and locate each area separately.)

2. Insulation Material: Roof Insulation shall be (Fir-Tex Roof Insulation) (½") (1") (1½") (2") thick, (24" x 48" with square edges) and laid in (one) (two) layer(s).

3. Wood Nailing Strips:

(NOTE:—Fir-Tex is not a nailing base. Therefore, wood strips, securely nailed or bolted, shall be provided to serve as adequate nailing base for all flashings, metal work, etc.) (Architect will here insert his instructions that this work be done before roofing crew comes on the job. This work is usually done by the general contractor.)

4. General: All Fir-Tex shall be kept dry before, during, and after its application. Only as much Fir-Tex shall be applied in any one day as will be covered by the finished roofing that same day. Fir-Tex sheets shall be laid in parallel courses, staggered to break joints, and shall be spaced ⅛" apart at sides and ends. When applied in two layers, the Fir-Tex sheets in the second layer shall be laid parallel with those of the first layer and staggered to break all joints. Where the roof meets vertical surfaces such as parapets, etc., the Fir-Tex sheets shall be cut and fitted snugly in a neat workmanlike manner, but never forced into place.

5. Roof Deck: The surface of the roof deck shall be thoroughly dry and shall be broomed clean and free from dirt and loose material. All loose or springy boards shall be securely nailed before Fir-Tex is applied.

6. Building Paper:

The entire roof area shall be covered with (rosin sized building paper) (6 lb. coated felt), lapped half, making two plies. Nail sufficiently to hold in place until the Fir-Tex is laid over it.

6A. (alternate) Vapor Cut-off:

(NOTE:—Use this clause only where high humidities are maintained and prevention of condensation is necessary.)

The entire roof area shall be covered with asphalt prepared roofing 34 lbs. per square and having one side coated. Lay coated side down and lapped half, making two plies. Nail the back edge of each sheet with tin capped, galvanized, barbed roofing nails spaced 12" O.C. All laps shall be mopped back 12" with hot asphalt. Do not mop over this membrane until just prior to the laying of the Fir-Tex.

7. Application of Fir-Tex Roof Insulation:

a. When laid in one layer over building paper—

(1) Nails shall be galvanized roofing nails with 5/16" heads and of sufficient length to pass through Fir-Tex and penetrate at least

1″ into the roof deck, but in no case shall the nail penetrate entirely through the roof deck.

(2) Nailing: Each Fir-Tex sheet shall be secured in place by nails spaced 12″ apart along each edge and staggered along the longitudinal center line.

(3) Mopping: After Fir-Tex has been nailed in place, the exposed surface shall be mopped with smoking hot asphalt, using 35 lbs. of asphalt to 100 sq. ft., and the first layer of roofing felt shall be embedded in the asphalt while hot.

b. When laid in two layers—

(1) Nails shall be galvanized roofing nails with 5/16″ heads and of sufficient length to pass through both layers of Fir-Tex and penetrate at least 1″ into the roof deck, but in no case shall the nail penetrate entirely through the roof deck.

(2) Nailing shall be through the top layer only.

c. When laid in one layer over Vapor Cut-off—

The exposed area shall be mopped liberally with hot asphalt, only sufficient area to provide complete embedment of each Fir-Tex sheet being mopped at one time. The Fir-Tex sheet shall then be embedded firmly in the mopping while still hot.

d. When laid in two layers over Vapor Cut-off—

(1) First layer of Fir-Tex shall be applied as in preceding paragraph.

(2) Exposed area of applied Fir-Tex shall then be mopped as before and second layer embedded.

e. Water Cut-offs—

(NOTE:—Advocated to prevent the spread of water beyond predetermined isolated areas in the event of leaks due to damage to the roofing or defective flashings, parapet walls, copings, etc.)

The insulation, whether laid in one (1) or two (2) layers shall be cut to the line designated for the water cut-off.

Water cut-offs shall consist of strips of asphalt saturated roofing felt 8″ to 10″ wide stuck in bitumen to the roof, carried over the edge of the insulation, and turned over and stuck in bitumen to the top surface of the insulation.

They shall be located approximately 24″ from and parallel to all vertical walls, such as parapets, penthouses, skylight curbs, etc., and around all leader heads, soil pipes, vents, ventilators, etc. The body or field of the roof shall be divided into rectangular areas approximately 30′ on a side, each area isolated with a water cut-off. Insert a water cut-off surrounding each day's work if the stop is not made at the designated water cut-off.

At least one (1) ply of the finished roofing shall be mopped to the water cut-off each night.

Specifications for Work Included, Insulation Material, and Wood Nailing Strips, is the same as for insulation of flat decked roofs of wood under built-up roofing.

4. Roof Deck:

a. General: The surface of the roof deck shall be thoroughly dry and broomed clean, free from dirt and loose material and all rough spots shall be removed. Where deck is of tile construction, the joints of all tiles shall be properly pointed up.

b. Application:

(1) Priming the Deck: Deck shall be thoroughly primed with cut-back asphalt (asphalt emulsion diluted with water).

(2) Mopping the Deck: Deck shall be mopped with smoking hot asphalt, using 35 lbs. of asphalt to 100 sq. ft.

(NOTE:—In tile construction, spot or strip mop the individual tiles or units.)

Only sufficient area to provide complete embedment of each Fir-Tex sheet shall be mopped at one time. Each Fir-Tex sheet shall then be firmly embedded in the hot asphalt mopping. In the case of two layer insulation, the first layer shall be mopped in the same manner as the deck and the second layer then embedded in the hot mopping.

Application of Fir-Tex Roof Insulation, Coca Cola Plant, Portland, Oregon

pitched roofs of frame dwellings

The following specifications cover the normal pitched roof of frame building under wood shingles. If rigid asbestos shingles, slate or tile roofing is used, a continuous course of good quality waterproof felt, well lapped, shall be applied over the Fir-Tex sheathing and under the wood strips. If composition roofing or asphalt shingles are used, a solid base of D & M wood sheathing shall be substituted for the wood strips and the waterproof felt applied over the sheathing.

two types

Large Sheet type sheathing
Horizontal sheathing

sizes

Type	Width	Length
Large sheet	4′	8′, 8½′, 9′, 10′, 12′
Horizontal	2′	8′

tests and properties

Tests by Robert W. Hunt Co., Chicago, Ill.

Thrust Pounds	Distortion in Inches (Figures for set in inches given in brackets)		
	Wood Sheathed Partition	Fir-Tex ½-in. Building Board Sheathed Partition	Fir-Tex 25/32-in. Asphalt Coated Partition
200	0.05 (0.04)	0.01 (0.00)	0.00 (0.00)
1800	5.00 (3.41)	0.08 (0.04)	0.06 (0.00)

Thermal Conductivity	Tensile Strength	Transverse Strength	Nailing Strength	Resistance to Moisture 2 Hrs. Immersion at 70° F.
0.35	193.5 lbs. per sq. in.	37.24 lbs.	342 lbs. per lin. ft.	1.58% by volume

master specifications

1. **Work Included:** (Here list and locate accurately the roof areas to be insulated.)

2. **Insulation:** Shall be Fir-Tex Sheathing (Horizontal Type) (Large Sheet Type) or (½″ Building Board) (1″ Building Board).

3. **Framing:** Rafters shall be accurately spaced (specify) inches on centers. When large sheet type sheathing or building board is specified, additional 2″ x 4″ headers or cross members shall be installed as may be required to serve as nailing base for all ends of Fir-Tex sheets.

(NOTE:—In many sections of the country rafters are spaced 24″ O.C. even though studs, joists, etc. be spaced 16″ O.C.)

4. **Application:** Large Fir-Tex sheets of lengths best adapted to cover area with fewest possible joints shall be applied directly to top of rafters with length paralleling the framing members and with all side and end joints centering over wood members, and nailed sufficiently to hold in place until wood roof sheathing or shingle lath has been applied. Additional nailing members shall be applied wherever necessary. When horizontal Fir-Tex Sheathing is specified, it shall be applied at right angles to framing members and with grooved edge down, each 2′ x 8′ board spanning 7 rafters when 16″ O.C. or 5 rafters when 24″ O.C. No headers are required.

5. **Shingle Lath:** Wood strips (specify) x (specify) inches of (specify) grade shall be applied directly over the Fir-Tex, spaced (inches O.C.) (to conform with shingle units), and nailed securely through the Fir-Tex and into the wood members with nails of sufficient length to penetrate at least 1" into the wood members. All ends of Fir-Tex sheets shall be nailed securely to cross member over which they center, this nailing to be done through the shingle lath when lath spacing coincides with Fir-Tex joint, or otherwise directly through the Fir-Tex.

6. **Shingles:** Shingles shall be applied directly to shingle lath in the usual manner.

interior walls and ceilings

Fir-Tex Ivrykote and Colorkote Interior Finish is factory finished and presized, ready for use when delivered on the job. The glazed washable surface in choice of attractive non-fading colors requires no further color treatment and will endure for a long time. When it does require redecorating, the following suggestions will be helpful.

Water-Thinned Paints: The surface of Fir-Tex Interior Finish lends itself admirably to application of water-thinned paints.

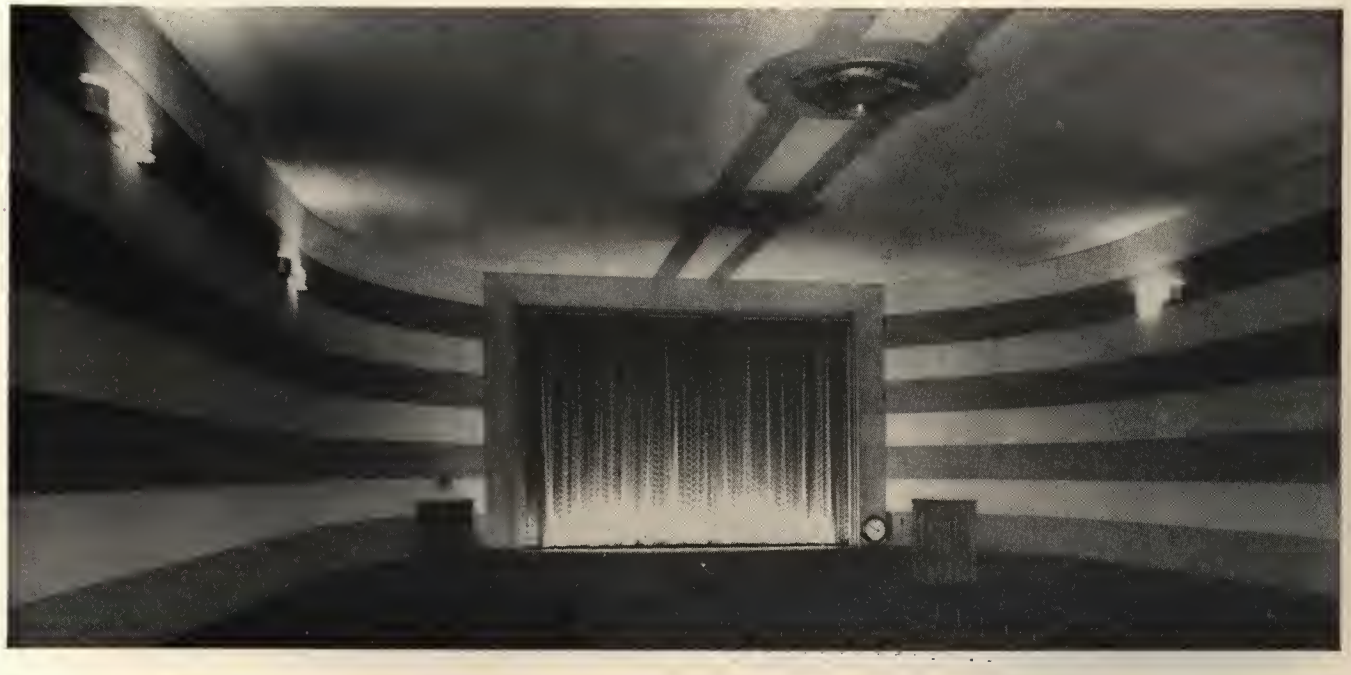
These paints will be found very inexpensive and their coverage is highly satisfactory. One advantage is that many successive coats may be applied when redecorating, without chipping or scaling.

Oil or Varnish Paints: We suggest that oil and varnish paints be used only when some special effect is desired, in which case, an additional sizing is required. Under all normal conditions water-thinned paints will produce much more pleasing results as well as being less expensive.

Stencils: Many interiors can be toned up and made more attractive by utilizing stencils or decals. Pleasing patterns will be found in local paint, wall paper and department stores.

Nail Heads: When painting or redecorating Fir-Tex Interior Finish, first make sure that all nails are driven well home, but not with nail set. Then treat each nail head and hole with prepared spachtling compound using an ordinary putty knife. This material is pressed well into the crevices, smoothed off with putty knife, and permitted to dry thoroughly. The surface should be sanded level and true, using No. 1 sandpaper on wood block.

(CAUTION:—You will note that this treatment of nail heads is to be used *only* when the Fir-Tex Interior Finish is to be painted or covered and not when it is to be used in its natural finish.)



This treatment of Fir-Tex in a theatre is equally effective for bowling alleys, skating rinks and other commercial buildings.

This Fir-Tex Tempered Hardboard blends perfectly with Fir-Tex Colorkote Panels above

Fir-Tex Hardboard products are manufactured from all-wood fibres and are especially designed to withstand hard use and exposure to moisture. They have no insulating value and should not be confused with Fir-Tex Insulating Board Products.

Fir-Tex hardboard (untempered)

Fir-Tex Hardboard (untempered) is a knotless, grainless board having a variety of uses in construction, such as wainscot, counter fronts, etc. Its large sized sheets, 4′ wide and up to 12′ in length, are easy to apply with a minimum of joints.

Fir-Tex tempered hardboard

Fir-Tex Tempered Hardboard is obtained by subjecting Fir-Tex Hardboard (untempered) to a special treatment of liquids and heat, in much the same manner as steel is tempered. This treatment results in a stronger, harder, tougher product with greater resistance to abrasion and moisture absorption. This one product is available in black as well as in standard brown.

Fir-Tex tempered hardboard tile

Fir-Tex Tempered Hardboard Tile is Fir-Tex Tempered Hardboard into which scoring has been pressed, simulating 4″ square tile. It is practical and decorative in kitchens, breakfast nooks and bathrooms. Available in brown only.

Fir-Tex hardwal

A sturdy board of moderate cost, 3/16″ thick.

Fir-Tex exposition flooring

Fir-Tex Exposition Flooring is a high density, hard surfaced board available in sizes 11¾″ x 23½″ and 23½″ x 47″. All face edges lightly chamfered. Especially adapted for floors subjected to heavy duty service.

(NOTE—Consult your paint dealer for information on primers, sealers, paints and lacquers suitable for use on Fir-Tex Hardboard Products.)

FIR-TEX INSULATING BOARD COMPANY

GENERAL OFFICES: EQUITABLE BUILDING, PORTLAND, OREGON **PLANT: ST. HELENS, OREGON**

Sales representatives:

FIR-TEX OF COLORADO
4501 Wynkoop Street
Denver, Colorado

FIR-TEX OF ILLINOIS
205 W. Wacker Drive
Chicago 6, Illinois

FIR-TEX OF IOWA-NEBRASKA
1304 W.O.W. Building
Omaha 2, Nebraska

FIR-TEX OF MICHIGAN
550 Oakdale S.E.
Grand Rapids 7, Michigan

FIR-TEX OF NORTHERN CALIFORNIA
214 Front St.
San Francisco 4, California

FIR-TEX OF SOUTHERN CALIFORNIA
812 E. 59th Street
Los Angeles 1, California

FIR-TEX OF WASHINGTON, INC.
2462 First Avenue, S.
Seattle 4, Washington

FIR-TEX OF UTAH
3rd West and 1st North
Salt Lake City 11, Utah

FIR-TEX OF MINNESOTA, INC.
331 First Federal Building
St. Paul, Minnesota

FIR-TEX OF MISSOURI
Roosevelt Building
St. Louis 8, Missouri

FIR-TEX OF MISSOURI-KANSAS
1805 Grand Avenue
Kansas City 8, Missouri

FIR-TEX WESTERN, LTD.
11415—86th Street
Edmonton, Canada

513 Metropolitan Bldg.
Vancouver, B.C.

S. C. HOOPER
517 Sinclair Building
Fort Worth 2, Texas

T. G. DECKER
P.O. Box 1865
Phoenix, Arizona

Flintkote

INSULATION PRODUCTS

STRUCTURAL INSULATION BOARD PRODUCTS

Flintkote manufactures a complete line of insulation baard products at its modern plant located at Meridian, Mississippi. They are made from fibers of native timber chiefly selected from the Flintkote forests adjoining the plant. Fram forest to finished praduct, their design and manufacture are rigidly controlled by Flintkote's own research and development laboratories and skilled technicians.

These products represent the highest develapment of this type of material for structural, decarative and insulatian purposes. They may be recommended with the assurance that each has been subjected to intensive tests and will give satisfactian when used either for new construction or remodeling.

Flintkote Structural and Decorative Insulation Board Products are known and sold by leading distributors thraughaut the country.

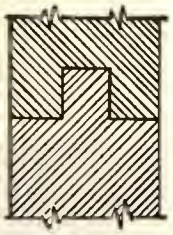
25/32" STALWART* INSULATION SHEATHING BOARD

Applied in large sheets 4 ft. wide by 8 to 12 ft. long, Flintkote Stalwart Insulation Sheathing provides two ta three times more insulation value than ardinary waad sheathing and makes a wall actually stronger and mare resistant to strains and stresses than horizontally applied wood sheathing.

Stalwart Insulatian Sheathing has special asphalt treatment far increased strength and added protection against moisture absorption.

In the handy 2 x 8 ft. size, the horizontal edges of Flintkote Stalwart Insulation Sheathing are tangue-and-graoved to make the wall tighter. No hales, cracks or open jaints allow infiltratian of air.

In many localities Stalwart Insulatian Sheathing applied on the studs costs little if any more than waad sheathing, since there is less waste and application casts are lower.



T AND G JOINT ON STALWART 2' x 8' SHEATHING.

INSULATION LATH

Flintkote Insulation Lath is a dual purpose product markedly superior to the material it replaces. It is an ideal plaster base and insulation cambined.

V-W JOINT ON INSULATION LATH

Use of Flintkote Insulatian Lath reduces redecorating casts by preventing the appearance of lath marks. Less plaster is required in the scratch coat because of the elimination of keys and droppings between the studs. But care should be taken that all surfaces receive a full half-inch of plaster.

The V-W joint on the long edges of Flintkate Insulation Lath provides uninterrupted insulation throughout walls and ceilings. Resilient Insulation Lath absorbs shock and mavement of framing and thus reduces the possibility of cracking of the plaster. It provides a much stronger plaster bond than does ardinary waad lath.

The convenient size of Flintkote Insulation Lath, 18 x 48 in., makes application rapid, easy and economical. Insulation Lath is also available with a layer of asphalt on the stud side, for use where extreme outside temperatures are prevalent and interiors have high humidity.

BUILDING BOARD

Flintkote Building Board is an economical insulating and structural board 4 ft. wide, available in a number of lengths. One surface is factory-finished in ivory white makes an excellent light-reflecting finish without further treatment or can be readily painted withaut priming.

Flintkote Building Board is widely used for remodeling basement game raoms and attic bedraams and for interior finish in new canstruction or madernization in summer cattages and cabins, and farm, garage and other utility buildings of all types.

PRODUCT DATA—FLINTKOTE STRUCTURAL INSULATION BOARD PRODUCTS**

Product	Size	Thickness	Color	Joint
Stalwart Insulatian Sheathing Board	2' x 8' 4' x 8', 8½', 9', 9½', 10' and 12'	25/32" 25/32"	Dark Brown Dark Brown	Tongue & Graove Square Edge
Asphalt Coated Sheathing	4' x 8', 8½', 9', 9½', 10' and 12'	½"	Asphalt Caated	Square Edge
Insulatian Lath	18" x 48"	½"	Natural or Asphalt Caated Stud Side	V-W
Building Board	4' x 6', 7', 8', 9', 10' and 12'	½"	Ivary White	Square Edge
Thriftex Wallboard	4' x 6', 7', 8', 9', 10' and 12'	Wallboard Thickness	Ivory White	Square Edge
Roof Insulation	23" x 47"	½", 1", 1½" and 2"	Natural	Square Edge

* T. M. Reg. U. S. Pat. Off.

** Subject to change without notice.

THRIFTEX WALLBOARD

Thriftex is an economical, general utility board for every wallboard use. It is light in weight yet strong and easy to handle. It is furnished with one side natural and one side factory-finished in an ivory white. Thriftex is especially suited to partitions, window displays, exhibit work, temporary structures and other typical wallboard uses.

ROOF INSULATION

Flintkote Roof Insulation is a Flintkote Insulation Board Product especially fabricated for use as insulation under built-up roofing. Laid over wood, concrete, gypsum or steel decks, Flintkote Roof Insulation not only provides insulation but also serves as a base for the built-up roof covering. It is available in one standard, convenient and easily handled size, 23 x 47 in., and in all commercial thicknesses. See "Product Data" on opposite page.

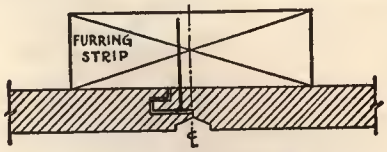
DECORATIVE INSULATION BOARD PRODUCTS

Flintkote Decorative Insulation Board Products designed for interior finish, including Decoblend and Colored Tile and Plank, like Flintkote Building Board do *four* big jobs . . . build, decorate, insulate and reduce noise . . . at *one* low cost.

In shape as well as in color Flintkote Decorative Insulation Board Products are readily adaptable to many different designs. If vertical lines are required to give the appearance of greater ceiling height, or horizontal lines for the opposite effect, there is a Flintkote Decorative Insulation Board Product to fit the need. Ashlar, diagonal, basket weave and other patterns may be quickly worked out with these versatile materials. Color variations, too, are possible by using combinations of different colors.

All sizes in Flintkote Decoblend and Colored Tile and Plank are equipped with the Flintkote Blind Nailing Joint, which conceals all nailheads and provides unmarred wall and ceiling finishes.

The wide field of use for Flintkote Decorative Insulation Board Products includes basement game rooms, attic bedrooms, libraries, dining rooms and living rooms in private houses and interiors of churches, schools, restaurants, stores, theatres, offices, recreation halls and other commercial structures.



DECOBLEND TILE AND PLANK

Flintkote Decoblend is a pleasing, factory-packed blend of coral tones which harmonizes with almost any color or style of decoration. Both Insulation Tile and Plank in a wide variety of sizes are available in Decoblend. The entire wall and ceiling areas of a room may be finished in Decoblend with effective results, or Decoblend may be used in combination with other colors of Flintkote Insulation Tile and Plank or with other types of materials.

COLORED TILE AND PLANK

Flintkote Insulation Tile and Plank in the same sizes as in Decoblend are also furnished in Green, Buff, and Ivory White. These colors harmonize with each other as well as with Flintkote Decoblend, and many pleasing decorative color schemes may be achieved by using combinations of the several colors.

PRODUCT DATA—FLINTKOTE DECORATIVE INSULATION BOARD PRODUCTS*

Product	Thickness	Sizes	Package	Colors
Insulation Tile	½"	12" x 12", 16" x 16", 16" x 32"	64 sq. ft. per carton	Ivory White Green Buff Decoblend (a pleasing blend of coral tones)
Insulation Plank	½"	Widths: 8", 10", 12" and 16" Lengths, 8', 10' and 12'	12 pieces per bundle	

* Subject to change without notice.

HARDBOARD PRODUCTS

Among the most versatile of all building materials are Flintkote Hardboard Products. These remarkable products are hard, smooth, exceptionally abuse-proof wood fiber board with a pleasing natural color—a rich mottled brown. Hardboard will not warp, splinter, split or crack;. is extremely resistant to abrasion; provides a dense surface that can be painted, varnished, lacquered, enameled or waxed; is easily worked like wood with ordinary tools. Flintkote Tempered Hardboard is even stronger and harder than the standard Hardboard materials.

FLINTKOTE INSULATING WOOL

Made of Fiberglas*

Flintkote Insulating Wool is unique in that it is made from flexible glass fibers which modern science has produced and developed into a most efficient and durable thermal insulating material. Its inherent qualities offer many advantages which provide better and more dependable performance.

In the manufacture of Flintkote Insulating Wool, Fiberglas fibers of almost incredible thinness are interlaced in a resilient wool-like mass for fabrication into batts, blankets and others forms. These long, flexible glass fibers are extremely light in weight and, when combined in wool-like form, give great thermal insulating value. Because they have no cellular interstructure, they cannot absorb moisture and will not rust, rot or mildew. Neither do they sustain vermin or become odorous.

The thermal conductivity of Flintkote Insulating Wool (Fiberglas) products is established in the A.S.H.V.E. Guide as "k" = .27 BTU. This is the figure recommended for calculating purposes in computing heat losses from buildings.

When placed between the studs, Flintkote Insulating Wool helps retard the spread of fire. Flintkote Insulating Wool complies with the requirements of Federal Specification HH-1-521-c—"Insulating, Batt or Strip Form and Loose Fill."

It is made in a variety of forms, each designed to serve a specific purpose in the insulation of buildings under construction or existing structures.

BATTS AND ROLL BLANKETS (Paper enclosed)—These products provide a scientifically correct combination of low-density insulation, a vapor barrier on the side installed facing the building interior, and a vapor-porous enclosing paper. The two types of paper used are joined at the sides of the batt or blanket to form a handy nailing flange that facilitates installation. The flange is recessed so that the batt or blanket stands ½" back from the face of the studs. This provides dead air space for extra insulation and keeps the insulation away from the plaster or other material used on the interior. Once in place, Flintkote Insulating Wool Batts or Roll Blankets will not sag or settle—they are durable and will stay put.

Bantam Batts are smaller size units of low-density Insulating Wool with no paper enclosure—no vapor barrier or nailing flanges.

Flintkote Insulating Wool is also made in a form suitable for pouring into walls of buildings already constructed, or between ceiling joists.

PRODUCT DATA—FLINTKOTE INSULATING WOOL

Farm	Approx. Thickness	Approx. Width**	Approx. Length	No. af Pcs. per Package	Type of Package	Surface Area Square Feet Per Package
Roll Blanket	Thick 3" Medium 2" Inch 1"	15" 15" 15"	32' 48' 80'	1 1 1	Bag Bag Bag	40 60 100
Roll Blanket	Thick 3" Medium 2" Inch 1"	23" 23" 23"	20'11" 31'4" 47'	1 1 1	Bag Bag Bag	40 60 100
Batt Blanket	Thick 3" Medium 2"	15" 15"	24" 24"	16 24	Bag Bag	40 60
Batt Blanket	Thick 3" Medium 2"	15" 15"	48" 48"	8 12	Bag Bag	40 60
Bantam Batt	Wall Thickness	15"	10¾"	27	Bag	30
Pouring Waal	4"				Bag	20†

*T. M. Reg. U. S. Pat. Off.—Mfg. by Owens-Corning Fiberglas Carp.

**Material 15" wide fits between studs 16" on centers; 23" wide fits studs an 24" centers.

† Approx. caverage, sq. ft. per bag when applied 4" thick.

SR-3

THE FLINTKOTE COMPANY

BUILDING MATERIALS DIVISION

30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

DISTRICT OFFICES

ATLANTA (6), GA. 1215 Sylvan Road, S. W.
BOSTON (16), MASS., 925 Park Square Building
CHICAGO HEIGHTS, ILL., 17th St. and Wentworth Ave.
DETROIT (27), MICH., 14201 Schaefer Highway
EAST RUTHERFORD, N. J., Central Ave. & Oak St.
NEW ORLEANS (4), LA., Poland and Galvez Sts.
WACO, TEXAS, Medical Arts Bldg.
WASHINGTON (5), D. C., Woodward Building
PIONEER DIVISION—THE FLINTKOTE COMPANY, LOS ANGELES (54), CALIF., 55th and Alameda Streets

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9

THE FACTS ABOUT

Weatherproof

HOMASOTE

The insulating and building board
for new construction and for modernization

HOMASOTE

THE MEANING OF WEATHERPROOF

In the most humid parts of tropical Africa — in the frozen bases of Little America — and in every kind of climate between those two extremes — Homasote has met every conceivable test for a top-quality insulating and building board.

Letters from home owners — in all parts of the world — testify that Homasote homes have come through floods, blizzards, tornadoes, hurricanes and even fires — with little or no damage.

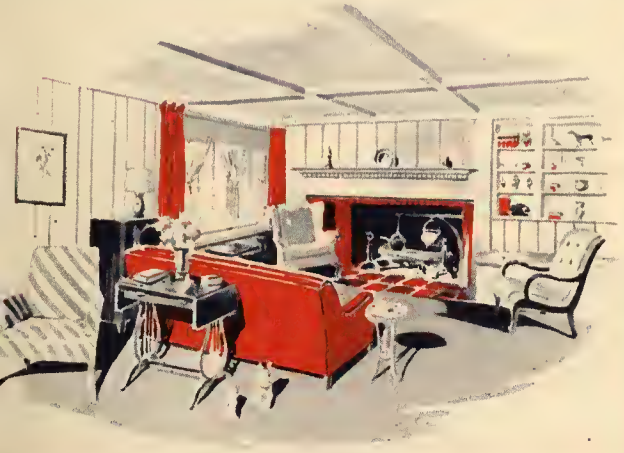
This performance record — covering a period of more than thirty years — is no surprise to anyone who has ever visited the Homasote Mills in Trenton, New Jersey. There are no warehouses! Winter or Summer, the big sheets of Homasote are piled outdoors, as soon as completed. There they lie until needed. Then they are trimmed to size — which may be as big as 8′ x 14′ or as small as 4′ x 4′. They are immediately ready for shipment. This has been standard practice from the start. It is the behind-the-scenes evidence that the Homasote Company know their product is weatherproof.

WHERE TO USE HOMASOTE

Homasote is the all-purpose insulating and building board. It has been used in the construction of thousands of new homes — ranging in price from $2,000 up to $60,000. In many of these homes it has been specified as interior finish for both walls and ceilings — as exterior sheathing or finish — as roof sheathing and sub-flooring. In thousands of other homes, Homasote has been used for modernization and repair work of every type.

Homasote is strong, economical, quick and easy to use — for farm buildings of all sizes; for summer camps, garages, play houses, bath houses, tool sheds and filling stations.

In both strength and appearance it has proved unusually suitable for store fronts, store interiors, murals, advertising displays, window decorations, bulletin boards, dart games, hampers and the like.



PHYSICAL CHARACTERISTICS

Thickness in inches	15–32
Weight per sq. ft. in lbs.	1.00
Weight per cu. ft. in lbs.	25.5
Ultimate Tensile Strength, lbs. per sq. in.	680
Transverse Strength (Modulus of Rupture) lbs. per sq. in.	1100
Modulus of Elasticity, lbs. per sq. in.	42,500
Ultimate Compressive Strength, lbs. per sq. in.	19,500
Thermal Conductivity B.T.U. per hr. per sq. ft. per in. thickness per 1° F. difference	0.42
Air Infiltration per sq. ft. per hr. in cu. ft.:	
Wind Velocity 20 miles	0.1
40 miles	0.5
60 miles	1.9
80 miles	4.3
100 miles	7.75
Sound Absorption for pitch 512	0.23
Water Absorption: (20 hrs.) % by weight	17

HOMASOTE COMPANY

APPLICATION

EXPANSION . . . *All Homasote must be expanded before applying.* To expand, wet the *entire* surface, stack in a pile for at least overnight, but not longer than 48 hours. If any danger of freezing, stack in warm place. ***FRAMING*** . . . Frame all members on not *greater* than 16" centers. Bearing shall be provided for all edges.

EXTERIOR . . . Nail to the framing with *5d cement-coated box nails.* Start nailing in center of sheet, placing nails 10" to 12" apart, working out from center to each end simultaneously and staggering nails on alternate studs. Always keep nails at edges at least ½" back from the edge of board and 6" on centers.

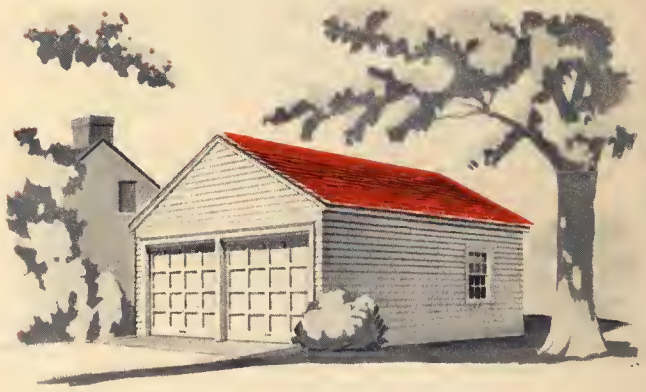
As a finished exterior surface, glue and nail to framing, using Sote Glue. Use special Homasote nails spaced as described above. Allow ⅛" between abutting sheets for expansion.

INTERIOR . . . Interior Homasote shall be both glued and nailed to the framing in the case of walls and ceilings, using special Homasote nails. Nail as for exterior Homasote. Allow ⅛" between abutting sheets for expansion. *Homasote on ceilings should be applied on 1" x 2" furring strips 12" on centers for best results.*

Homasote used as sub-flooring shall be nailed to the framing with 5d cement-coated box nails spaced as described above.

GLUE . . . Sote Glue, obtainable from our company, is a self-bonding glue designed for gluing Homasote to wood framing members. CAUTION: Follow instructions for mixing explicitly. Keep equipment and utensils clean. Do not add more water than specified.

MIXING DIRECTIONS FOR USE WITH HOMASOTE ONLY. 1¾ pounds (1¾ pints) cold water (65-70°F.) 1 pound of dry glue (Note: All the glue powder should be added to the water BEFORE stirring). 4 tablespoons of Kerosene. Place water in pail and dump in glue powder. Mix well with a paddle or power mixer. At this point the glue usually will become too thick to stir, but DO NOT add more water as the glue will become thinner within about twenty minutes, after which stir until glue is smooth. Add 4 tablespoons of Kerosene and mix well. This glue has a working life of about 4 or 5 hours. DO NOT attempt to add water after it has commenced to set. The glue may be applied with either applicator or brush. Glue required for application of Homasote on framing is 0.65 lbs. per sq. ft. of Homasote.

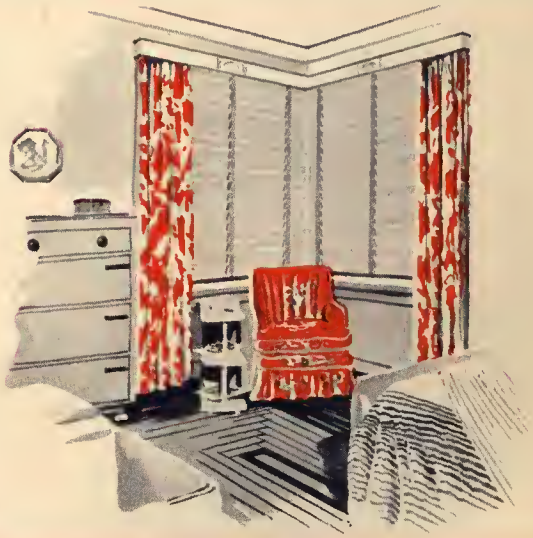


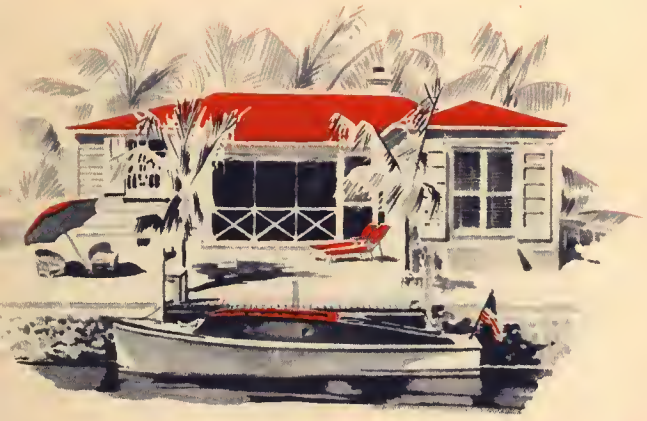
SHEATHING

SIDEWALLS . . . If masonry veneer is to be used over Homasote sheathing, a minimum of 1" air space shall be provided between Homasote and masonry. If wood siding is used over Homasote sheathing, ⅜" furring lath shall be applied vertically over each stud and at all openings to provide an air space between the Homasote and the siding. If shingles are used over Homasote sheathing, 1" x 2" nailing strips shall be applied horizontally on the face of the Homasote and nailed through to the studs.

ROOFING . . . Apply 1" x 2" furring strips to rafters, 12" on centers. Nail pre-expanded Homasote to furring strips. Apply asphalt shingles with ¾" Viking Staples. For wood shingles, Homasote is applied directly to the rafters and then 1" x 2" furring strips are applied on the face of the Homasote and nailed into the rafters at whatever centers the size shingle demands, using special Homasote nails.

SUB-FLOORING . . . Apply Homasote directly to joists with not over 20" on centers. Finished flooring shall be laid over it immediately. With ½" flooring, joists must be on 10" centers.





PAINTING AND WALLPAPERING

EXTERIOR PAINTING . . . Repair all surface damages and fill all nail holes before paint is applied. Surface damages and holes shall be filled with a compound such as "Plastic Surfacer," made by the Glidden Company, Cleveland, Ohio, or "Spackling Compound," made by Muralo Company, Incorporated, Staten Island, New York. Use only enough water to make a rather stiff mixture. Mix the night before and place a damp cloth over container. The painter shall keep his putty knife clean at all times by scraping it on the side of the wide spatula. Only enough compound should be taken on the putty knife at one time to surface putty one hole and this should be applied with a circular stroke around the nail hole to cover.

First coat shall be of a high-grade exterior sealer or a good grade of lead and oil paint cut with varnish size approximately two parts paint to one part varnish size. Following coats shall be of a good grade of lead and oil paint.

Exterior Homasote may also be painted with *Homasote Sand Finish.* Write for instructions.

INTERIOR PAINTING . . . Before priming, the painter shall repair all surface damages and fill all nail holes, as described for exterior painting.

For interior painting of Homasote, the following primers are recommended and may be either brushed or sprayed: "Seal-Over," made by Arvon Products Company, Incorporated, Philadelphia, Pa.; "Primer & Sealer No. 9843," made by Vita-Var Corporation, Newark, N. J. Interior texture paints, either of water base or oil base, may be used, but Homasote must be primed with one of the above-mentioned primers. Texture paints shall be applied in accordance with the manufacturer's specifications.

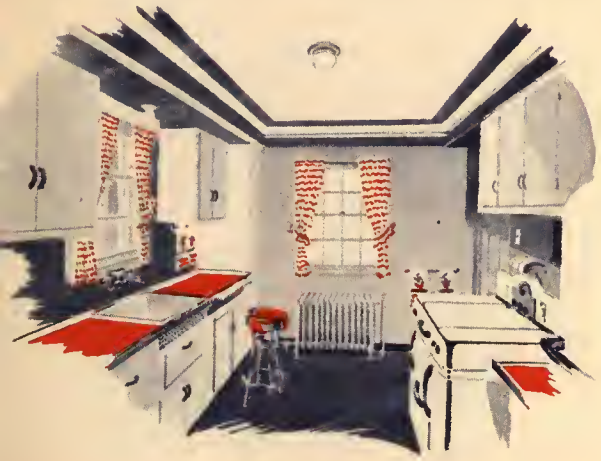
WALLPAPERING . . . Homasote shall be sized with glue size and wallpaper applied with any commercial wheat flour paste.

* * *

Never use plaster over Homasote!

* * *

All painting and wallpapering must be completed, before corner, ceiling or cover mouldings are applied!



MOULDINGS

All Homasote joints must be covered with some rigid type of covering such as wood, metal or plastic mouldings — applied so that the Homasote is free to expand and contract in back of the covering. Corner mouldings and cover mouldings (used over flat joints) shall be nailed so that nails go directly into the wood framing without passing through the Homasote. Ceiling cornice mouldings shall be nailed through the ceiling Homasote *only.* These mouldings shall be applied after walls have been painted or papered. For best results, mouldings shall be painted before installation.

Mouldings or battens used for exterior work shall be back painted before erection. Mouldings with a rounded edge must be used where contact is made with a Homasote wall or ceiling. *In-corner mouldings* are not obtainable in stock and must be especially run to the shape indicated.

* * *

For more detailed information, the builder or architect is invited to write for our new, fully-illustrated booklet.

✓Double ✓Duty

INSULITE

INSULATES AS IT BUILDS . . . BUILDS AS IT INSULATES

BUILD WITH INSULITE THE ORIGINAL WOOD-FIBER STRUCTURAL INSULATING BO

INSULITE

DIVISION OF
MINNESOTA AND ONTARIO PAPER COMPANY
GENERAL OFFICES: 500 Baker Arcade Building, Minneapolis 2, Minnesota
SALES SOLICITORS OFFICES:
NEW YORK 7, N. Y., 258-59 Broadway
CHICAGO 6, ILL., 205 W. Wacker Drive
MILL: International Falls, Minnesota

COMPANY—EXPERIENCE—FACILITIES

EXPERIENCE

Insulite, the original structural wood fiber insulating board, has been made and marketed for more than a quarter of a century. Experience gained through constant observation of actual installations of Insulite Products during this period, coupled with exhaustive laboratory research work, assures dependable and comprehensive information on the practical applications of Insulite in its various forms. This background of many years of practical experience offers the ultimate consumer of Insulite Products an unsurpassed service and protection.

MANUFACTURING FACILITIES

A thoroughly modern plant, complete in every detail, assures an ample supply of material at all times. Special machine operations fabricate, economically and accurately, all types and sizes of insulation board units for the building and industrial fields.

DISTRIBUTION

Insulite Products are distributed nationally through retail lumber dealers. To facilitate shipping and handling without injury, these materials are securely packaged in strong, easily handled bundles for safe delivery to the job.

SERVICE

INSULITE maintains a Service Department personneled with experienced Insulation Engineers. The Company tenders its full cooperation and service facilities to architects in the solution of insulation problems.

INSULITE MANUFACTURING PROCESS

The manufacture of Insulite Structural Insulation Products begins in the vast northern woods. Carefully selected wood is transported to the Insulite Mill where it is cut into shorter lengths and the bark removed. The logs are then reduced to fibers by one of two processes—a strictly cold grinding process or a chipping and digesting process. Fibers from the first process are used exclusively in making the stock from which the light colored (Ins-Lite) board products are made. Stock from both processes, mixed in proper proportions, is used to make Graylite products.

The fibers in all cases are thoroughly treated to insure the greatest possible degree of moisture resistance and are formed into large sheets by a felting process which was especially developed to provide uniform quality and strength throughout the finished material.

During the felting process the fibers are interlaced in such a manner as to produce a myriad of minute air cells affording the maximum amount of resistance to heat passage.

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PHYSICAL CHARACTERISTICS

BASIC MATERIALS—Four distinct types of Insulite wood fiber products are manufactured and are available in many forms for structural insulation, acoustical, and decorative purposes.

1. "INS-LITE"—a standard density material, light cream in color with one surface having a "Burlap Texture" (simulating a loosely woven fabric) and the other a "Linen Texture" (smooth and simulating a closely woven fabric). SMOOTHCOTE and SATINCOTE—basically Ins-Lite—have one surface factory finished.

2. "GRAYLITE"—an integrally treated asphalt containing board, gray-brown in color, burlap and linen textured surfaces.

3. "ACOUSTILITE" and "FIBERLITE"—a very low density wood fiber board with an exceptionally high percent of sound absorption.

4. "HARDBOARDS"—a specially fabricated wood fiber board of various high densities, hardnesses and colors for structural and decorative purposes.

TESTS—All Insulite Structural Insulating Materials are designed to conform with "Federal Specifications LLL-F-321b for Fiber-Board; Insulating and amendment No. 1."

PROPERTY	INS-LITE	GRAYLITE	SMOOTHCOTE	SATINCOTE	FIBERLITE	ACOUSTILITE
THERMAL CONDUCTIVITY HEAT TRANSMITTED IN BTU PER HOUR PER SQUARE FOOT PER INCH PER DEGREE FAHR. AVERAGE VALUES.	0.33	0.35	0.33	0.33	0.30	0.30
TENSILE STRENGTH POUNDS PER SQUARE INCH. AVERAGE VALUES.	300	350	300	300		
TRANSVERSE STRENGTH LOAD IN POUNDS REQUIRED TO BREAK SPECIMEN ½ INCH THICK AND 3 INCHES WIDE WHEN RESTING ON SUPPORTS 12 INCHES APART. AVERAGE VALUES.	20.3	22.4	20.3	20.3		
MOISTURE RESISTANCE PERCENT BY VOLUME OF WATER ABSORPTION WHEN IMMERSED IN WATER AT 70° F. FOR TWO HOURS. AVERAGE VALUES.	3.7	3.7	3.7	3.7	5.0	5.0
PLASTER BOND POUNDS PER SQUARE FOOT REQUIRED TO SEPARATE GYPSUM PLASTER FROM SPECIMEN. AVERAGE VALUES.	1527	1627				
NAIL HOLDING STRENGTH LOAD IN POUNDS REQUIRED TO PULL A 6d COMMON NAIL LATERALLY TO EDGE FROM A POSITION ¾ INCH FROM EDGE, FOR ½-INCH THICKNESS SPECIMEN.	73.4	91.4	73.4	73.4		
LIGHT REFLECTION REFLECTION FACTOR DETERMINED FROM SPECTROPHOTOMETER DATA FOR A COLOR TEMPERATURE OF 2848 K.	0.64	0.37	0.68	OYSTER WHITE: 0.72 LIGHT IVORY: 0.80	BUFF: 0.77 WHITE: 0.80	BUFF: 0.77 WHITE: 0.80

SOUND ABSORPTION Coefficients of sound absorption. Results for Fiberlite and Acoustilite determined by National Bureau of Standards and for other products by Riverbank Laboratories. * Noise reduction coefficient is average of coefficients for frequencies 256 to 2048 inclusive.	TYPE OF MOUNTING	ON FURRING STRIPS	ON FURRING STRIPS	ON FURRING STRIPS	ON FURRING STRIPS	On Furring Strips	On Solid Background	On Furring Strips	On Solid Background
FREQUENCY	128	0.33	0.32			0.07	0.07	0.12	0.16
	256	.39	.34			.40	.20	.49	.34
	512	.30	.25	0.16	0.18	.72	.53	.80	.79
	1024	.27	.23			.75	.77	.85	.72
	2048	.24	.30			.80	.74	.80	.69
	*N.R.	.30	.30			.65	.55	.75	.65

QUALITY—Insulite Structural Insulation Products have been recognized for their superior quality since 1914 when the first board was produced. Rigid engineering specifications for 35 years have established Insulite's reputation for reliability.

UNIFORMITY—Adequate laboratory control and mill inspection assure uniformity in the physical characteristics and appearance of the various Insulite Products. Packing methods eliminate damage under normal shipping conditions.

BUILD WITH

INSULITE THE ORIGINAL WOOD-FIBER STRUCTURAL INSULATING BOARD

MANDO FOREST PRODUCTS PAPER COMPANY

DESCRIPTION OF

PRODUCT NAME	SIZES (AREA) (Feet, except as noted)	Thickness (Inches)	DESCRIPTION	USES
SHEATHING BILDRITE	4 x 8, 9, 10, and 12 Also 2x8 with V-joint on long edges.	25/32	A structural insulating sheathing board of special composition and increased density. Integrally treated with asphalt for increased strength and added resistance to moisture absorption. Burlap and linen textured surfaces and square cut edges. 4 ft. wide boards marked for proper nail spacing and alignment.	Highly efficient wall sheathing and roof boarding. Used with siding, brick veneer, shingles, and stucco. Permits wall to "breathe." Guards against trapping vapor in the stud space and the possibility of condensation.
LOK-JOINT LATH SEALED GRAYLITE	18" x 48"	½ 1	Fabricated from Graylite of standard composition and density, burlap textured surface. Long edges shiplapped to retard air infiltration and maintain continuity of insulation. ½-inch thickness is homogeneous and 1-inch thickness is two ½-inch thicknesses stapled together. Galvanized wire "Loks" spaced 16 inches center to center along bottom edge so as to come midway between framing supports, reinforce the unsupported horizontal joint and minimize yielding under trowel pressure. "Loks" also serve as plaster grounds assuring not less than ¼-inch thickness of plaster on first coat. With an effective vapor barrier on the stud side of the ½-inch thickness and between the two layers forming the 1-inch thickness.	Interior insulating plaster base for walls and ceilings to provide proper vapor control where low outside temperatures and high indoor relative humidities (or air conditioned space) are likely to cause condensation in wall spaces or attics.
BUILDING BOARD INS-LITE GRAYLITE	4 x 6, 7, 8, 9, 10 and 12	½ ¾ 1	Square edge Ins-Lite (or Graylite) boards of standard composition and density. ½ and ¾-inch thicknesses are homogeneous; 1-inch thickness is laminated (two ½-inch thicknesses glued). Burlap and linen textured surfaces.	Insulating structural sheathing and roof boarding, exterior finish, interior wall and ceiling finish, and sound insulating construction.
INTERIOR BOARD SMOOTHCOTE SATINCOTE	4 x 6, 7, 8, 9, 10 and 12	½	Square edged boards (Ins-Lite) of standard composition and density. **Smoothcote** is factory surfaced on one side with a smooth, light cream colored finish. **Satincote** is factory finished on one side with an oil base paint, highly resistant to abrasion and washable. Choice of two fast colors—oyster white and light ivory.	Interior wall and ceiling finish. Requires no further decorative treatment, but can be easily painted.
WALLBOARD SMOOTHCOTE GRAYLITE	4 x 6, 7, 8, 9, 10 and 12		Square edged boards of standard composition and density. Smoothcote is factory surfaced on one side with a light cream colored finish. Graylite—grayish brown in color—contains an integral asphalt treatment. Burlap and linen textured surfaces.	Interior wall and ceiling finish where the greater strength and insulating value of ½ inch and thicker boards are not required.
TILEBOARD SATINCOTE	12" x 12", 12" x 24", 16" x 16", 16" x 32"	½	Fabricated from Satincote Interior Board, beveled four edges of finished surface. Lok-Grip Joint in all sizes and Butt Joint in 12x24-inch size and smaller. **Satincote** is available in oyster white and light ivory.	Decorative and insulating interior wall and ceiling finish.
PLANK SATINCOTE	Widths: 8", 10", 12", and 16" Lengths: 8, 10, and 12	½	Fabricated from Satincote Interior Board. Lok-Grip Joint, bevel, and bead on two long edges, square cut ends. **Satincote** is available in oyster white and light ivory.	Insulating interior wall finish used either vertically or horizontally to provide a random plank effect. Can be left natural, stained, or painted.
LOK-PINS	5/16" x 1⅝"	1/32	Made from heavy galvanized steel. Diamond shaped, 1⅝-inch long and $\frac{1}{16}$-inch wide at center.	Unify Lok-Grip Joints of Tile Boards and plank.
ACOUSTICAL ACOUSTILITE	12" x 12", 12" x 24", 16" x 16", 16" x 32" and 24" x 24"	¾	Light weight, wood fiber, high efficiency sound absorptive materials. Travertine textured surface, factory spray painted in buff and in white colors. Butt joint and beveled ⅛x⅛ inch four edges of finished surface. **Acoustilite** furnished in ¾-inch thickness. **Fiberlite** in ½-inch, only.	Acoustical correction of theaters, churches, auditoriums, offices, schools, gymnasiums, hospitals, stores, libraries, bowling alleys, restaurants, and taverns. Provides high light reflection and decorative ceiling treatment.
FIBERLITE	For Acoustilite	½		

MANDO

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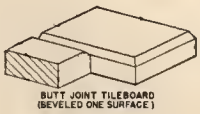
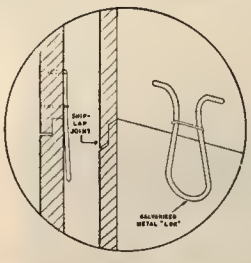
INSULITE PRODUCTS

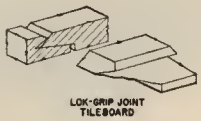
PRODUCT	SIZES (AREA) (Feet, except as noted)	Thickness (Inches)	DESCRIPTION	USES
ADHESIVE No. 480	1-Gallon and 5-Gallon Containers		An adhesive that wets properly, readily adheres to prepared surfaces, has high wet strength, does not react with or dissolve paint. Remains semi-plastic. Neutral light olive color.	For the application of acoustical tiles, fiber tile boards and planks over typical wall and ceiling surfaces of wood, plaster, concrete, clay tile, plaster board, fiber board, metal, brick, cinder block.
SIDING BRICK DESIGN STONE DESIGN SHINGLE DESIGN	14⅜" x 43¾"	⅝	Insulating Siding with Graylite base shiplapped four edges. All faces and edges asphalt impregnated. Finish face has heavy coating of asphalt and embedded mineral granules marked off with "mortar joints" to simulate brick or stone designs. Brick design available in buff, red, and pearl blends and stone design in grey blend. Shingle design available in silver or buff blend.	Exterior siding for application over existing siding or directly to wood sheathing. Provides thermal insulation and lasting exterior finish for new construction or in remodeling.
HARDBOARD DENSULITE	4 x 8, 10, 12	3/16	Medium heavy density board, square edges. Smooth one surface and screen marked on the other. Golden oak brown color.	For interior decoration, paneling, wainscoting. Left natural or painted.
HARDBOARD	4 x 2, 3, 4, 6, 7, 8, 9, 10, and 12	⅛ 3/16	Heavy density board, square edges. Smooth one surface and screen marked the other. Golden oak brown color.	Wainscoting, counter tops, outdoor signs, furniture, truck bodies.
	4 x 12	¼ 5/16		
HARDBOARD LEATHERITE	4 x 6, 8, 12	⅛	Extra heavy density board, square edges. Smooth one surface, embossed other surface with pattern resembling grained leather. Burl walnut color.	Wainscoting, deluxe wall paneling, cabinet work, window displays, screening. Can be left natural or finished.
HARDBOARD TEMPERED	4 x 1, 1½, 2, 3, 4, 6, 7, 8, 9, 10 and 12	⅛ 3/16	Extra heavy density board, square edges. Smooth surface one side, screen marked the other. Burl walnut brown color.	For service where high resistance to moisture and abrasion are factors as counter tops, truck bodies, outdoor signs, furniture, base boards.
	4 x 12	¼ 5/16		
HARDBOARD PANELTILE	4 x 8, 12	⅛	Extra heavy density board, square edges. Smooth both surfaces. Burl walnut brown color. One side scored in 4, 8, or 12-inch squares.	Wainscoting and wall finish in restaurants, kitchens, bathrooms where a tile-like appearance is desired. Can be enameled or lacquered.
ROOF INSULATION INS-LITE GRAYLITE	23" x 47"	½ 1 1½ 2	Fabricated from Ins-Lite (or Graylite) boards. ½-inch thickness homogeneous and square edge. 1-inch thickness homogeneous and square or offset edge. 1½-inch thickness solidly cemented or stapled with either square or offset edge. 2-inch thickness solidly cemented or stapled with either square or offset edge.	Insulation over wood, steel, concrete, tile roof decks under built-up roofing.

LOK-GRIP JOINT - BEADED PLANK


BUTT JOINT TILEBOARD (BEVELED ONE SURFACE)



LOK-JOINT LATH


LOK-GRIP JOINT TILEBOARD

BUILD WITH

INSULITE THE ORIGINAL WOOD-FIBER STRUCTURAL INSULATING BOARD

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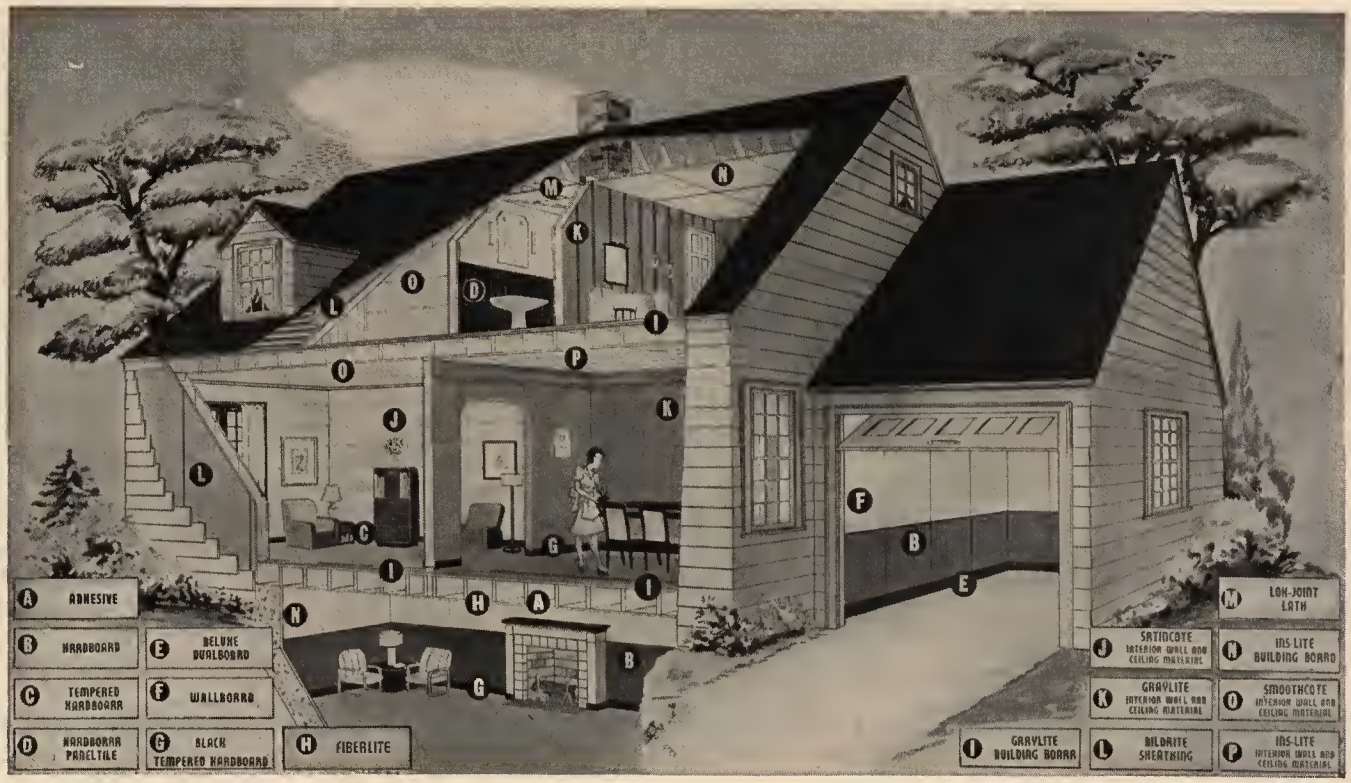
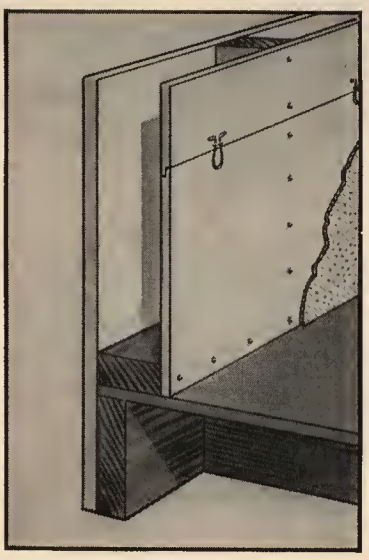
INSULITE IN RESIDENTIAL CONSTRUCTION



THE INSULITE *APPROVED* WALL OF PROTECTION

1—BILDRITE SHEATHING encloses the frame work of the Wall of Protection, providing these extra values:

- Four times the bracing strength of horizontally applied wood sheathing.
- Far greater insulation than lumber.
- Windproofed walls — no open joints or knot holes.
- Low application costs.
- Rapid application.
- An opportunity for the wall to "breathe."



2—SEALED LOK-JOINT LATH on interior of the Wall of Protection provides:

- Uniform thickness of efficient insulation.
- Unified surface for plaster due to locked edges.
- Reduction in sound passage.
- A strong bond with plaster.
- Protection against plaster cracks.
- For the elimination of dirt streaks and lath marks.
- The "Loks" which also serve as grounds for the first coat of plaster.
- A vapor barrier on the warm side of the wall.

CONDENSATION CONTROL—Where low outside temperatures and high inside humidities may occur, authorities recommend "sealing the hot side and venting the cold side" of the wall to prevent condensation.

An adequate vapor barrier, Sealed Graylite Lok-Joint Lath, should be used on the warm (room) side of the wall to effectively reduce vapor transmission into the stud space. Bildrite sheathing is designed to allow any surplus vapor in the stud space to pass naturally toward the exterior air. If vapor is trapped within the stud space and cannot escape through the sheathing, destructive condensation may occur.

STRUCTURAL DESIGN

Sound structural design requires that walls resist external forces such as the pressure exerted by high winds, and vibration. Walls should not deflect to a point where windows and doors stick or plaster cracks when subjected to such forces.

A wind velocity of 68.5 m.p.h. exerts a pressure of 15. lbs. per sq. ft. Since velocities in excess of this are rarely experienced in the U. S. such a pressure is used as a design factor. Several hundred cities include this requirement in their building codes. Good design usually limits deflection to not more than 1/360 of the span. In a wall 18 feet (two stories) high the deflection of the top plate should not exceed 0.6 in.

In the case of a typical two story home 26 x 36 ft., wind pressure at right angles to the 36 ft. side will be resisted by the bracing qualities of the 26 x 18 ft. end walls. When these walls are completely covered with Bildrite sheathing and the wind pressure is equivalent to 15. lbs. per sq. ft. the top plate of the end wall would be deflected 0.245 in.*

When approximately one-third of the Bildrite sheathed end wall is occupied by door and window openings, the top plate deflection will be 0.585 in.* However since door and window openings rarely exceed one-fifth of the wall area it is evident that deflection is kept within permissible limits, even under extreme conditions.

Walls sheathed with Bildrite resist the effects of vibration. Even after 1,000,000 cycles of severe vibration, Bildrite sheathed walls retained high bracing strength.*

**Based on U.S. Dept. of Agr.—Forest Products Laboratory tests.*

PREFACE TO INSULITE SPECIFICATIONS

SPECIFICATION FORM

The form of these specifications is that of a "Master" which includes all clauses which in ordinary practice apply to average work. All clauses, obviously, do not apply to every building. In formulating the specifications for a particular building, only those clauses which apply should be selected for inclusion. Special provisions or methods but seldom required are not included—such clauses should be added wherever necessary to clearly define the procedure and especially to obviate controversy involving responsibility and cost.

SHORT FORM SPECIFICATION

At the beginning of each master specification is given a short form which, for convenience, may be used in place of the more detailed specifications. While brief and space saving, this short form will still definitely identify the proper Insulite product and its use.

NOTES

Notes in italics are explanatory or advisory only and should not be included in the specification.

SELECTIVE WORDS

Wherever words or phrases occur in the body of the specification paragraph printed in italics and enclosed in parentheses, choose that word or phrase which applies to the particular work, omitting those that are irrelevant. Wherever the word "Specify" occurs in italics enclosed in parentheses, thus (*specify*), add the particular word or clause applicable.

INSULITE BILDRITE SHEATHING

SECTION 1 . . . . . MASTER SPECIFICATIONS

SHORT FORM SPECIFICATION

Note: *List and locate the wall areas to be covered.*

Sheathing shall be Bildrite Sheathing as manufactured by INSULITE, Minneapolis, Minnesota. Boards shall be $\frac{25}{32}$ in. thick *(4 ft. wide x 8 to 12 ft. long as best adapted to framing conditions for application parallel to framing members) (2 x 8 ft. V-joint, for application at right angles to framing members).* Application of sheathing, nails, framing shall be in accordance with INSULITE'S current published specifications.

DETAILED SPECIFICATION

(1) WORK INCLUDED

Note: *Here list and locate definitely the wall areas to be covered.*

(2) MATERIAL

Sheathing shall be Insulite Bildrite Sheathing as made by INSULITE, Minneapolis, Minn. Boards shall be $\frac{25}{32}$ in. thick, *(4 ft. wide x 8, 9, 10 and 12 ft. long as best adapted to framing conditions) (2 x 8 ft. with V-joint on long edges).*

(3) APPLICATION

(3a) General—Insulation continuity shall be maintained. Apply sheathing with linen textured surface next to framing members. Provide wood nailing base at all necessary points to accommodate service outlets, brackets, shutters.

(3a1) Apply sheathing with the length parallel with framing members. Boards shall be of sufficient length to span completely between sills and plates or other structural nailing members. Provide headers cut between framing members at all intermediate end joints, particularly at second floor line in balloon construction to form fire stop and nailing base for sheathing. All long edges shall center over framing members.

(3a2) Apply sheathing perpendicular to framing members with the open V-edge on the bottom of the sheet. Apply sheets with end joints staggered and centered over framing members.

Note: *Use (3a1) for 4 ft. width sheathing and (3a2) for 2 x 8 ft. sheathing.*

(3b) Spacing—Space boards ⅛ in. apart at all vertical edges. At window and door frames bring sheathing in close contact with frame members.

(3c) Nails—Use 1¾ in. galvanized roofing or 8d common nails.

(3d) Nailing—

(3d1) First nail sheathing to intermediate framing members and then nail the edges. At all edges space nails 3 in. apart on centers and not less than ⅜ in. from the edges. On intermediate framing members, space nails 6 in. O.C. Drive nails until the heads are flush with the surface.

(3d2) First nail sheathing to intermediate framing members and then at the ends. Space nails approximately 4½ in. center to center along each framing member and along sills and plates. Nails to be placed not closer than ⅜ in. from any edge.

Note: *Use (3d1) for 4 ft. width and (3d2) for 2 x 8 ft. sheathing. Proper spacing and alignment of nails is marked on each board of 4 ft. width Bildrite Sheathing.*

SUPPLEMENTARY PROVISIONS

Note: *Provide for the following in other specification divisions when and where they apply. Bildrite is not a nailing base.*

(1A) CONSTRUCTION

Framing shall be 16 in. on centers. Follow the standard recommendations of the Building Code Committee of the U. S. Department of Commerce and the National Lumber Manufacturing Association for all wood framing.

(2A) WOOD SIDING

All joints shall butt over the center of a stud. Nail through sheathing to each stud using nails of sufficient length to pass through the sheathing and penetrate the stud at least 1 in. For siding with butt thickness of ½ in. or less, use 8d nails. For all siding with butt thickness over ½ in., use 10d nails.

Note: *Building paper under siding is not necessary when Insulite Bildrite Sheathing is used.*

(3A) WATERPROOF FELT

Note: *Include under slate and tile roofing. Felt not necessary under wood siding, under masonry veneer, or vertical surfaces under furring, or on pitched roofs under furring and wood shingles.*

Over the sheathing, under the furring strips, apply a continuous course of *(specify brand and weight)* waterproof felt.

(4A) FURRING STRIPS FOR SHINGLES

(4A1) Provide 1 x 2 in. wood furring strips laid at right angles to framing members, over the sheathing *(and waterproof felt)*, properly spaced to take shingles, slate, tile, and similar rigid wall and roof covering. Nails shall be of sufficient length to pass through the sheathing and penetrate the framing members at least 1 in.

Note: *Building paper is not necessary on vertical surfaces under furring strips when Insulite Bildrite Sheathing is used.*

(4A2) Provide a 1 in. thick solid wood base over Bildrite under all metal work, such as gutter aprons, valleys, hips, ridges, saddles, etc. to which to attach the metal in accordance with standard practice. Provide 2 x 4 in. headers spaced 16 in. O.C. cut in between rafters to form firm nailing for ends of boards laid parallel with the rafters.

(5A) FLASHINGS

Flash over the head casings of all windows and doors with metal.

(6A) EXTERIOR STUCCO

(6A1) Waterproof Building Paper—Cover all Bildrite Sheathing beneath exterior stucco with a continuous layer of waterproof building paper. (*Specify type.*)

(6A2) Self-Furring Stucco Base—Self-furring stucco bases, various forms of self-furring wire and expanded metal lath, shall be applied directly over Bildrite *(and building paper)*, nailing or stapling through the sheathing into the studs with standard penetration into the wood.

(6A3) Non-Furring Stucco Bases—Provide 1 x 2 in. wood furring strips nailed vertically to each stud over Bildrite (*and building paper*) to form furring for metal lath stucco base. Nails shall be of sufficient length to pass through the sheathing and penetrate the framing members at least 1 inch.

(7A) MASONRY VENEER

Masonry veneer shall be laid in the usual manner allowing not less than ½ in. space between the face of the Bildrite and the back of the veneer.

Metal ties for masonry veneer shall be nailed through Bildrite into the studs. Nails shall be of sufficient length to pass through the sheathing and penetrate the studs at least 1 inch.

Note: *Building paper is not necessary under masonry veneer when Insulite Bildrite Sheathing is used.*

INSULITE LOK-JOINT LATH

SECTION 2 . . . . . MASTER SPECIFICATIONS

SHORT FORM SPECIFICATION

Note: *List and locate wall and ceiling areas to be covered. If more than one type or thickness is used, list separately.*

Plaster base shall be Sealed Graylite Lok-Joint Lath as made by INSULITE, Minneapolis, Minnesota. Sheets shall be *(½ in.) (1 in.)* thick 18 in. x 48 in., delivered to the building site in the original packages.

Application of plaster base, nails, angle reinforcement, and plastering shall be in accordance with INSULITE'S current published specifications.

DETAILED SPECIFICATIONS

(1) WORK INCLUDED

Note: *Here list and locate definitely the wall and ceiling areas to be covered. If more than one thickness is used, list separately and the respective locations or areas covered.*

(2) MATERIAL

Plaster base shall be Sealed Graylite Lok-Joint Lath as made by INSULITE, Minneapolis, Minn. Lath units shall be *(½ in.) (1 in.)* thick *(as above designated)*, 18 in. wide x 48 in. long, delivered to the building site in the original packages.

Note: *Sealed Graylite Lok-Joint Lath to be applied where low outside temperatures and high inside humidity conditions warrant its use.*

(3) APPLICATION

(3a) General—Do not moisten lath units before application. Start at ceiling and work down. Apply lath at right angles to the framing (or *furring*) members with galvanized wire "loks" out and at the bottom of the unit. End joints shall center over framing members. Stagger end joints in successive courses.

Where cutting is necessary, the lath shall be scored with the point of the lather's hatchet and broken along the scored line. Cut units so that "loks" will occur midway between supports. Where piecing out is necessary, use only strips of Lok-Joint Lath. Accurately cut and fit lath around all electric outlet boxes, piping, etc.

Next to the last course of lath on both walls and ceilings shall not be nailed securely until the last course is locked in place.

(3b) Spacing—Space ends of boards $\frac{3}{16}$ in. apart. Bring locked shiplapped edges together in moderate contact.

(3c) Nails—

(3c1) Use No. 13 gauge, 1¼ in. long, blued plasterboard nails with $\frac{5}{16}$ in. heads or 4d box nails for ½ in. thick Lok-Joint Lath.

(3c2) Use No. 13 gauge, 1¾ in. long, blued plasterboard nails with $\frac{5}{16}$ in. heads or 6d box nails for 1 in. thick Lok-Joint Lath.

(3d) Nailing—First nail units to intermediate supports, then at ends. Space nails approximately 4 in. apart and not closer than ⅜ in. to edges.

(3e) Angle Reinforcement—All corners shall be reinforced with standard metal corner beads. All re-entrant angles shall be reinforced with standard expanded metal angle lath strips. Reinforcement shall be securely stapled over Insulite Lath.

SUPPLEMENTARY PROVISIONS

Note: *Provide for the following in other specification divisions when and where they apply.*

(1A) CONSTRUCTION

Framing shall be 12 or 16 in. on centers. Follow the standard recommendations of the Building Code Committee of the U. S. Department of Commerce and the National Lumber Manufacturers Association for all wood framing.

(2A) FURRING

Fur all exterior masonry walls to receive Insulite Lath with *(1 x 2 in.) (specify)* furring strips set 12 or 16 in. O. C. accurately shimmed to a true, level plane. Secure substantially to masonry.

(3A) GROUNDS

Furnish and erect, substantially secured to framing members through the Insulite Lath, full ½ in. wood grounds for all interior wood trim.

Where 1 in. thick Insulite Lath units are used, add the necessary trim grounds on all door and window frames to compensate for this thickness plus a full ½ inch of plaster.

(4A) PLASTERING

(4A1) Caution—Do not wet Insulite Lath before applying plaster.

(4A2) Inspection—Inspect nailing and notify lather of any portions of Insulite Lath not adequately secured

in accordance with paragraph 3 on previous page. See that all corners and angles are reinforced with metal corner beads accurately set to line with grounds and that all re-entrant angles are reinforced with expanded metal angle strips.

(4A3) Plaster—Use standard gypsum cement plaster or gypsum wood fiber plaster for scratch and brown coats mixed accurately in accordance with the manufacturer's specifications. Both scratch and brown coat shall be mixed to a wet consistency to allow for application with light trowel pressure and to facilitate darbying. Use any standard plaster finish over the brown coat, such as gypsum, lime, or lime gauged with gypsum mixed in accordance with the manufacturer's specifications.

Note: *Lime plaster or lime gauged with gypsum should not be used for scratch and brown coats. Use a quick setting plaster, especially for first coat (two to three hours time of set).*

(4A4) Application—Apply in three (3) coats to full ½ in. grounds in accordance with the plaster manufacturer's specification. Surfaces shall be rodded to a true plane. All corners and angles shall be plumb and true. Wherever necessary, and particularly on ceilings, provide plaster screeds to insure an even, uniform full ½ in. plaster thickness.

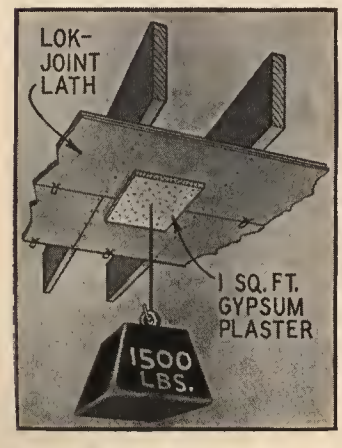
Note: *The maintenance of a uniform full ½ in. thickness of plaster cannot be too strongly stressed. Most plaster defects where a fibrous or board plaster base is used may be attributed to a weak, thin plaster coat, inadequate to withstand the normal building strains of shrinkage, settlement, and vibration.*

In applying the scratch coat of plaster, this shall be carefully pressed into all joints.

If the brown coat becomes stiff and sets during darbying, wet down the surface to allow for darbying without undue pressure against the plaster surface.

Darby strokes shall be in the direction of framing members, the darby spanning two studs or joists.

(4A5) Ventilation—Provide adequate ventilation for the proper drying of the plaster.



To break the bond of plaster to Lok-Joint Lath required a force of more than 1,500 lbs. per sq. ft.—a force that walls and ceilings will never be called upon to resist outside testing laboratories.

Note: *Due to moistureproof characteristics of Insulite Lath, all plaster moisture must be carried off by the air in contact with the exposed plaster surface.*

(4A6) Heat—Provide adequate heat to prevent injury by frost.

(5A) ELECTRIC OUTLETS

Where 1 in. thick Insulite Lath units are used, set electric outlet boxes to accommodate a full 1½ in. thickness from face of stud or joist to face of plaster.

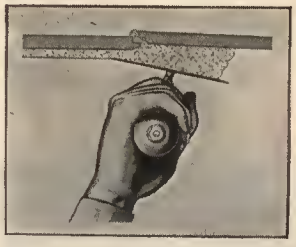
EFFECT OF TROWEL PRESSURE AT THE JOINT

Shiplap Joint (Without Reinforcements)

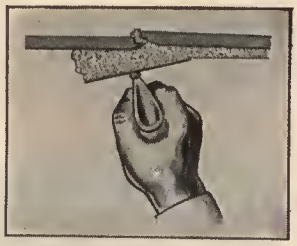
As the trowel approaches the shiplap joint of ordinary lath, the sheet being worked over is supported at the joint by the underlapping lip of the adjacent sheet.

Passing beyond the joint, the trowel pressure is transferred to the unsupported sheet, causing the joint to spring open and permitting plaster to work into it.

V-Type Joint



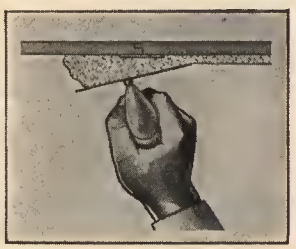
The V-type joint, combining bevel and shiplap, has the same structural defect. The "snap-back" of lath loosens plaster as trowel passes over the joint.



In working the plaster back over the V-type joint, the unsupported sheet "gives" under trowel pressure, and plaster is forced into the open joint.

Insulite Lok-Joint Lath

Lok-Joint Lath is securely supported at the joint by the patented "Lok." Adjoining sheets cannot spring apart, regardless of where pressure is applied.



When troweling back over Lok-Joint Lath, no plaster can enter the joint. The "Loks" bind adjoining units into a firm, unyielding plastering surface.

INSULITE INTERIOR FINISH

SECTION 3 . . . . . MASTER SPECIFICATIONS

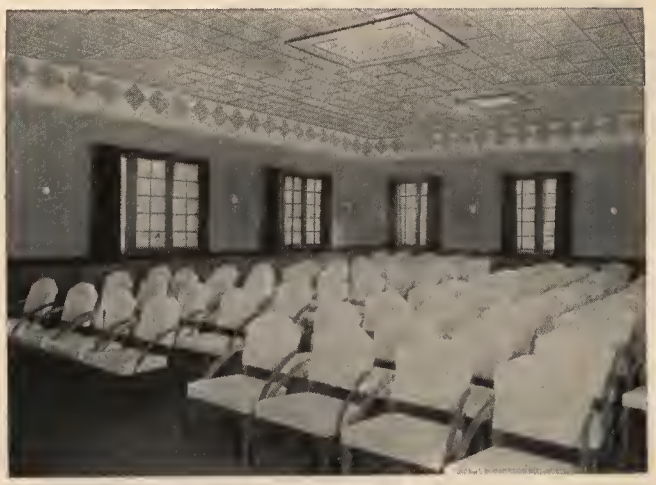
Note: *For Physical Characteristics, see page 3. For descriptions, thicknesses, dimensions, surface finishes, see pages 4 and 5.*

SHORT FORM SPECIFICATION

Note: *List and locate wall and ceiling areas to be finished. If more than one type, color, or thickness is used, list separately.*

Interior Finish shall be *(Ins-Lite) (Graylite) (Smoothcote) (Satincote) (specify color)* as made by INSULITE, Minneapolis, Minnesota. Units shall be *(TileBoard) (Plank) (Building Board) (Interior Board) (specify size)* as indicated on the drawings *(½ in.) (¾ in.) (1 in.)* thick *(specify).*

Application, framing, cutting, and finishing shall be in accordance with INSULITE's current published specifications.



DETAILED SPECIFICATIONS

BUILDING BOARD (INS-LITE AND GRAYLITE) INTERIOR BOARD (SMOOTHCOTE AND SATINCOTE)

(1) WORK INCLUDED

Note: *Here list and locate definitely the wall and ceiling areas to be covered. If more than one thickness is used or more than one type of surface exposed, list separately and the respective locations or areas covered.*

Note: *For the best results, interior detailed elevations of walls and plans of ceilings showing joint or panel design should be included in the drawings and referred to here.*

(2) FRAMING

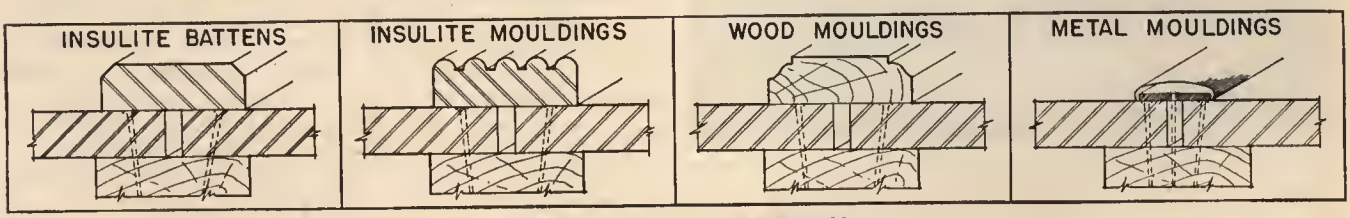
(2a) Studs and joists shall be framed to conform accurately to the design of board spacing or paneling, set 12 or 16 in. O. C. Use additional studs, joists, and headers where necessary. Provide headers back of all wainscot caps, chair rails, baseboards, and other heavy wood trim.

(2b) It is imperative for satisfactory results that framing to receive Insulite Building or Interior Board used as interior finish shall be selected for straightness and uniform thickness to form a true, even nailing base. Bent studs shall be straightened by notching and wedging from the concave side. Framing members that are bent sideways so that the Insulite joint will not center on the bearing shall be forced into position with cut-in headers.

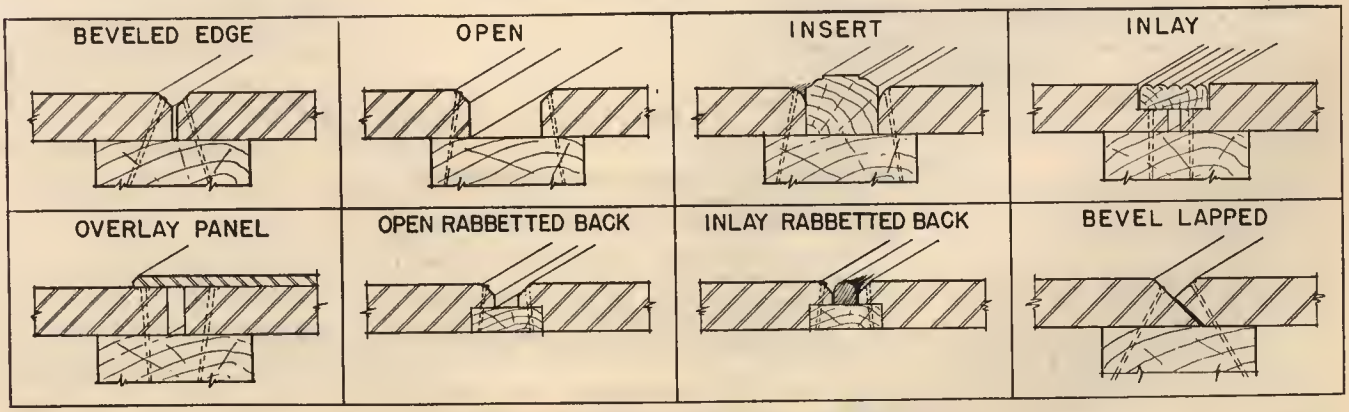
(2c) Fur masonry walls with (1 x 2 in.) (specify) furring strips set 12 or 16 in. O. C. accurately shimmed to a true, level plane. Secure substantially to masonry.

(3) MATERIAL

Interior finish shall be (*Ins-Lite*) (*Graylite*) (*Building Board*) (*Smoothcote*) (*Satincote*) (*Interior*



EXAMPLES OF JOINT MOULDINGS



EXAMPLES OF FEATURED OR ACCENTED JOINTS

Board)—as made by INSULITE, Minneapolis, Minn. Boards shall be (See *Products Description*, page 4) thick (*as designated in paragraph 1*), 4 ft. wide x 6, 7, 8, 9, 10 and 12 ft. long as best adapted, free from surface imperfections and edges where not covered by trim or battens, free from dents and abrasions.

(4) CUTTING

All cutting and fitting shall be done in a workmanlike manner. Where joints are not exposed, cut with a fine tooth saw, using a sharp blade with rapid strokes and a minimum of pressure. Where joints are exposed, cut with a sharp linoleum knife against a straight edge, or with a fiber board cutting tool.

Note: *Sawing if forced leaves a burr, often unsatisfactory for decorating. Cutting with a sharp linoleum knife leaves a smooth, true edge and can be accomplished in three strokes. Very accurate cuts can be made with either The Stanley Fiber Board Cutter or The Bevil Devil.*

(5) BEVELING AND ROUNDING EDGES

(5a) (*Beveling*) (*and*) (*rounding*) of edges of Insulite (*boards*) (*and*) (*battens*) shall be done in a uniform, workmanlike manner, straight and true to line before they are erected.

(5b) Beveling shall be done with a beveling tool or with sandpaper or emery cloth wrapped around a wood block.

(5c) Rounded edges shall be accomplished by means of a piece of sandpaper held in the hand.

(6) BATTENS

(6a) Insulite battens shall be (*specify thickness and width*) with edges neatly (*beveled*) (*rounded*) (*specify*).

(6b) Wood battens shall be (*specify thickness, width, design*).

(7) METAL JOINT MOULDINGS

Metal joint battens shall be as detailed made by (*specify name of manufacturer, type of metal and finish*).

(8) APPLICATION

(8a) General—Insulite shall be applied immediately prior to the erection of interior wood trim. The Insulite boards shall be placed singly around the room and allowed to stand at least 24 hours before erection to allow adjustment to atmospheric conditions. In exceptionally dry weather moisten the Insulite lightly on side facing supports and pile the boards 24 hours before erection.

Apply Insulite with the length parallel with framing members with *(Burlap) (Linen) (Smoothcote) (Satincote)* face exposed (*as designated in par. 1*). All joints shall center over framing members.

(8b) Spacing—

(8b1) Battened Joints—Space boards ⅛ in. apart at edges.

(8b2) Exposed Joints—Bring boards to a moderate contact. Do not force into place.

(8c) Nails—

(8c1) For ½ in. thick Insulite, use standard 1½ in. galvanized roofing nails with ⅜ in. heads where joints are covered with battens or wood trim. Use 1½ in. finishing nails where nailing is exposed; drive nails at angle of 60° alternating from nail to nail.

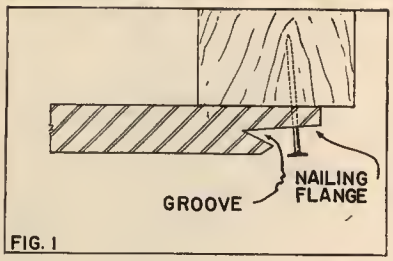


FIG. 1

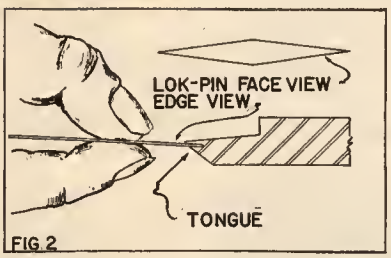


FIG. 2

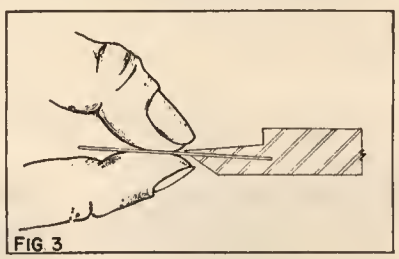


FIG. 3

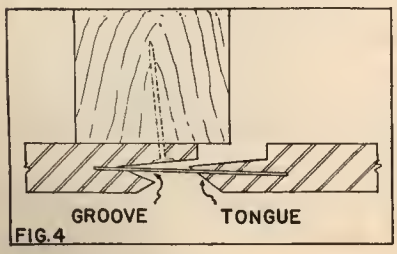


FIG. 4

APPLICATION OF LOK-GRIP JOINT TILEBOARD

1. Nail through nailing flange of first unit (Fig. 1).
2. Start Lok-Pins just below tip of tongue of second unit (Fig. 2).
3. Push Lok-Pins half way into tileboard and at a slight angle with the surface (Fig. 3).
4. Place this second unit so that Lok-Pins enter groove behind nailing flange of first unit (Fig. 4).
5. Firmly press second unit into position, engaging the interlocking joint and firmly anchoring Lok-Pins into both units (Fig. 5).
6. Secure opposite edge of second unit by nailing through flange.
7. Continue in same manner with succeeding units.

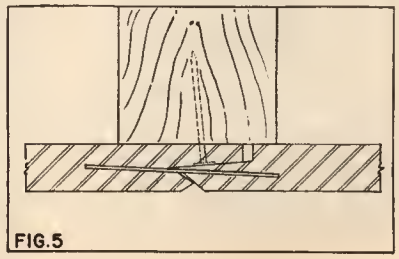


FIG. 5

(8c2) For *(¾ in.) (and) (1 in.)* thick Insulite, use 8d common nails where joints are covered with battens or wood trim. Use 2 in. finishing nails where nailing is exposed.

Note: *The use of cadmium coated or galvanized nails is desirable, especially for exposed nailing, to guard against staining due to rust.*

(8d) Nailing—First nail Insulite to intermediate framing members and then nail the edges. At all edges space nails 3 in. apart O.C. and approximately ⅜ in. away from the edge. On intermediate framing members, space large headed nails 6 in. apart O.C. and finishing nails 3 in. apart O.C.

Where nailing is exposed, drive finishing nails at an angle and set the heads neatly below the Insulite surface. Where nails are covered by battens or wood trim, drive nails until the heads are slightly below the Insulite surface.

(8e) Battens and Wood Trim—Apply battens and wood trim *(as detailed)* over Insulite with nails of sufficient length to pass through the Insulite and penetrate the framing members at least 1 in.

(8f) Metal Moulding—Apply metal mouldings as detailed. *(Specify any particular method of attachment.)*

PLANK (SATINCOTE)

(9) WORK INCLUDED

Note: *Here list and locate definitely the wall and ceiling areas to be covered. If more than one type of surface is exposed, list and locate separately.*

(10) FRAMING

Note: *Where plank units are applied directly to framing members, framing shall be as specified in paragraph 2 page 11.*

(10a) If plank units are to be placed vertically, 1 x 2 in. furring strips shall be applied over the studs placed horizontally, 8 in.—16 in. O.C.

(10b) Horizontally applied plank may be applied to studs 12 or 16 in. O.C.

(11) MATERIAL

Interior finish shall be Insulite Satincote Plank as made by INSULITE, Minneapolis, Minn. Plank units shall be *(see products description on page 4)* ½ in. thick and *(here specify width and length)* with Lok-Grip Joint, beaded, delivered to the building site in the original manufacturer's packages.

(12) CUTTING

Note: *As specified in paragraph 4, page 12 for Insulite Building Board and Interior Board.*

(13) APPLICATION

(13a) General—Apply units with Satincote surface exposed.

(13a1) Units shall be applied at right angles to the framing members. End joints shall be centered over framing members.

(13a2) Units shall be applied over *(solid wood backing) (firm plaster backing)* in accordance with the detailed drawings for the interior finish.

NOTE: *Use (13a1) where units are applied to framing members; (13a2) where units are applied to a solid backing.*

(13b) Spacing—Bring plank units to a moderate contact at interlocking edges. Do not force into place.

Note: *On horizontal plank applications, the end joints may be made to form part of the wall pattern by beveling the ends, or by using metal mouldings, etc.*

(13c) Adhesive—Adhesive shall be Insulite Adhesive No. 480.

(13d) Nails—Use 3d box nails, 1¼ in. long, for ½ in. thickness plank for the concealed nailing along the flange. For bead and for face nailing of starting planks, use finishing nails or brads of sufficient length to give 1 in. penetration into the nailing member.

Note: *The use of cadmium coated or galvanized nails is desirable to guard against staining due to rust.*

(13e) Cementing over Solid Backing—Apply adhesive in spots not more than 10 in. center to center along each edge nor closer than 1½ in. from the edge of each unit. Final size of adhesive spot when pressed into position is to be 2 to 3 in. in diameter and ⅛ in. in thickness.

(13f) Nailing—Nail at all nailing members through nailing flange of Lok-Grip Joint, driving nail at a slight angle so head will be flush with flange slope. Nails are to be approximately ¼ in. from outside edge of flange. Nail 10 in. and wider planks with finishing nails in the bead along edge opposite nailing flange at each nailing member.

(13g) Lok-Pins—Space Lok-Pins not more than 16 in. apart, placing them in Lok-Grip joint midway between nailing members when bead nailing is used and near nailing members when not used.

(13h) Overlays, Trim, etc.—Apply *(decorative overlays) (metal mouldings) (wood trim)* over Insulite Plank with *(nails) (screws)* of sufficient length to pass through the Insulite and penetrate the backing at least 1 in.

TILEBOARD (SATINCOTE)

(14) WORK INCLUDED

NOTE: *Here list and locate definitely the wall and ceiling areas to be covered. If more than one type of surface is exposed, list separately and the respective locations or areas covered. For the best results, accurate, detailed elevations of walls and plans of ceilings showing disposition and sizes of units should be included in the drawings and referred to here.*

(15) WOOD NAILING BASE AND FURRING STRIPS

(15a) Wood Nailing Base—Cover framing with a wood sub-base of No. 1 Common Grade of Douglas Fir, West Coast Hemlock, or equivalent, matched $^{25}/_{32}$ in. lumber to form a continuous nailing base.

(15b) Furring Strips—1 x 2 in. furring strips shall be applied to the framing members, so placed as to form a firm nailing base for the tile board units. Spacing shall not exceed 16 in. O.C.

Note: *Use (15a) or (15b) where Insulite TileBoard is not applied over plastered surfaces.*

(16) MATERIAL

Interior finish shall be Insulite Satincote TileBoard as made by INSULITE, Minneapolis, Minn. The TileBoard shall be *(Lok-Grip) (butt)* joint.

(17) CUTTING

Note: *As specified in paragraph 4, page 12 for Insulite Building Board and Interior Board.*

(18) APPLICATION

(18a) General—Insulite TileBoard shall be laid in exact accordance with the detail drawings with Satincote texture exposed.

(18b) Spacing—Bring units to a moderate contact. Do not force into place.

Note: *Provide space for expansion along all edges of each panel (field) such as bordered by beams, covering this space with a molding or overlay. Provide intermediate transverse expansion joints not more than fifty feet apart in each direction for large continuous areas of tileboard.*

(18c) Adhesive—Adhesive shall be Insulite Adhesive No. 480.

(18d) Nails—

(18d1) Use 3d box nails, 1¼ in. long for ½ in. thickness TileBoard for the concealed application along the nailing flange. Use finishing nails of sufficient length to give 1 in. penetration into nailing member for face nailing of starting units.

(18d2) Use 4d finishing nails for ½ in. thickness TileBoard.

Note: *Use (18d1) for Lok-Grip Joint and (18d2) for butt joint TileBoards. The use of cadmium coated or galvanized nails is desirable to guard against staining due to rust.*

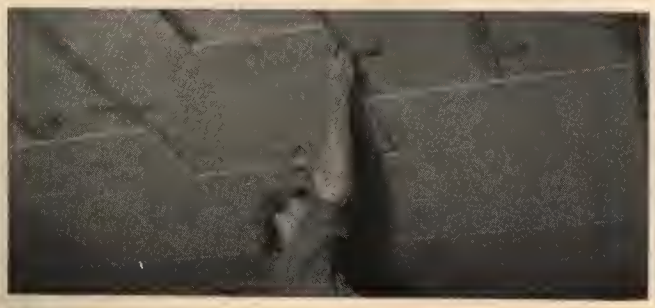
(18e) Cementing Over Solid Background—Apply adhesive spots not more than 10 in. apart or closer than 1½ in. from edges of TileBoard. Final size of spot, when pressed into place is to be 2 to 3 in. in diameter and ⅛ in. in thickness. Apply unit in final position and slide back and forth about ½ in. a few times, finishing in final position with exposed surface level and true. Do not force units into place.

Note: *Butt joint TileBoard generally used for above method.*

(18f) Nailing Over Wood Backing (Continuous or Furring Strips)—Start application at one corner of area to be covered, with nailing flanges of TileBoard unit toward center of area. Place box nails through nailing flange at each of three corners and not over 8 in. apart along edge over nailing member. Face nail units along borders of areas.

(18g) Lok-Pins—Place Lok-Pins in Lok-Grip Joint of each unit near two corners, and additional pins not more than 16 in. apart along long edge of unit or along edge bearing on nailing member.

Note: *Use (18f) and (18g) for application of Lok-Grip Joint TileBoard.*



(18h) Overlays — Apply decorative overlays by spot cementing and nailing or by nailing only. Use nails of sufficient length driven at an angle with heads set to assure adequate penetration of nailing base.

ACOUSTILITE AND FIBERLITE

(19) WORK INCLUDED

Note: *Here list and locate definitely the wall and ceiling areas to be covered. If more than one type of surface is used, list separately with the respective locations or areas covered. Accurate, detailed elevations of walls and plans of ceilings showing disposition and sizes of units should be included in the drawings and referred to here.*

(20) WOOD NAILING BASE AND FURRING STRIPS

(20a) Wood Nailing Base

Note: *As specified in paragraph 15a, page 13, for TileBoard.*

(20b) Furring Strips—1 x 2 in. *(1 x 3 in. for adhesive and nail application)* furring strips shall be applied to the framing members, so placed to form a firm nailing base for the units. Spacing shall not exceed 16 in. O.C.

Note: *Use (20a) or (20b) where Acoustilite or Fiberlite is not applied over plastered surfaces.*

(21) MATERIALS

Acoustical treatment shall be *(Acoustilite) (Fiberlite)* as sold by INSULITE, Minneapolis, Minn. Acoustical board shall be *(specify size and color).*

(22) CUTTING

All cutting and fitting shall be done in a neat workmanlike manner. Cut with a fine tooth saw using a minimum of pressure, a power saw or a sharp knife. A sandpaper block or wood file can be used to bevel cut edges.

(23) APPLICATION

(23a) General—(*Acoustilite*) (*Fiberlite*) shall be laid in exact accordance with the detail drawings.

(23b) Spacing—Bring units to a moderate contact. Do not force into place.

(23c) Adhesive—Adhesive shall be Insulite Adhesive No. 480.

(23d) Nails—Use *(4d finishing nails for Fiberlite) (5d finishing nails for Acoustilite).*

Note: *The use of cadmium coated or galvanized nails is desirable to guard against staining due to rust.*

(23e) Cementing Over Solid Background

Note: *As specified in paragraph 18e on this page. Care should be exercised in pressing and sliding the units into place so as not to indent the surface.*

(23f) Nailing Over Continuous Wood Backing or Plaster—Nail units in position with nails at each corner and along each edge. For 16 x 16 in. and larger sizes, place two nails near center of each unit. Drive nails at 60° angle with heads set just below the board's surface.

(23g) Nailing Over Furring Strips—Nail at each corner of each unit and not more than 4 in. apart along each nailing member.

Note: *Additional security may be obtained by applying adhesive spots 6 in. apart in line with each nailing member and not closer than ½ in. from edge. Spots are to be approximately ⅛ in. thick and 1 in. in diameter when in final position.*

FINISHING INSULITE
SIZING, PAINTING, STENCILING
SECTION 4 . . . . . MASTER SPECIFICATIONS

Note: *Insulite is frequently used as interior finish in its natural state. It may be finished with paints, plastic paints, wall coverings, etc. Insulite is designed to provide high insulating efficiency with decided structural strength—painting and finishing methods entirely satisfactory for plaster or wood surfaces are not necessarily most suitable for Insulite.*

(1) SIZING

Note: *Ins-Lite and Graylite, except for the application of stains and water paints and certain types of plastic paint, require a sizing coat. A size or primer that completely seals the surface pores will make it possible for the paint not only to cover uniformly and smoothly, but to go farther as well. To prevent "bleeding" of oil vehicle paints applied over Graylite or Bildrite, first size the board and use one coat of aluminum paint as a primer or use a size that in itself will prevent the asphalt from coming in contact with the subsequent paint coats.*

Where speed and economy are important, satisfactory results on Smoothcote and Satincote can be obtained with one coat of paint without use of a sealer. Where the highest quality finishes are desired, a first coat of sealer followed by succeeding coats of paint will be found most suitable.

(2) OIL OR VARNISH PAINTS

Note: *The Linen, Smoothcote or Satincote surface finish of Insulite is recommended for these finishes. The use of reputable, high grade interior paints is advocated to assure the best results. These may be obtained to produce varying degrees of luster, such as gloss, semi-gloss or eggshell and flat. In two coat work, the second coat may be brush stippled, sponge stippled in one or more contrasting tones, or glazed, all accomplished in the standard manner.*

Brushing lacquers, bronzing liquids, and other similar finishing materials may be applied to sized Insulite.

(2a) Sizing—Thoroughly size the surface, following instructions of the manufacturer as given on the container.

(2b) Painting—Over the sizing apply two coats of *(specify brand and manufacturer)* paint.

Note: *Describe further any particular surface finish.*

(3) WATER EMULSION PAINTS

Note: *If glazed, the Burlap textured surface is advocated, otherwise the Linen surface is recommended. These paints should be applied directly to the unsized Insulite surface. A single coat will give coverage, though two coats are recommended.*

(3a) Painting—Apply *(one) (two)* coats of *(specify brand and manufacturer)* paint. Paint shall be prepared, mixed, and applied in strict accordance with the manufacturer's directions.

(3b) Glazing—

Note: *These paints may also be glazed as are the varnish paints under the following directions:*

Add one (1) quart of spar varnish to the gallon of paste before mixing with water. Apply to the Insulite surface and glaze.

Note: *Describe further the particular glaze and effect desired.*

(4) WATER PAINTS

Note: *Either Burlap or Linen surface may be used dependent on effect. Paints of this class consist of water as a vehicle plus a glue or casein binder and pigment. Ordinary calcimines are of this type. They may be applied directly to unsized Insulite.*

Painting—Apply one (1) coat of *(calcimine) (casein) (specify brand and manufacturer of water paint.) (Calcimine) (paint)* shall be prepared, mixed, and applied in strict accordance with the manufacturer's directions.

(5) STENCILED AND BURNED DESIGNS

Note: *Decorative designs may be used to advantage on the surface of Insulite. These may be produced either by stenciling or burning the design.*

Decorative stencils of design and color selected by the architect shall be applied as follows: *(Here list and describe stencils required.)*

Stencil colors shall be made of pure Japan color paste thinned to the proper consistency with six (6) parts of turpentine, three (3) parts of linseed oil, to one (1) part of Japan Drier.

Burned designs shall be as follows: *(Here list the designs and location of surfaces to be treated.)* The burning shall be done with a tool made for this purpose.

(6) EXTERIOR PAINTING

Note: *Where either Bildrite or Graylite are used as an exterior finish they may be painted with an exterior grade water thinned resin paste paint.*

Painting—Apply *(one) (two)* coats of *(specify)* in accordance with manufacturer's directions.

Note: *Rust resistant nails should be used.*

INS-LITE AND GRAYLITE FOR EXTERIOR USE
SECTION 5 . . . . . .MASTER SPECIFICATIONS

Note: *Ins-Lite and Graylite Building Board may be used to advantage in many classes of work as the exterior finish over frame construction.*

(1) WORK INCLUDED

Note: *Here list and locate the wall surfaces to be covered. If more than one thickness is used or more than one type of surface exposed, list separately.*

(2) FRAMING

Studs shall be framed to conform accurately to the design of board spacing or paneling, set 16 in. O. C. Use additional studs and headers where necessary. Provide headers back of all horizontal wood trim. Where necessary, straighten and stay studs back of joints to provide central bearing under them.

(3) MATERIAL

Exterior finish shall be *(Ins-Lite) (Graylite)* Building Boards as made by INSULITE, Minneapolis, Minn. Boards shall be free from surface imperfections (½ in.) *(¾ in.) (1 in.)* thick *(as designated in paragraph 1)*, 4 ft. wide x 6, 7, 8, 9, 10 and 12 ft. long as best adapted.

(4) APPLICATION

(4a) General—Moisten and pile Insulite boards one day before application. Remove boards from the pile just prior to nailing to the framing. Moistening shall be accomplished by sprinkling lightly with sprinkling can or from a broom dipped into a pail of water.

Apply boards with the length parallel with framing members *(Burlap) (Linen)* face exposed. All joints shall center over framing members.

(4b) Spacing—Space boards ⅛ in. apart at all edges. At window and door frames bring boards in close contact with frame members.

(4c) Nails—

(4c1) Use ⅜ in. head, 1½ in. galvanized roofing nails for ½ in. thick boards.

(4c2) Use 8d galvanized or coated nails for *(¾ in.) (1 in.)* thick boards.

(4d) Nailing—First nail Insulite to intermediate framing members and then nail the edges. At all edges space nails 3 in. O. C. and ⅜ in. away from the edge. On intermediate framing members, space nails 6 in. O. C. Drive nails until the heads are flush with the surface.

(4e) Painting—

Note: *Painting should be done before battens or wood trim is applied over the joints. Wherever exposed directly to the weather, the Insulite surface should be sized and painted in accordance with Insulite specifications.*

(4f) Battens and Wood Trim—Apply battens and wood trim *(as detailed)* over Insulite boards with nails of sufficient length to pass through the boards and penetrate the framing members at least 1 inch.

ROOF INSULATION SPECIFICATIONS

A GUIDE TO GOOD PRACTICE—SHORT FORM

SECTION 6 . . . . . MASTER SPECIFICATIONS

GENERAL

Too often the roofing contractor's work has to be executed against time and frequently under unfavorable weather conditions. There are, however, certain provisions following which, if clearly set forth in the specifications, enable him to do better and more rapid work and at the same time assure a longer lifed roof to the owner.

Vapor barriers, seal courses and water cut-offs are approved for standard practice by the United Roofing Contractors' Association.

VAPOR BARRIER

The vapor barrier consists essentially of a special membrane, with very low vapor permeability, such as a multiple layer of roofing felts or of a particular kind of duplex paper or saturated and coated felt. Applied directly over the roof deck and mopped over with hot bitumen to receive the insulation.

SEAL COURSE FOR CONCRETE AND SIMILAR DECKS

Buildings with concrete and similar decks present two major problems to the roofer. He is often forced to lay the roofing, including the insulation, before other trades have left the roof. Again, he may be called upon to work during inclement weather. To provide against such contingencies, it is recommended that the specifications provide for the application of a standard seal course which acts as a temporary waterproof covering.

WATER CUT-OFFS

Provision against damage by sudden showers, overnight and week-end stopping of the insulation and roofing and assurance against spread of leaks from the sometimes seemingly inevitable defects or abuse can be made with properly installed water cut-offs through the body of the insulation. They are standard in good construction.

WOOD NAILING STRIPS

Insulation is not a nailing base. Therefore, it is necessary that wood nailing strips be provided on all roof decks to form a permanent, rigid nailing base for the secure attachment of all sheet metal flashing. These strips should be the full thickness of the insulation and should be at least 1 in. wider than the apron of the flashing.

RECOMMENDED NUMBER OF LAYERS

Where square edged units of Insulite Roof Insulation are used, for the best results the insulation should be laid in two (2) layers, the second breaking joints with the first layer.

BITUMENS AND FELTS

Where coal tar pitch is used, all felts should be impregnated with the same material. Where asphalt is used use asphalt impregnated felts.

SHORT FORM SPECIFICATION

Note: *List areas to be insulated.*

Insulation shall be Insulite *(Ins-Lite) (Graylite)* Roof Insulation, 23 in. x 47 in., *(specify thickness and edge treatment)* as manufactured by INSULITE, Minneapolis, Minnesota.

Apply in *(1) (2)* layer (s). Preparation of roof deck, nailing strips, seal course, water cutoffs, and application of roof insulation shall be in accordance with INSULITE'S current published specifications.

INSULITE ROOF INSULATION
OVER WOOD ROOF DECKS UNDER BUILT-UP ROOFING
SECTION 6A . . . . . MASTER SPECIFICATIONS

(1) WORK INCLUDED

Note: *List and locate the roof areas to be insulated. If more than one thickness of insulation is required on various roof areas, list and locate each separately.*

(2) INSULATION MATERIAL

Insulation shall be *(homogeneous) (laminated) (stitched) (specify)* thick *(offset) (square)* edge *(Ins-Lite) (Graylite)* Roof Insulation as made by INSULITE, Minneapolis, Minn., laid in *(one) (two)* layer(s). Boards shall be 23 x 47 in. All insulation shall be kept dry before, during and after application.

(3) WOOD NAILING STRIPS

Note: *To provide adequate attachment for miscellaneous sheet metal flashings, such as leader outlets, soil and vent flashings, metal base flashings, eave aprons, and gravel stops.*

The General Contractor will provide wood nailing strips to form a nailing base under all sheet metal flashing aprons and flanges of every nature. Strips shall be the full thickess of the insulation and at least 1 in. wider than the apron, rigidly secured to the roof construction with nails, lag bolts, expansion bolts, or other means of attachment as best adapted to the particular construction. This contractor shall check all nailing strips and notify the architect in writing of any defects for correction before proceeding with the laying of insulation and roofing.

(4) ROOF DECK

The surface of the roof deck shall be broomed clean, free from dirt, loose material, and thoroughly dry. All loose or springy boards shall be properly nailed before insulation is laid.

(5) BUILDING PAPER

Note: *Use this clause only in case the insulation is laid in one (1) layer.*

The entire roof area shall be covered with two (2) plies (lapped half) rosin sized building paper or 6 lb. coated felt. Nail sufficiently to hold in place until the insulation is laid over it.

Note: *Include (5) for insulation against heat loss only. Omit where high humidities are maintained.*

(6) VAPOR BARRIER

Over the wood roof deck lay two (2) plies (lapped half) of light weight (34 lbs. per square) bitumen prepared roofing having one side coated. Lay coated side down. Nail the back edge of each sheet with tin-capped, galvanized, barbed roofing nails spaced 12 in. O.C. All laps shall be mopped back 12 in. with hot bitumen. Do not mop over this membrane until just prior to the laying of insulation.

Note: *Include (6) only where high humidities are maintained.*

(7) APPLICATION OF INSULATION

(7a) General—Only as much Insulite Roof Insulation shall be laid over the roof area as can be covered by the finished roofing in any one day.

Lay the Insulite in (one) (*two*) layer(*s*) over the entire roof area. Adjoining edges of the boards shall be brought to a moderate contact but shall not be forced into place. Boards shall be laid in parallel courses with end joints in each course breaking with those of adjoining courses.

(7b) Mopping with Vapor Barrier—Mop the exposed vapor barrier felt liberally with hot (*coal tar pitch*) (*asphalt*). Only sufficient area to provide complete embedment of each Insulite board shall be mopped at a time.

Note: *Include (7b) only where high humidities are maintained.*

(7c) Two Layer Insulation—

(7c1) Where insulation is laid in two (2) layers the boards of the second layer shall be laid parallel with those of the first layer, and the joints of the second layer shall break joints with the first layer.

Nailing of two (2) layer insulation shall be through the second or top layer only. (*Do not nail the first layer.*)

Note: *Include (7c1) for insulation against heat loss only. Omit where high humidities are maintained.*

(7c2) Where insulation is laid in two (2) layers the boards of the second layer shall be laid parallel with those of the first layer, and the joints of the second layer shall break joints with those of the first layer.

Mop the exposed surface of the first layer liberally (*at least 25 lbs. per square*) with hot (*coal tar pitch*) (*asphalt*). Only sufficient area to provide complete embedment of each board shall be mopped at a time.

Note: *Include (7c2) only where high humidities are maintained.*

(7d) Water Cut-Offs—

The insulation, whether laid in one (1) or two (2) layers, shall be cut to the line designated for the water cut-off.

Water cut-offs shall consist of strips of (*coal tar pitch*) (*asphalt*) saturated roofing felt 8 to 10 in. wide stuck in bitumen to the roof, carried over the edge of the insulation, and turned over and stuck in bitumen to the top surface of the insulation.

They shall be located approximately 23 in. from and parallel to all vertical walls, such as parapets or penthouses, and around all leader heads, soil pipes, etc. The field of the roof shall be divided into rectangular areas approximately 30 ft. on a side, each area isolated with a water cut-off. Insert a water cut-off surrounding each day's work if the stop is not made at the designated water cut-off.

At least one (1) ply of the finished roofing shall be mopped to the water cut-off each night.

(7e) Nails—Nails shall be of sufficient length to pass through the insulation and penetrate the wood roof deck at least 1 in.

Note: *Include (7e) for insulation against heat loss only. Omit where high humidities are maintained.*

(7f) Nailing—Space nails 12 in. O.C. Each board shall be secured in place by nailing along each edge and staggered along the longitudinal center line.

Note: *Include (7f) for insulation against heat loss only. Omit where high humidities are maintained.*

(8) APPLICATION OF ROOFING

The exposed surface of the Insulite Roof Insulation shall receive a poured coat of hot (*coal tar pitch*) (*asphalt*) squeegeed or broomed to about $\frac{1}{16}$ in. thickness. Into this poured coat, while hot, the roofing felts shall be embedded.

Note: *The above in lieu of the ordinary mopping is advocated. Roofing shall be applied in accordance with the manufacturer's specifications as selected by the architect.*

INSULITE ROOF INSULATION

OVER ROOF DECKS OF MONOLITHIC CONCRETE, GYPSUM AND UNIT TILE UNDER BUILT-UP ROOFING OR PROMENADE TILE

SECTION 6B . . . . . MASTER SPECIFICATIONS

(1) WORK INCLUDED

Note: *Same as Master Specification 6A, page 17.*

(2) INSULATION MATERIAL

Note: *Same as Master Specification 6A, page 17.*

(3) ROOF DECK

(3a) General—The surface of the deck shall be reasonably smooth without depressions, broomed clean, free from dirt and loose material and thoroughly dry.

(3b) Unit Tile Construction—The joints of all tiles shall be properly pointed up.

Note: *Include (3b) where deck is of cement, gypsum, book, or similar tile construction.*

(3c) Under Promenade Tile Roofing—

Note: *Slope for proper drainage may be provided in either of the two following methods: the first is preferable.*

(3c1) The roof slab shall be formed flat and the drainage slopes built up over the Insulite Roof Insulation with the finished promenade tile roofing and its mortar bed.

(3c2) The roof slab shall be formed graded to all outlets with cement mortar fill before the seal course and the Insulite Roof Insulation is laid.

(4) SEAL COURSE

Note: *Recommended on all insulated roof decks, other than wood, to afford protection from rain, snow and ice that the insulation and finished roofing may be applied under favorable weather conditions after all other trades have left the roof.*

(4a) Priming the Deck—Prime the deck with asphalt roofing primer.

Note: *Include priming if asphalt mopping and asphalt felt are used for seal course. If coal tar pitch and felt are used, no primer is necessary.*

(4b) Mopping the Deck—*(Mop the entire roof area) (Spot or strip mop the individual tiles or units)* with a coat of hot *(coal tar pitch) (asphalt)*.

Note: *If deck is monolithic (concrete, poured gypsum), mopping shall be continuous. If deck is of precast units (book tile, precast gypsum, concrete), spot or strip mop the individual units.*

(4c) Laying the Seal Course—Over the mopping while hot, lay one *(1)* layer of 14 lb. *(coal tar pitch) (asphalt)* saturated roofing felt with 2 in. laps. Turn the felt up 4 in. against all walls and vertical surfaces and stick with bitumen and provide temporary thimbles at all leader heads, etc., to the end that the roof will be reasonably watertight against rain and melting snow. Do not mop over this membrane until just prior to the laying of insulation.

(5) APPLICATION OF INSULATION

(5a) General—

Note: *Same as (7a) General, Master Specification 6A, page 18.*

(5b) Mopping the Seal Course—Mop the exposed seal course liberally with hot *(coal tar pitch) (asphalt)*. Only sufficient area to provide complete embedment of each board shall be mopped at a time.

(5c) Two Layer Insulation—

Note: *Same as (7c2) Master Specification 6A, page 18.*

(4d) Water Cut-offs—

Note: *Same as (7d) Water Cut-Offs, Master Specification 6A, page 18.*

(6) APPLICATION OF ROOFING

Note: *Same as (8) Master Specification 6A, page 18.*

INSULITE ROOF INSULATION
OVER STEEL ROOF DECKS UNDER BUILT-UP ROOFING
SECTION 6C . . . . . MASTER SPECIFICATIONS

(1) WORK INCLUDED

Note: *Same as Master Specification 6A, page 17.*

(2) INSULATION MATERIAL

Note: *Same as Master Specification 6A, page 17.*

(3) SEAL COURSE

Note: *Include this seal course if the rooms beneath the roof carry high manufactured or incidental humidities. Do not use coal tar pitch mopping on steel decks.*

(3a) Mopping the Deck—Mop the entire roof area with a coat of hot asphalt.

(3b) Laying the Seal Course—

Note: *Same as (4c) Master Specification 6B, page 19, except asphalt saturated roofing felt is to be used.*

(4) APPLICATION OF INSULATION

(4a) Mopping the *(Seal Course) (Steel Deck)*— Mop the exposed *(seal course felt) (steel deck)* with hot asphalt. Only sufficient area to provide complete embedment of each board shall be mopped at a time.

(4b) General—

Note: *Same as (7a) General, Master Specification 6A, page 18.*

(4c) Two Layer Insulation—

Note: *Same as (7c2), Master Specification 6A, page 18.*

(4d) For steep Decks—In addition to the mopping, each Insulite board shall be secured to the steel deck with three (3) bolts along the top.

(4e) Water Cut-Offs—

Note: *Same as (7d) Water Cut-Offs, Master Specification 6A, page 18.*

(5) APPLICATION OF ROOFING

Note: *Same as (8) Master Specification 6A, page 18.*

INSULITE DIVISION

MINNESOTA AND ONTARIO PAPER COMPANY

[illegible]

JOHNS-MANVILLE

JM

PRODUCTS

Johns-Manville

Rock Wool Home Insulation

Residential Pipe and Boiler Insulations

Super-Felt Rock Wool Batts.....2

Blown Rock Wool.....3

Residential Pipe and Boiler Insulations.....4

Johns-Manville District Offices.....4

For New Structures: SUPER-FELT ROCK WOOL BATTS

Johns-Manville Super-Felt* Home Insulation is made in the handy batt form for insulating new structures and easily accessible areas of existing structures. Super-Felt is manufactured to a uniform density throughout. Thin spots and heat-leaking voids are eliminated. When Ful-Thik batts are installed in sidewalls and over ceilings, benefits of fuel savings up to 30 percent in winter, and rooms up to 15F cooler in summer are possible with this factory prefabricated, fireproof, permanent insulation.

Super-Felt Rock Wool is offered in standard batt form because experience shows that this type of unit is much more convenient to handle and install. It is manufactured in widths to fit snugly between standard framing and in lengths which require a minimum of on-the-job cutting. Super-Felt is much stronger than ordinary batts, far more resilient and has greater uniformity.

Each batt has a vapor-seal backing paper with extended flanges, which are also vapor-resistant, for over-lapping at the framing members. The vapor-seal backing paper is to protect against passage of abnormal humidity, that may be present in the house, into the structure.

The batts are installed with the paper backing toward the inside (warm side in winter). The paper laps on Ful-Thik* batts are tacked or stapled to the face of studs or rafters. Paper laps on Semi-Thik* batts (or where framing exceeds 4″ when Ful-Thik batts are used) are turned out on the sides and fastened.

Between ceiling joists, Super-Felt is laid paper side down on the lath or plaster base (the warm side in winter). Application instructions are included in each package. For further details about Super-Felt, write your nearest Johns-Manville office.

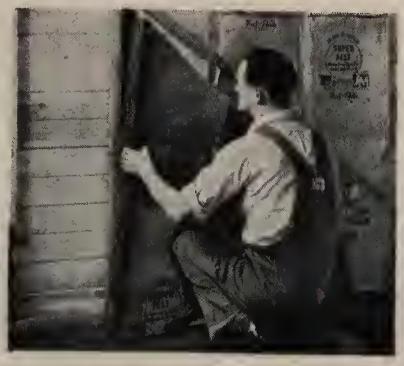
*Reg. U. S. Pat. Off.

Application

Super-Felt wan't settle. It is sa strong lt wili stand alone. When applied, it stays securely in place.

Made af rock waal, a minerol, Super-Felt is firepraof and Inargonic . . . permanent as the structure lt Insulates.

Clean, sharp cuts ta fit irregular spaces are quickly and easily made In Super-Felt with o knife or saw.



Super-Felt is quick and easy ta install, fits tightly, and provides maximum Insulating volue and year round comfort.

Standard Sizes

Super-Felt batts are furnished Ful-Thik for average wall stud thickness, and Semi-Thik with an average thickness of 2″. Sizes, packaging and coverage of both Ful-Thik and Semi-Thik batts are given in the following table.

SIZES, PACKAGING, COVERAGE AND WEIGHT*

Thickness Designation	Size, in.	Batts per package	Net area, sq ft	Thickness Designation	Size, in.	Batts per package	Net area, sq ft
Ful-Thik	15 x 24	16	40.00	Semi-Thik	15 x 24	24	60.00
	15 x 48	8	40.00		15 x 48	12	60.00
	19 x 24	16	50.67		19 x 24	24	76.00
	19 x 48	8	50.67		19 x 48	12	76.00
	23 x 24	16	61.33		23 x 24	24	92.00
	23 x 48	8	61.33		23 x 48	12	92.00

*Average shipping weight, Ful-Thik, 1145 ib per 1000 sq ft.

For Existing Structures: BLOWN ROCK WOOL INSULATION, *Type A*

Over 1,000,000 homes have been insulated with Johns-Manville Rock-Wool Home Insulation. This permanent material surrounds the living areas of the structure with a rot-proof, fireproof insulation which makes possible fuel savings up to 30 percent in winter and helps keep rooms up to 15F cooler in summer.

For the most part, Type A Rock Wool is blown in from the outside, with a minimum of litter, dust and disturbance. Usual home activities continue without interruption, and shrubs, trees and lawns are unharmed. The machine for blowing the Rock Wool is mounted in the applicator's truck.

J-M Type A Rock Wool is blown pneumatically and reaches all the hollow spaces. The uniform fill (about 5 to 8 lb per cu ft) assures maximum thermal efficiency.

Because proper installation of Blown Rock Wool Insulation is so important, this responsibility is entrusted only to Johns-Manville Installation Units or to Johns-Manville Franchised Home Insulation Contractors. In either case, the applicators are well-trained and fully experienced.

This method is the only practical way of insulating houses already built, whether the exterior is of wood, stucco or brick veneer.

J-M Blown Home Insulation, as installed pneumatically by skilled crews, 1. Will not settle; 2. Adds protection against fire; 3. Saves fuel; 4. Increases livability throughout the year; 5. Provides a permanent improvement to the property; and 6. Offers the property owner a substantial return on his investment.

Application

Openings are made near the top of wall panels and the nozzle of the hose from the blowing machine is inserted for blowing in Johns-Manville Rock Wool.

After the Johns-Manville Rock Wool Insulation has been installed, the siding material removed from the exterior of the house for access is carefully replaced.

Blowing Johns-Manville Rock Wool between the joists of an unfloored attic contributes materially to the comfort of the rooms in the lower part of the house.

In a floored attic, sufficient boards are removed to assure access to the entire area to be insulated, and these boards are replaced after insulating.

Johns-Manville pioneered in the development of Home Insulation and is the recognized leader in this field today. J-M Applicators are well-trained and fully experienced.

RESIDENTIAL PIPE AND BOILER INSULATIONS

Research is the cornerstone of Johns-Manville Insulation Service . . . and the J-M Research Laboratory — largest of its kind in the world — is continually progressing in the development of more efficient insulations for all conditions.

Johns-Manville residential pipe and boiler insulations are important members of the J-M family of insulations, which have been developed for every kind of equipment throughout the entire field of domestic and industrial processes where temperatures range from sub-zero to plus 3000F and more.

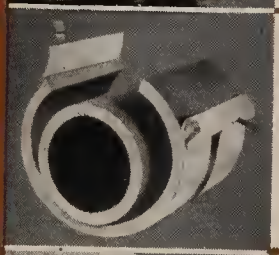
The five insulations described at the right are recommended for their thermal efficiency, durability and economy. Additional Johns-Manville Insulations include Zero Pipe Covering to retard freezing in exposed pipes; Insulating Cements; Asbestos Millboard; Furnace Cement; and Insulating Fire Brick for domestic oil burners. Write your nearest Johns-Manville office for complete information.

*Pre-Shrunk Asbestocel**

Cellular type insulation for residential steam and hot water heating lines. Made of alternate layers of plain and corrugated asbestos felts. Three finishes: Glazed White, will not carry flames; Asbestos-Covered High-Speed Finish; and Regular Canvas-Covered Finish. Comes in 3-ft sections; 2 to 8 plies (¼" per ply) thick.

J-M 85% Magnesia

The quality insulation of the moulded type for residential heating systems. Made from basic carbonate of magnesia and asbestos. *Pipe Insulation:* 3-ft lengths; Standard, 1½", 2", 2½", Double Standard and 3" (double layer) thicknesses. *Blocks:* 18" and 36"-lengths; 3", 6", 9" and 12"-widths; 1" through 4" thick.

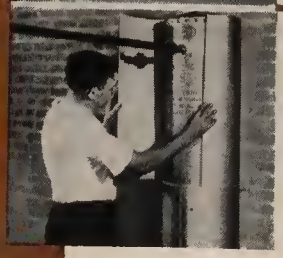


Pre-Shrunk Wool Felt

Specially indented, moisture-resisting wool felt insulation for residential hot and cold water service lines. Promotes quicker delivery of water at desired temperatures. Furnished in 3-ft sections; in ½", ¾", 1", Double ½" and Double ¾"-thicknesses for all standard pipe sizes from ½" and up.

Anti-Sweat

A superior insulation made from pre-shrunk insulating felts and moisture-resisting felts. Used on cold water lines to keep pipes cold and to prevent condensation and resultant damage from dripping. Thickness required depends upon temperature of the pipe and surrounding air, and the humidity. Submit details for recommendations.



Asbestocel Range Boiler Jackets*

Made of moisture-resistant asbestos felts; highly effective in keeping hot water hot. Supplied with fire-proof Glazed White or plain asbestos finish, which may be painted if desired, in standard 3-ply (about ¼" per ply) construction to fit boilers of 30, 40, 52, 66, 82 and 100-gal capacities. Other sizes available.

*Reg. U. S. Pat. Off.

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Johns-Manville

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TECHNICAL BOOK

KIMSUL
REG U S PAT OFF
INSULATION

A. I. A.
FILE NO. 37B

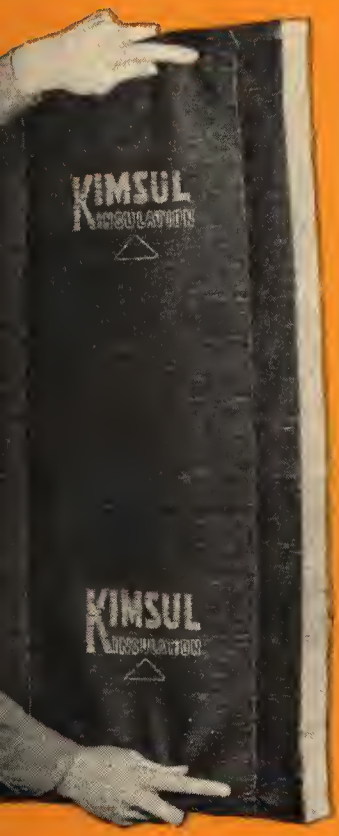
THERMAL EFFICIENCY page 7

FEDERAL SPECIFICATION page 9

SOUND DEADENING page 12

Kimsul expands to 5 times its packaged length

A Section of a roll of KIMSUL unexpanded, as packaged to facilitate handling, storage and shipment.



Same piece expanded 5 times its packaged length, ready to be installed.

Drawing below, reproduced from an actual photograph, shows the 150-foot continuous length of 16-inch KIMSUL that is packaged in one easily handled roll of KIMSUL.

Step 1—Attach with fiber strip at top.

Step 2—Place another strip on other end.

Step 3—Expand blanket until stitching is taut and nail or staple through strip at bottom.

Step 4—Extra-wide blanket permits fastening along edges. Use same procedure for floors and ceilings.

Copyright 1948 by Kimberly-Clark Corp.

KIMSUL* is basically different

KIMSUL* is unique among building insulations and acoustical materials because it is made of many individual plies—each one a continuous separate layer of soft, clean, creped, asphalt-treated cellulose fibers. Each ply is controlled carefully in manufacture both as to thickness and crepe. The result is a flexible blanket, inherently uniform in thickness—an important factor in a thermal or sound insulating material.

The KIMSUL plies and the creped PYROGARD* cover are held together with rows of strong stitching. The entire assembly is permanently resistant to fire, vermin and mold.

To overcome the disadvantages of extreme bulk and liability to damage, common to insulating materials, KIMSUL is reduced to 1/5th its installed volume for shipment and storage. Small, high-density rolls are easy to handle and resist damage. On the job, the KIMSUL blanket is expanded in installation. The stitching controls the expansion to the density of maximum efficiency.

UNEXPANDED

KIMSUL is packaged compressed in this form for easier shipment, handling and storage—an exclusive advantage.

EXPANDED

Note how the multi-ply construction provides high insulating value when the blanket is expanded for installation.

Edge view (actual size)
Double-Thick KIMSUL insulation

ademark

Scientific control

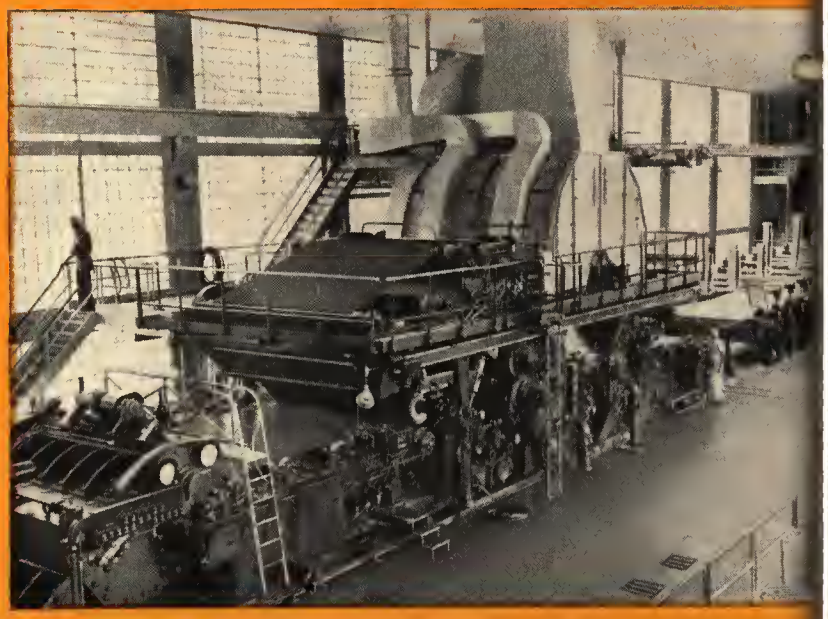
A PRODUCT OF Kimberly Clark RESEARCH

Research and Development — Equal to the best facilities in existence, the equipment in these buildings makes possible exact determination of KIMSUL performance as well as the investigation of new and improved methods and materials. Extensive physical, chemical and experimental laboratories are housed in a separate building at Neenah, Wisconsin, and employ the services of a large staff of scientists and technicians.

Manufacture — Engineering and operating skill plus precision equipment constitute the completely integrated Kimberly-Clark manufacturing operation that transfers tested scientific design from laboratory to high production machines. (See right). This modern equipment transforms cellulose fibers into asphalt-treated plies of uniform substance, thickness and crepe. Thus the completed blanket, composed of many individual plies, is precisely controlled to meet predetermined scientific standards for effective insulation.

Customer Acceptance Laboratory — Completely independent of the manufacturing mills, this laboratory takes many samples each day for critical test and examination from the customer's viewpoint. These Customer Acceptance examinations include tests of reaction to temperature, humidity, fire, mold, and age; installation tests; and checks on dimensions, appearance, packaging, and other factors. These tests are entirely separate from the many routine mill laboratory tests used to control production.

Research and Development Laboratories employ 150 scientists and technicians.



Manufacture of KIMSUL requires operating skill and high speed precision machines.

Customer Acceptance Laboratory assures the customer of uniformly high quality at all times.

Insulate for comfort

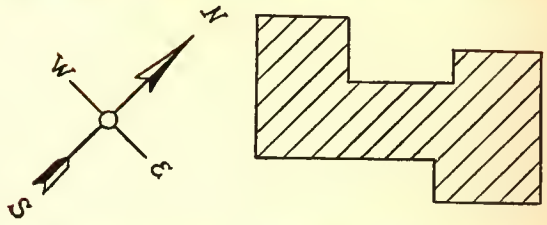
Engineering Reasons

Radiant Heat Loss is governed by surface temperatures. In a room heated by radiant panels or by any other means, low wall surface temperatures drain radiant heat energy from the body. This causes a feeling of coolness and uneven heat, and is especially noticeable in close proximity to cool walls or windows. In addition to insulating all exposed walls, ceilings and floors, the windows should be double glazed. Heating control is improved by complete insulation.

Air Stratification and Drafts – Cold ceilings, walls, and floors cool the room air which touches these surfaces. This cooled air, as it settles down toward the floor, is a draft. As a cool layer of air forms on the floor, the warmer air is forced upward, and the room suffers from stratification. A cold floor (with no heat below) will stay cold and uncomfortable without insulation.

WINTER CONDITIONS

Variable Exposure—Heating systems are designed to take account of average anticipated exposure to cold winds and other extremes. This can only approximate satisfactory comfort unless the exposed walls, ceilings and floors are insulated to minimize the effects of variable exposure, changing weather.



Coolness Balance – In hot weather the achievement of comfortable conditions within a structure, without using refrigeration, requires that the coolness of the night be retained through the following day, or at least that the interior be protected from the heat of the day. For maximum results, all the following measures must be utilized: (1) low density insulation of not too great thickness, (2) wall insulation, (3) attic ventilation night and day, (4) increased ventilation of the building interior at night, and (5) window protection from the sun's heat.

"Radiant Coolness" is governed by surface temperatures. Just as cool walls and ceilings radiate unwanted coolness in the winter, warm walls "radiate" unwanted warmth in the summer. When air temperatures within a room are already at a maximum for comfort, the radiant heat added by warm surrounding surfaces (uninsulated walls and ceilings) causes discomfort by raising the effective temperature above the limits of the comfort zone.

SUMMER CONDITIONS

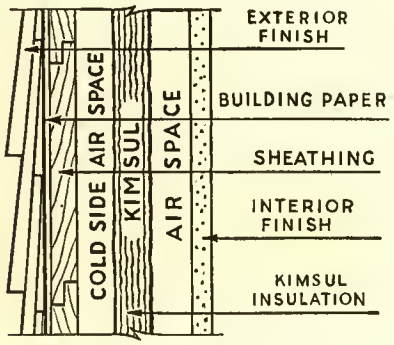
Correct Design Avoids Trouble

Problems

Heat Lag in hot weather may nullify the benefits of insulating by carrying over, within the structure of a house, the heat of the preceding day. In other words, such construction cannot make full use of lower night temperatures to "pre-cool" for the following day.

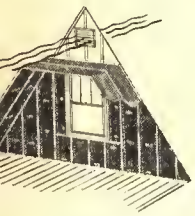
Major causes are: (1) insulation too thick and of too great weight per cubic foot, and (2) lack of ventilation between insulation and roof. Whenever possible the interior of buildings should be ventilated by positive means at night.

Condensation may occur in walls and under roofs during prolonged cold weather, resulting in paint failures, rot, etc. It is invited by: (1) excessive humidity within the building, (2) tight construction with reduced heat losses, (3) use of vapor seals as exterior building paper, and (4) lack of breathing spaces in walls and absence of ventilation in attics. Condensation is but moisture condensing out of the air and occurs on the first surface available which is cold enough to be below the dew point of this air. A general rule is to make the vapor resistance of the warm (interior) side of the wall three times greater than the cold (exterior) side.

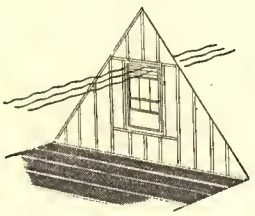


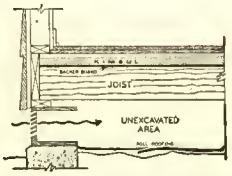
Solutions

Air Spaces in Walls—Although there are few cases of severe condensation, the air space for ventilation is at all times desirable. The provision of this air space is a prime requisite for correct insulation design, and will reduce, if not eliminate, all but serious condensation troubles. Care should be taken to use a vapor-permeable building paper—not a vapor seal—under the exterior finish. For Vapor Seal uses, see paragraph below.

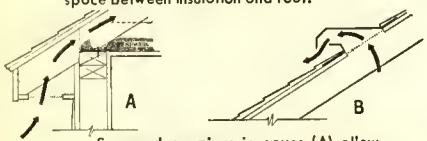


Louvers in both goble ends ventilate the spoce between insulotion ond roof.

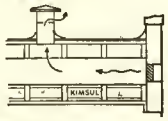




Louvers ventilote spce between floor and ground. Add roll roofing if ground is damp.



Screened openings in eoves (A) ollow oir to enter obove the insulotion ond leove through the roof vents.



When flot roof is insuloted, use both woll ond roof vents os indicoted.

Ventilation in Attics and Floors—Ventilation should never be omitted whenever insulation is installed. In hot weather, it avoids excessively high temperatures. In cold weather, it allows water vapor to escape, thereby reducing the possibility of condensation. Use approximately one square foot of louver area per 300 square feet of ceiling area, distributed in at least two louvers.

Water Vapor originates by evaporation within the building and generally causes trouble by condensing on windows and within walls and roof construction when natural air change does not carry it off. Relief may be obtained by: (1) increasing the ventilation where water vapor originates, as in cooking, washing, clothes drying, bathing, and (2) ventilating with outside air the spaces in the construction where condensation can occur, or (3) by use of vapor seal.

Vapor seal should be used with Commercial Thick KIMSUL in black area only; with Standard Thick KIMSUL in black and gray areas; and with Double Thick KIMSUL in black, gray, and lined areas.

Vapor Seal—In addition to ventilation described above, in colder climates or where high humidity is present within the building, a vapor seal should be used to reduce the flow of water vapor through the walls and unventilated ceilings. It must be installed on the warm side of the insulation—i.e., between the insulation and the inside of the building.

Photograph at left shows KIMSUL Vapor Seal Paper 50 inches wide being installed over framing members, directly beneath plaster base or wallboard. Joints occur only at framing. Two coat lead and oil, enamel, rubber base, asphalt, or aluminum paints, also metal foil backed lath, are good vapor seals.

A vapor seal (vapor barrier) should have a water vapor permeability not exceeding one grain per square foot per hour per inch of mercury, difference in vapor pressure.

Walls, ceilings, floors—all need insulation

Where the Heat Goes

Walls . . .	38%
Ceilings, Roof .	25%
Glass, Doors, etc.	21%
Air infiltration .	14%
Floors . . .	2%

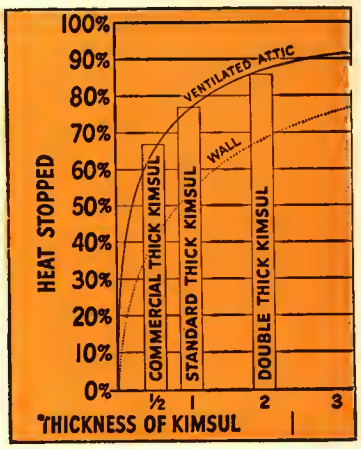
Heat loss distribution, 2-story uninsulated house with storm sash, heated basement—A. S. H. & V. E. 1948 Guide, Page 252.

Where to Insulate

All the heat from the furnace gets out somewhere. Usual construction allows heat to flow through roof faster than walls. But because the wall area is greater than the ceiling area, the greatest heat loss, without insulation, is actually through the walls (38%). Insulate all exterior walls, also all floors, ceilings, or walls which are exposed to unheated areas.

½", 1", 2" thicknesses —plus air spaces

Insulation slows the flow of heat but does not stop it entirely. Curves at right indicate that thicknesses greater than Double Thick KIMSUL probably exceed the economic thickness. Little additional reduction will result from greater thickness. The first increment of insulation does the most work and pays for itself quickest.



"U" FACTORS — HEAT FLOW THROUGH GIVEN CONSTRUCTIONS

KIMSUL FACTORS

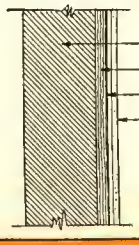
k = 0.27 *
C" =
Commercial Thick 0.540
Standard Thick . 0.270
Double Thick . 0.135

*Authority J. C. Peebles, Armour Institute.

WOOD STUD WALL

Wood Shingles, Siding or Clapboards
Sheathing Ⓐ, Ⓑ or Ⓒ
KIMSUL Insulation
Rock Lath and Plaster

A. 25/32" Wood Sheathing
B. 1/2" Gypsum Board
C. 25/32" Rigid Insulation Board



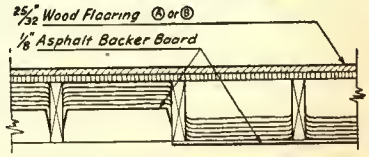
MASONRY WALL

Masonry Ⓐ, Ⓑ or Ⓒ
KIMSUL Insulation
1" Furring
Rock Lath and Plaster

A. 8" Hollow Clay Tile or Cinder Blocks
B. 4" Brk. & 8" Cdr. Blk.
C. 8" Brick

FLOOR OVER UNHEATED SPACE

25/32" Wood Flooring Ⓐ or Ⓑ
1/8" Asphalt Backer Board

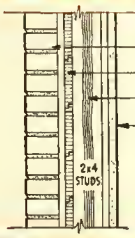


A. Hardwood and Softwood Sub Flooring
B. Hardwood Flooring

KIMSUL THICKNESS SPECIFICATION (APPROX. DIMENSIONS)	KIMSUL BETWEEN STUDS						KIMSUL OVER STUDS					
	A		B		C		A		B		C	
	U	%	U	%	U	%	U	%	U	%	U	%
NO INSULATION	.25	—	.31	—	.19	—	.25	—	.31	—	.19	—
COMMERCIAL THICK ½"	.15	40	.17	45	.13	32	.17	32	.20	36	.14	26
STANDARD THICK 1"	.12	52	.13	58	.10	47	.13	48	.14	55	.11	42
DOUBLE THICK 2"	.08	68	.09	71	.07	63	.09	64	—	—	—	—

KIMSUL THICKNESS SPECIFICATION (APPROX. DIMENSIONS)	KIMSUL OVER OR BETWEEN FURRING						NO AIR SPACE				AIR SPACE			
	A		B		C		A		B		A		B	
	U	%	U	%	U	%	U	%	U	%	U	%	U	%
NO INSULATION	.27	—	.24	—	.30	—	.30	—	.43	—	.30	—	.43	—
COMMERCIAL THICK ½"	.18	33	.17	29	.19	37	.19	37	.23	46	.16	47	.19	56
STANDARD THICK 1"	.15	44	.14	42	.16	47	.14	53	.16	63	.12	60	.14	67
DOUBLE THICK 2"	—	—	—	—	—	—	.09	70	.10	77	.08	73	.09	79

Foot Notes:
*Small air space and mortar between paper and brick veneer neglected.
**Based on two air spaces.



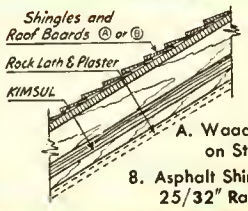
***BRICK VENEER WALL**

Face Brick-4"
Sheathing Ⓐ, Ⓑ or Ⓒ
KIMSUL Insulation
Rock Lath and Plaster

A. 25/32" Wood Sheathing
B. 1/2" Gypsum Board
C. 25/32" Rigid Insulation Board

PITCHED ROOF

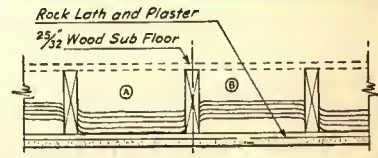
Shingles and Roof Boards Ⓐ or Ⓑ
Rock Lath & Plaster
KIMSUL



A. Waad Shingles on Strips
B. Asphalt Shingles on 25/32" Raof Boards

TOP FLOOR CEILING—VENTILATED ATTIC

Rock Lath and Plaster
25/32" Wood Sub Floor



A. KIMSUL on Plaster Bose
B. Air Space Between KIMSUL & Pl. Base

KIMSUL THICKNESS SPECIFICATION (APPROX. DIMENSIONS)	KIMSUL BETWEEN STUDS						KIMSUL OVER STUDS					
	A		B		C		A		B		C	
	U	%	U	%	U	%	U	%	U	%	U	%
NO INSULATION	.27	—	.35	—	.21	—	.27	—	.35	—	.21	—
COMMERCIAL THICK ½"	.15	44	.18	49	.13	38	.18	33	.21	40	.15	29
STANDARD THICK 1"	.12	56	.13	63	.11	48	.13	52	.15	57	.12	43
DOUBLE THICK 2"	.08	70	.09	74	.08	62	.09	67	—	—	—	—

KIMSUL THICKNESS SPECIFICATION (APPROX. DIMENSIONS)	NO PLASTER				**ROCK LATH AND PLASTER				NO SUB FLOOR				SUB FLOOR			
	A		B		A		B		A		B		A		B	
	U	%	U	%	U	%	U	%	U	%	U	%	U	%	U	%
NO INSULATION	.46	—	.56	—	.29	—	.32	—	.75	—	.75	—	.32	—	.32	—
COMMERCIAL THICK ½"	.20	57	.22	61	.16	45	.17	47	.31	59	.25	67	.20	38	.18	44
STANDARD THICK 1"	.15	67	.16	72	.12	59	.13	59	.20	73	.17	77	.15	53	.13	59
DOUBLE THICK 2"	.10	78	.10	82	.08	72	.09	72	.11	85	.11	85	.10	69	.09	72

DEFINITIONS:
U—Overall coefficient of heat transmission (thetmal transmittance) in Btu/hr./sq. ft. of assembled sttuctural section per/°F. diff. in the temperature on exposed faces.

"k"—Thermal conductivity of homogeneous material in Btu/hr./sq. ft./in./°F diff.

%—Percent of heat transfer stopped=

$$\frac{U\ (\text{not insulated}) - (U\ \text{insulated})}{U\ (\text{not insulated})} \times 100$$

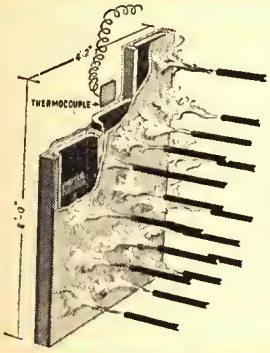
NOTES: All calculations carried to second decimal only. All calculations are based on recommended conductivities for computing heat transmission coefficients as published in the A.S.H.V.E. Guide for 1947. Coefficients may be used with sufficient accutacy for plastet on wood or metal lath.

Flexible—fits into corners, tucks behind pipes, electrical wiring and other "tight spots". No areas unprotected.

Clean—no sharp particles to irritate, nothing to sift; stitched ply construction prevents settling or sagging.

Caulkable—one ply or many plies may be compressed to high density in narrow or wide joints, sealing out cold air and sound. KIMSUL asphalt-treated wood fiber does not break up during caulking or tamping operation.

Continuous, no joints—workmanship determines the effective efficiency of an insulation job. Positive end attachment, no intermediate joints, uniform ply construction, and extra blanket width—assure a good job.



UNDERWRITERS A. S. T. M. FIRE TEST

Flames in a gas fired furnace play directly on surface of test panel, reaching temperatures as high as 1700° F.

Fire-Resistant—Special permanent chemical treatment makes KIMSUL resist fire. No insulating material can make a wood frame building fire-proof, but insulation should never increase the hazard of fire.

		TONS OF COAL USED PER SEASON	TONS SAVED PER SEASON
	No insulation	12.1	—
KIMSUL in Walls and Ceilings	Commercial Thick	8.0	4.1
	Standard Thick	7.1	5.0
	Double Thick	6.4	5.7
	Commercial Thick in Walls Standard Thick in Ceilings	7.5	4.6
	Commercial Thick in Walls Double Thick in Ceilings	7.0	5.1
	Standard Thick in Walls Double Thick in Ceilings	6.7	5.4
KIMSUL in Ceilings only	Commercial Thick	9.1	3.0
	Standard Thick	8.5	3.6
	Double Thick	8.1	4.0

Objective: Comfort—in winter, due to warmer surrounding surfaces of walls, ceilings and floors; in summer, due to protection from excessive heat.

Attendant Benefit: Fuel Saving—as shown above for a one-story Chicago residence.

Small Storage Space—Easy Handling KIMSUL shipping package is small, tough—1/5th installed volume.

Other packages are necessarily bulky, hard to carry and store, easily damaged.

Insulated Fastening Edge—KIMSUL blankets are extra wide to provide fully insulated fastening edges, and to insure completely filling spaces where framing may be slightly off center.

Over-Framing Compressibility—KIMSUL insulation, in Standard and Commercial Thicknesses, may be easily compressed over framing members. Especially valuable for 48" wide KIMSUL—suitable for mass or prefabricated construction.

PYROGARD fire-resistant cover—(exclusive KIMSUL feature) prevents flame-spread. Insulation covers and wrappers customarily used are highly flammable and constitute a hazard, regardless of the material used for insulation.

Many-Layer, Stitched—Each ply is continuous and separate; all are held together at the density of maximum efficiency by strong stitching. No heat leaking thin spots, no money-wasting thick spots in the KIMSUL blanket.

LIGHT WEIGHT—1.4 lb. per cubic foot. Standard Thick KIMSUL weighs only 115 lbs. per 1000 square feet.

MOISTURE-RESISTANT—Asphalt treatment of each ply sheds water.

RESISTS MOLD, ROT, VERMIN—The materials of which KIMSUL is made offer no subsistence to vermin or insects. Special chemical treatment resists mold and fungus.

ACOUSTICAL USES—See pages 10-11.

"k" FACTOR—0.27 Btu/sq.ft./hr./°F.

Any Width, Any Length—It's easy to cut exact lengths or narrow widths. Avoids muss and fuss. Workmen do a fast, neat job—with KIMSUL.

Specifications

Typical Architectural Specifications

THERMAL

KIMSUL insulation is acceptable under U. S. Government Federal Specification HH-I-571a.

Insulation: All exterior walls and all ceilings, floors, and walls exposed to the roof, overhangs, unexcavated spaces or to other unheated areas shall be insulated with (Commercial Thick—Standard Thick—Double Thick) KIMSUL blanket insulation as manufactured by Kimberly-Clark Corporation, Neenah, Wisconsin. Insulation shall be installed in accordance with the manufacturer's instructions. All spaces around window and door openings in the exterior walls are to be tightly caulked with KIMSUL.

Vapor Seal (when required): Exterior walls, and walls, floors and ceilings exposed to unheated and unventilated areas shall be vapor sealed to prevent condensation. Vapor seal shall be applied to warm side of the construction, using a vapor seal paper consisting of not less than a 50-lb. continuous asphalt film faced on both sides with not less than a 30-lb. Kraft paper, or using other vapor seal, such as paint or special lath with a minimum permeability of one grain per square foot per hour per inch of mercury difference in vapor pressure. All joints should occur at framing members and be overlapped 2″ and the vapor seal paper installed so joints run parallel to and over the framing members. The vapor seal paper shall run out onto the floor and ceiling 6″ to 8″.

Ventilation: All attic spaces and crawl spaces shall be ventilated with two or more louvers arranged to provide cross ventilation with free area of at least one square foot for every 300 square feet of exposed interior surface.

ACOUSTICAL

(See pages 10-11)

Sound Deadening: All sound resisting partitions, floors, and ceilings shall be of the (independent support-cushioned support) type exactly as indicated in the drawings with (Commercial Thick—Standard Thick) KIMSUL blanket insulation as manufactured by the Kimberly-Clark Corporation, Neenah, Wisconsin. Insulation shall be installed in accordance with the manufacturer's instructions.

Care shall be taken to avoid all unnecessary contact between one face of the wall and the other. All joints and cracks shall be tightly filled with compressed KIMSUL, either by caulking after construction or by insertion of strips of KIMSUL during construction.

Sound Absorption: All sound absorbing areas shall be constructed as shown on the plans, using KIMSUL blanket insulation (Double Thick—Standard Thick—Commercial Thick) as the sound absorbing element. Care shall be taken that the spacing between the KIMSUL insulation and the backing surface be as indicated, and that the KIMSUL blanket be installed with the cover, if any, facing away from the source of sound.

NOTE: Architects, builders and others may obtain schematic drawings showing KIMSUL acoustical applications by writing to Kimberly-Clark Corporation, Neenah, Wisconsin.

COLD-STORAGE CONSTRUCTION. For details see Application Data Sheet No. 11, published by Kimberly-Clark Corp.

KIMSUL BUILDING INSULATION

THICKNESSES	THERMAL RESISTANCE "R"	SOUND ABSORPTION (AV.)	SQUARE FEET PER ROLL STANDARD WIDTHS		APPROXIMATE NET WEIGHT PER 1000 SQ. FT.	APPROXIMATE SHIPPING WEIGHT PER 1000 SQ. FT.
			16, 20, 24 INCHES	48 INCHES		
COMMERCIAL THICK (Approx. 0.5 In.)	1.85	.40	200	500	68 Lbs.	75 Lbs.
STANDARD THICK (Approx. 1.0)	3.70	.55	200	500	120	126
DOUBLE THICK (Approx. 2.0)	7.40	.70	100	250	225	236

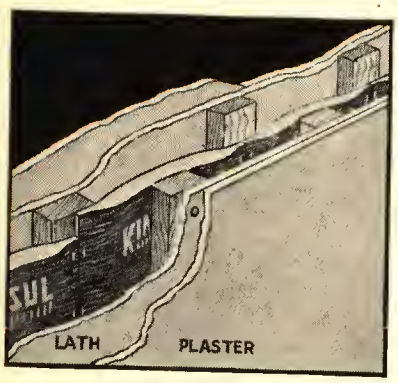
Commercial Thick rolls contain two blankets (100 sq. ft. each). Standard Thick and Double Thick rolls contain one 100 sq. ft. blanket.

KIMSUL VAPOR SEAL PAPER

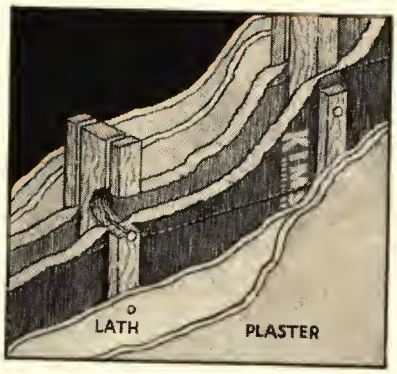
A duplex Kraft and asphalt sheet (30-55-30). Available in 50-inch width rolls to cover three conventional stud spaces with lap. Vapor permeability (maximum): one grain/sq. ft./hour/inch of mercury difference in vapor pressure. Weight: 1000 sq. ft. roll—40 lbs.

Sound Deadening

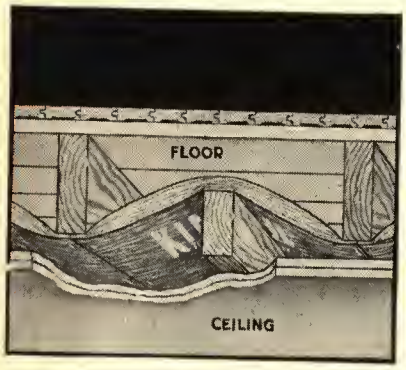
(one room to another)



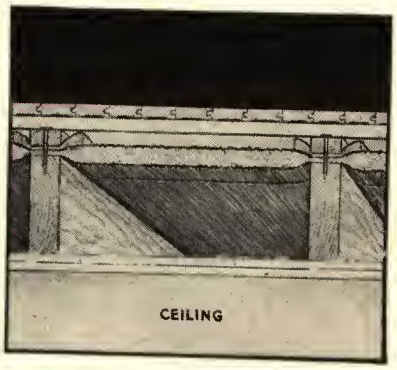
INDEPENDENT SUPPORT



CUSHIONED SUPPORT



INDEPENDENT SUPPORT



CUSHIONED SUPPORT

KIMSUL insulation performs four functions in sound deadening construction:

1) Absorbs sound originated by diaphragmatic action.

2) Absorbs sound which leaks through joints and cracks, present initially or opening with drying or age. Thus KIMSUL helps insure against serious deterioration of the construction's sound resistance.

3) Cushions furring strip type of construction.

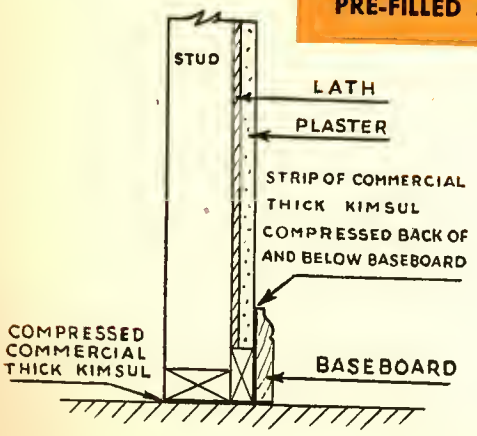
4) Prevents accidental bridging or short circuiting of sound-resisting construction during erection.

The four sound resisting constructions shown provide at least 45 decibels of sound reduction from either side to the other. This is regarded as excellent performance. Commercial Thick or Standard Thick KIMSUL is usually sufficient. KIMSUL wrapped around noisy water and soil pipes helps reduce the sound nuisance where pipes are not bonded to the structure. Strips of KIMSUL compressed or caulked tightly into joints in any type of construction stop sound leakage through such joints.

WARNING—Care must be exercised in all sound control work in specifying and in supervision on the job.

Write Kimberly-Clark Corporation, Neenah, Wisconsin, concerning applications of KIMSUL in any case you have under consideration.

PRE-FILLED JOINTS



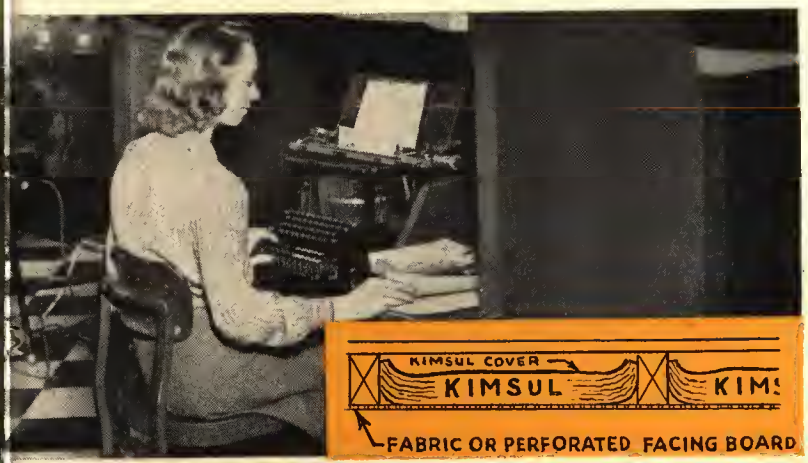
Cracks and joints in conventional construction allow air borne sound to leak through. Method at left shows KIMSUL inserted during construction to caulk these joints. Extreme compressibility allows KIMSUL to conform to space back of baseboards, window and door frames, and under plates, etc.

Sound Absorption

(within a room)

Acoustical Ceilings, Walls

Sound Studio Panels



Machine Noise Reduction

Acoustical Treatment

KIMSUL insulation, due to its *many-layer* construction and porous nature, is a good sound absorbing element in constructions designed to control sound by absorption. Sound absorption may be varied over the frequency range by judicious spacing of KIMSUL away from a reflective surface and by varying the type of covering. Average coefficients of sound absorption as determined by Electrical Research Products, Inc. are:

Double Thick	**70%**
Standard Thick	**55%**
Commercial Thick	**40%**

The multi-ply stitched blanket construction of KIMSUL provides a self-contained sound absorbing element, not requiring wrapping to restrain loose fibers. This explains the low comparative cost of KIMSUL for acoustical purposes.

Except in special cases where unusual sound absorption over the frequency range is desired, KIMSUL should be installed with the cover side facing away from the source of sound. In general, it is desirable to space the sound absorber away from the reflecting – backing – surface from one to six inches, because in this way greater sound absorption at the lower frequencies is obtained. As indicated in sketches at the left various coverings may be used.

Thermal and Acoustical Blanket

for every type of insulation Job

KIMSUL INSULATION

A PRODUCT OF Kimberly Clark RESEARCH

Beneath the Northern Lights — In the most frigid outposts of our security, Navy men find their famous Quonset huts made more comfortable with KIMSUL.

Year 'Round Home Comfort — Thousands of private homes — of all classes, in all climates — enjoy greater all-season comfort with KIMSUL. KIMSUL is specified for government mass housing projects, too.

Atom Bomb Cities — Los Alamos, Oak Ridge, and Richland have more than 7,000,000 square feet of KIMSUL insulation in their homes, schools, churches, plants and commercial buildings.

Under Tropic Sun — KIMSUL keeps Quonsets appreciably cooler in island and desert installations. Makes life more pleasant for their Armed Forces garrisons.

Thermal and Acoustical insulation with KIMSUL makes many of today's finest passenger cars warmer and quieter. The choice of leading manufacturers.

House Trailers use more KIMSUL than any other brand of insulation. Efficiency, ease of handling, compressibility under framing members, and permanence of installation are the main reasons why.

Quiets Noise — Non-settling KIMSUL increases the efficiency of domestic refrigerators and acts as an acoustical treatment to silence motor vibrations.

Refrigerated Cargoes are well protected in trucks insulated with KIMSUL, a favorite with body designers because of its efficiency and many physical advantages.

KIMBERLY-CLARK CORPORATION

Kimsul Division • Neenah, Wisconsin

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Printed in U. S. A. on 70-lb. Trufect, a Levelcoat paper.

FORM KLB 12-14 60M 948

Lockport

Lo-K

K—VALUE .24

INSULATION

for homes,
farm buildings,
apartment houses,
public buildings,
industrial uses,
cold storage.

LOCKPORT COTTON BATTING CO.

LOCKPORT, N. Y. established 1870

Lo-"K" INSULATION . . IT'S *Flameproofed*

A MODERN IMPROVEMENT OF A WORLD-KNOWN INSULATION

Lo-K, one of the most modern insulating materials on the market, has exactly what its name suggests—*low thermal conductivity* or low "K" value. It is made of a plentiful and distinctly American product—cotton—thoroughly flameproofed and backed with a tough water resisting paper which also acts as a vapor barrier. It answers today's problem of insulation with all of the soft, fluffy warmth of a cotton comfort.

For centuries cotton has been used for protection and warmth. The development of cotton as an insulation is a natural outgrowth of the acceptance of a basic insulating principle. As specially processed by the Lockport Cotton Batting Company it has proved so amazingly efficient that it is a logical first-choice for general insulation purposes.

FLAMEPROOFED UNDER DEPARTMENT OF AGRICULTURE SPECIFICATIONS

Made fire resisting by Lockport's patented method of treating cotton to resist combustion, Lo-K is approved by the United States Department of Agriculture, manufactured under the rigid specifications and under the personal supervision of a Department of Agriculture inspector permanently assigned to our plant. Even when subjected to the flame of a blow torch at 1800°F. for 20 minutes, Lo-K does not support combustion.

RESISTANT TO MOISTURE

The asphalt-coated kraft paper nails firmly to studding to form a vapor barrier. In addition, cotton is itself normally resistant to moisture. (Absorbancy is induced only by a treatment not employed in manufacturing Lo-K.) Toss a piece of Lo-K on water—it floats indefinitely.

LIGHT WEIGHT BRINGS SAVINGS

Cotton weighs only .85 lb. per cubic foot. It is many times lighter than most insulations on the market today. See comparative weights in table on this page.

★ SPEEDS INSTALLATION

Lo-K's extremely light weight means easier and faster installation, at a saving in labor costs (according to Government bulletins) as high as 40%. Carrying and moving of packages of Lo-K on the job is speeded. You can take on more insulating jobs with Lo-K than with heavier insulations.

★ EASILY HANDLED

Lo-K gives you lower rail or truck transportation cost per thousand square feet. Its lighter weight also makes it easier to warehouse, more convenient and economical to load on cars and trucks. On the job, handling of Lo-K is faster—this means lower labor costs.

★ NON-SETTLING

The light weight of Lo-K means long life. It stays permanently in place because it is LIGHT and therefore does not sag or settle. In addition, the fine kinky fibres of cotton have a natural tendency to cling to each other, and to rough surfaces . . . locking themselves to the framing members. Lo-K is made extra wide to make this locking process sure and secure. This assures years of trouble-free service.

★ RESISTS MILDEW AND ROT

Lo-K has a definite and built-in resistance to mildew, rot and decay. By a special process perfected by the Lockport Cotton Batting Company, the chemical treatment incorporates a definite barrier to the ravages of fungus and bacteria growth.

★ RESISTS VERMIN

Governmental tests prove Lo-K cotton insulation resists vermin. There is nothing of food value in cotton which will permit them to live and the chemical treatment acts as an effective barrier against infestation of termites, moths, beetles and other pests. These same tests prove that treated cotton insulation not only offers no food value or encouragement to rodents, but that they show a definite aversion to cotton insulation prepared in accordance with Department of Agriculture specifications.

★ NON-IRRITATING

One of the major problems in installing old-fashioned insulation has been the irritation to the hands of those working with the product. Lo-K gives you no "irritation itch." Its treatment is by non-irritating chemicals and none of the harsh abrasive fibres found in some other materials are present in cotton. Try the test yourself. Rub it on the back of your hand or face.

INSTALLATION OF Lo-K Because of its light weight and ease of handling, you will find that Lo-K installs more economically than many other insulating materials. The ample length of the rolls means less piecing, no gaps in the insulation where drafts or excessive moisture may penetrate and greater general efficiency.

Lo-K should be installed with the paper on the warm side. On the ceilings this means the vapor-barrier paper should be down, and on the side walls the paper would be toward the inside of the house. Convenient nailing flanges on the vapor-barrier paper can be attached to the face of the framing members.

Many contractors and architects prefer additional insulating value of a dead air space between the vapor-barrier paper and the inside finish. This type of construction requires that the nailing flange be stapled to the side of the framing members at a 90°-degree angle to the plane of the cotton.

In side-wall construction, in knee-wall areas, or in sloping roof rafters, it is recommended that the cotton and the paper be stapled to the plate at the top of the area. This will hold the cotton firmly in place.

LOCKPORT COTTON BATTING COMPANY

EASY AND FAST TO INSTALL IN ATTIC FLOORS AND WALLS

Watch Lo-K being installed. It is easily handled. Its convenient size—15 in. wide, and ample roll length—meets standard construction. Its backing of tough moisture-resisting paper has a 1¼ in. flange to take the nailing—and leave the cotton free. And the light weight of this new insulation speeds installation appreciably—at a saving in time of 25 to 40%.

HIGH INSULATING *Efficiency* LOW THERMAL CONDUCTIVITY

"K" Factor is .242

Compare the thermal conductivity of Lo-K insulation with any of the other insulating materials on the market today. This comparison alone would be convincing proof of Lo-K's superiority. The "K" factor (for 1 in.) is only .242 or anywhere from 10 to 40% more efficient than other recognized insulation materials.

Thus Lo-K has a lower thermal conductivity than rock wool, glass wool, corkboard or chemically treated wood fibers.

It has a "K" value 52 times more efficient than that of stone or stucco, and 4 times better than hollow tile or yellow pine.

Tests by Recognized Laboratories

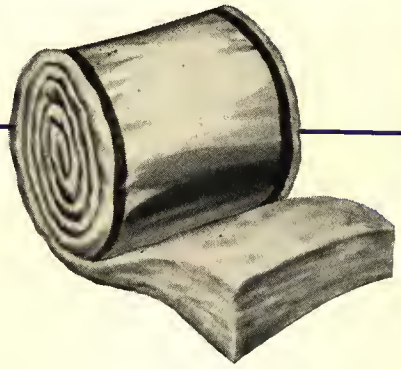
Material	Description	Wt. per cu. ft.	Insuloting Volue *("K" foctor)	Authority
Cotton	Cotton fibers highly treoted	.85	.242	J. C. Peebles
Rock Wool	Fibrous moteriol mode from rock	10.00	.268	Bureou of Standords
Mineral Wool	Fibrous moteriol made from slag	10.50	.310	Bureou of Stondords
Gloss Wool	Fibrous moteriol mode from glass slag	1.50	.270	Bureou of Stondards
Balsam Wool	Chemically treated woad fiber	3.62	.250	Bureou of Stondards

*"K" factor meons the amount of heat expressed in British Thermal Units transmitted in 1 hour through 1 sq. ft. of o homogeneous moteriol 1 in. thick for a difference in temperature of one degree Fohrenheit between the two surfaces of the moterial. The lower the factor, the better the insulation. This table of volues is token from the Deportment of Agriculture Bulletin "Cottan Insulation in Potato Storage House Constructian."

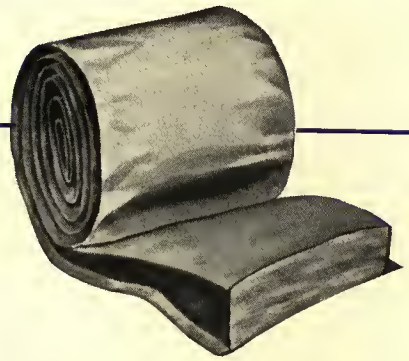
See Following Page

New Members of the Family of Lo-K *Insulation*

CLOSED BLANKET—For easier handling and application a breather paper covers the top of the cotton. It permits the evaporation of natural moisture condensation in the insulation.



OPEN FOIL—Aluminum foil used as the backing of this type gives complete vapor barrier protection, and the foil stops 90% of heat loss by radiation. This means greater protection against heat loss by convection and conduction.



CLOSED FOIL—Tops in Lo-K's Insulation offerings. Aluminum foil backing for maximum heat resistance and vapor protection plus breather paper cover over the cotton. The maximum in efficiency and in ease of application.

Increasing COMMERCIAL USES FOR Lo-K

The marked superiorities of Lo-K in home insulation have brought to light many industrial uses where the quality of Lo-K make it preferred. A few such uses mentioned here may suggest others in your line of business where Lo-K can save money and give you a better product.

REFRIGERATION — DEEP FREEZE UNITS — LOCKERS The greater thermal efficiency of Lo-K, based upon its lower "K" value, has prompted its repeated use in this important field. Its much lighter weight has made for easier installation, more economical shipping cost of finished product and has reduced condensation problems to a minimum.

These features apply particularly for extreme low temperatures and for freezing units. Navy locker plants or walk-in units require special sizes or thickness of Lo-K — which are most effectively installed and produced at small increased cost.

HOT WATER HEATERS Lo-K has been used extensively in this field where light weight and superior thermal resistances are vital. Knob and Tube wiring tests conducted by the Canadian Standards Association of Toronto show that Lo-K may be used with safety in connection with electrical wiring.

TRUCKS, TRAILERS AND FREIGHT CARS The need here is for an insulating material which can give good resistance to heat flow without burdening thickness, which will not add materially to the weight of the vehicle, and thus reduce pay load capacity. These requirements relate to two of the greatest advanta es of Lo-K.

PREFABRICATED HOUSES Lo-K Insulation has specialized in the "Prefab" field. Lower "K" factor, economy in installing and in shipping weight of Lo-K apply especially to the production line operation. Lo-K serves the prefabricator better because it can be compressed and requires less storage space for a given number of square feet.

LO-K ACOUSTICAL BLANKET Exhaustive tests by the Bureau of Standards in Washington have established the merit of Lo-K Insulation in the Acoustical Field. Sound must be controlled in two ways for complete efficiency.

The first of these is to reduce sound at its source by absorption. In this, Lo-K behind perforated asbestos board or perforated metal pans has a noise reduction factor as high as .75. This compares very favorably with other materials used for this purpose. One interesting point in these Bureau of Standards tests shows that Lo-K Acoustical Blanket has the best efficiency in the lower cycles which predominate in the usual sound background of home, office or public building.

The second method of sound control has to do with reducing the transmissions of sound from one room to another. Here Lo-K Acoustical Blanket of a two-inch thickness will reduce 36.7 decibels of sound. Fifty to sixty decibels is about the loudness of sound in a fairly busy office. This means that two inches of Lo-K, installed in a wall, will effectively bar the passage of sound in the average office and an even greater proportion in a normal home. If Lo-K were used within a room in office or home as sound absorber and the walls were treated for sound transmission it is obvious that no sound would pass from origin to another room in a busy office.

In acoustical use Lo-K offers special features of cleanliness and light weight. No particles of shot or dirt come through the facing material and load strain is materially reduced by the light weight of Lo-K. Used as an acoustical material Lo-K offers the same superiority of thermal efficiency and fire resistance.

SPECIAL STORAGE PROBLEMS

POTATO STORAGE Moisture condensation is a major problem in insulating potato storage. Because of the wide temperature differences involved and because of the moisture given off by the potatoes themselves, excessive moisture loaded and froze the insulation in previous materials used.

It has been proven conclusively in actual use that cotton insulation will neither hold moisture nor freeze, thus giving perfect protection.

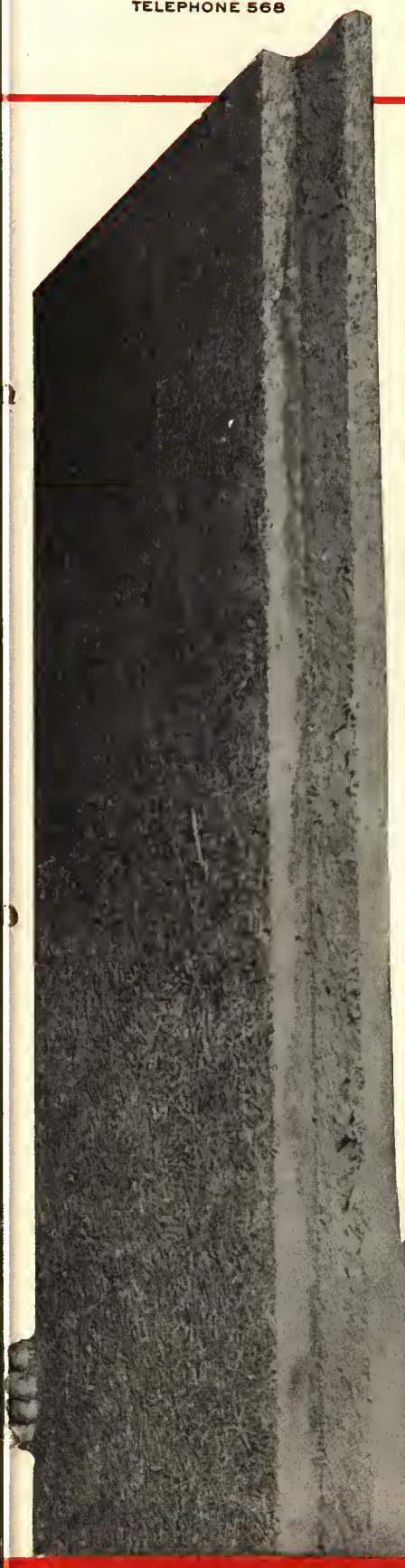
TOBACCO STORAGE This insulation use presents a special problem. In storing and curing tobacco an even temperature with plenty of ventilation in the sides of the structure and no excessively warm area near ceiling or roof are essential elements. Lo-K's uniform thickness, extra thermal efficiency and light weight have made it preferred for this purpose.

LOCKPORT COTTON BATTING CO.

ESTABLISHED 1870

MAIN OFFICE AND PLANT: LOCKPORT, NEW YORK

THE NEW ENGLAND FIBRE COMPANY
MANUFACTURERS OF Acoustical Tile
TELEPHONE 568
PORTSMOUTH • NEW HAMPSHIRE

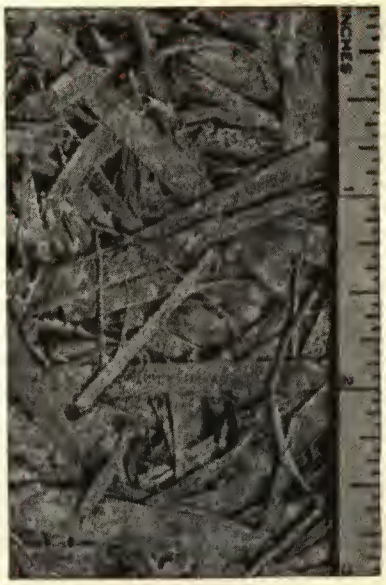


OUTSTANDING INSULATION PRODUCTS

STRUCTURAL INSULATION

TYPE SI Board Form

Architects, builders and contractors told us this was the board they wanted. Developed to their needs. See details on pages two and three.

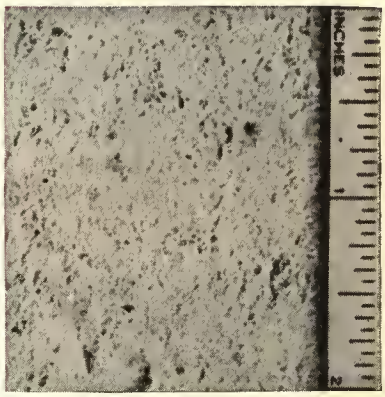


TYPE SI

ACOUSTICAL TILE

TYPE FB Fine Grained Surface

Acoustical qualities with pleasing smoothness. A favorite where cost is an important factor. See page 4 for description.



TYPE FB

TYPE AC Textured Surface

Long a favorite where the texture is desired. Durable and rugged. Used successfully in thousands of jobs. See page four.

NOW AVAILABLE

Until this year New England Fibre Company produced solely for national distributors. Now these same products are available under New England Fibre Company's own brands.

TYPE AC

THE NEW ENGLAND FIBRE COMPANY

MANUFACTURERS OF *Acoustical Tile*

TELEPHONE 568

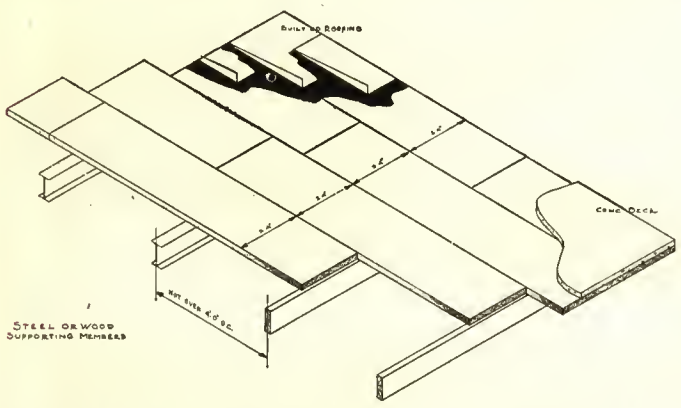
PORTSMOUTH • NEW HAMPSHIRE

STRUCTURAL INSULATION TYPE SI

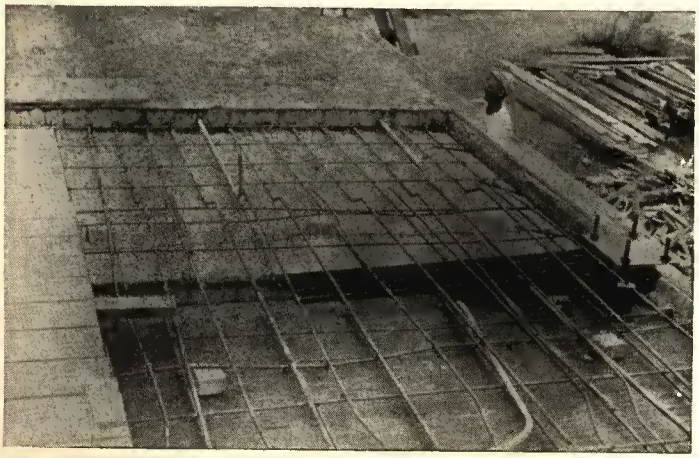
TO SOLVE YOUR MODERN BUILDING PROBLEM

Ideal for non-load-bearing walls, roof decks, ceilings and interior partitions—homes, offices, camps, farm buildings, factories. Easily cut to shape.

PROVIDES:	RESISTANT TO:
High Acoustical Value	Fire—Incombustible
Light Handling Weight	Vermin—Solid Partitions
Ideal Plaster Bond	Thermal Conductivity
Good Painting Surface	Normal Sound Transmission



Isametric View of New England Fibre Company Structural Insulation Used As Raaf or Floor Deck



Concrete Form and Ceiling in One Operation with New England Fibre Company Structural Insulation at the Warrendale School, Waltham, Massachusetts

SI Board Is Sturdy. Photo Shows Deflection Test of 2″ Board Loaded with 430 Lbs. of Bricks

SPECIFICATIONS TYPE SI

COMPOSITION	Ribban excelsior made from selected wood, rigidly banded with Portland cement
COLOR	Light gray natural cement color
SURFACE	Molded front and back
THICKNESS	1″, 2″, 3″
SIZES	2′ x 9′
DIMENSIONAL TOLERANCES	Thickness: plus or minus 1/16″ Length: plus or minus 1/16″ Width: plus or minus 1/16″ Squareness: within 1/16″ of absolute, per running foot
TRANSVERSE STRENGTH	Span: 24″ Max. Load, Center: 230 lbs. Modulus of Rupture: 85.95 lb. sq. in. for 2″ thick board
FIRE RESISTANCE	Incombustible, tested in accordance with National Bureau of Standards SS–A–118
NOISE REDUCTION COEFFICIENT	Approximately 0.76 far 2″ thick baard. The material may be repainted withaut appreciable loss of efficiency.
THERMAL CONDUCTIVITY	.28 B.T.U. per haur, per sq. faot, per degree difference in temperature between the twa sides of 2″ thick baard at a mean temperature of 98° F
DENSITY	Approximately 28 pounds per cubic faot
GENERAL CHARACTERISTICS	Expansion due to moisture and temperature changes is negligible
SHIPPING INFORMATION	Uncrated. Weight appraximately 84 lbs. per sheet for 2″ thick board
SPECIAL ORDERS	Special sizes and thicknesses can be furnished on order

SAVES YOU TIME • SAVES YOU MONEY

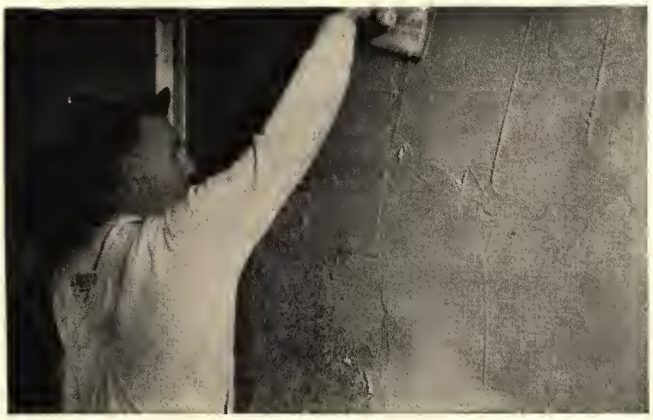
NEW ENGLAND FIBRE STRUCTURAL INSULATION

Simple Frame

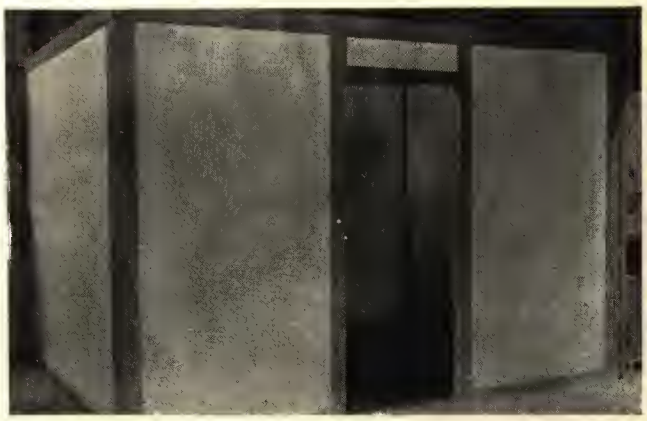
Easily Sawed—Hand or Power

One Man Can Handle the Board

Complete Wall in a Few Minutes



Ideal Texture for Plastering



Sturdy, Insulating, Noise Reducing

SAVES STUDDING • SAVES LATHING

MODERN HOME, OFFICE OR INDUSTRIAL PARTITIONS

ROOF DECKING • • • FORMS FOR CONCRETE SLABS • • • INSULATED CEILINGS

THE NEW ENGLAND FIBRE COMPANY
MANUFACTURERS OF Acoustical Tile
TELEPHONE 568
PORTSMOUTH · NEW HAMPSHIRE

ACOUSTICAL TILE

Type FB is a fine-grained, low density and inexpensive tile welcome where cost is a vital factor. It is well adapted for adhesive application.

Type AC represents the finest in durable and rugged fire-retardant tiling and can be used in any modern type construction.

Both have been used successfully on thousands of installations in the United States and foreign countries. These two types of Acoustical tile have been popular in the trade for many years.

Specifications TYPE FB

COMPOSITION	Spruce and other selected Northern wood fibres, felted into a homogeneous mat by hydraulics.
COLOR	White
SURFACES	Face: sanded Back: free from any materials which interfere with adhesive applicatian
THICKNESS	1″
SIZES	Sq. Units: 10″ x 10″ and 12″ x 12″ Rect. Units: 6″ x 12″ and 12″ x 24″
DIMENSIONAL TOLERANCES	Thickness: plus 0, minus 1/16″ Length: plus or minus 1/32″ Width: plus or minus 1/32″ Squareness: within 1/32″ of absolute, per running foot
EDGE TREATMENT	Either beveled or square, as ordered. When measured as an extension of the top surface, bevel is 45° and 3/16″ wide
NOISE REDUCTION COEFFICIENT	0.65 minimum, with solid backing, measured by reverberatian chamber tests
LIGHT REFLECTION VALUE	0.58
FIRE RESISTANCE	Classified as "COMBUSTIBLE," as tested in accordance with Federal Specification SS A-118
DENSITY	Maximum: 9.5 paunds per cubic faot
PACKAGING	200 pound test corrugated cartons, as follows:

Size	Pieces	Sq. Ft.
6″ x 12″	100	50
10″ x 10″	44	30.5
12″ x 12″	50	50
12″ x 24″	25	50

SHIPPING WEIGHT	42 lbs. per carton except 10″ x 10″ which is 26 lbs.
SPECIAL ORDERS	Special colors, sizes, edge treatment (Kerfed ar routed) can be furnished on order

Specifications TYPE AC

COMPOSITION	Superfine excelsior made from selected Poplar wood, rigidly bonded with Magnesite (Magnesium oxy-sulphate) cement
COLORS	Natural, White (Prime Coat)
SURFACES	Face: molded Back: free from any moterials which interfere with adhesive application
THICKNESS	3/4″
SIZES	Sq. Units: 10″ x 10″ and 12″ x 12″ Rect. Units: 6″ x 12″ and 12″ x 24″
DIMENSIONAL TOLERANCES	Thickness: plus 0, minus 1/16″ Length: plus or minus 1/32″ Width: plus or minus 1/32″ Squareness: within 1/32″ of absolute, per running foat
EDGE TREATMENT	Either beveled or square, as ordered. When measured as an extension af the top surface, bevel is 45° and 3/16″ wide
NOISE REDUCTION COEFFICIENT	0.60 minimum, with solid backing, measured by reverberation chamber tests. This material may be painted without appreciable loss of efficiency
LIGHT REFLECTION VALUE	0.79
FIRE RESISTANCE	Classified as "FIRE RETARDANT" as tested in accordance with Federal Specificatian SS A-118
DENSITY	Maximum: 24 pounds per cubic foot
PACKAGING	200 paund test carrugated cartons, as follows:

Size	Pieces	Sq. Ft.
6″ x 12″	80	40
10″ x 10″	60	42
12″ x 12″	40	40
12″ x 24″	20	40

SHIPPING WEIGHT	64 lbs. per carton
SPECIAL ORDERS	Special colars, sizes, thickness, edge treatment (Kerfed or rauted) can be furnished on order

COMPLETE ENGINEERING DATA AND CONSTRUCTION DETAILS SENT ON REQUEST

Write for List of Dealers and Distributors

PALCO INSULATION WOOL®

THE ALL-PURPOSE INSULATION

A Redwood Bark Product of
THE PACIFIC LUMBER COMPANY

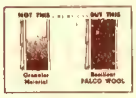
EQUALLY EFFICIENT FOR HOMES AND LOW TEMPERATURE REFRIGERATION

Unlike other insulating materials, PALCO WOOL Insulation, derived from the thick fibrous bark of the giant Redwoods is equally suitable for homes, commercial buildings and refrigerated plants. Its many points of superiority and efficiency make it the ideal all-purpose insulation for maintaining uniform temperatures under all types of climatic conditions, ranging from extreme heat to severe cold.

As one of the most widely used and accepted insulating materials, PALCO WOOL Insulation adequately measures up to existing requirements and the rigid standards imposed by architects, engineers and builders. Its high insulating factor and low conductivity are attributed to the close-knit cellular structure of its resilient fibres, in which millions of tiny air cells are trapped. When installed in walls or ceiling areas, displaced air spaces are subdivided into minute dead-air pockets which further add to PALCO WOOL'S insulating efficiency.

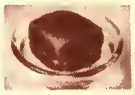
Major Points of Superiority

High Thermal Efficiency—Because of its extremely low conductivity of .255 B.T.U. PALCO WOOL is considered one of the most highly efficient of accepted types of insulation. Installed in loose fill form, it breaks up existing air spaces, thereby reducing the transmission of heat to a minimum.



Non-Settling—Non-Compacting. Under contiouously severe vibration tests, conducted by a leading independent testing laboratory over a period of 42 consecutive days, a 10-foot wall section of PALCO WOOL showed no settlement whatsoever.

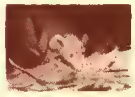
Flame-Proof—Fire-Resistant—Inherently fire-resistant in itself PALCO WOOL fibre is thoroughly treated under the special Saferized process to make it fully flame-proof. By displacing air spaces and eliminating circulating drafts and convectioo currents, it greatly reduces fire hazards.



Moisture-Resistant—Due to their non-hygroscopic characteristics, PALCO WOOL fibres will not absorb any perceptible amount of condensate or moisture from the air. Even when partially submerged, PALCO WOOL shows no tendency toward capillary action.

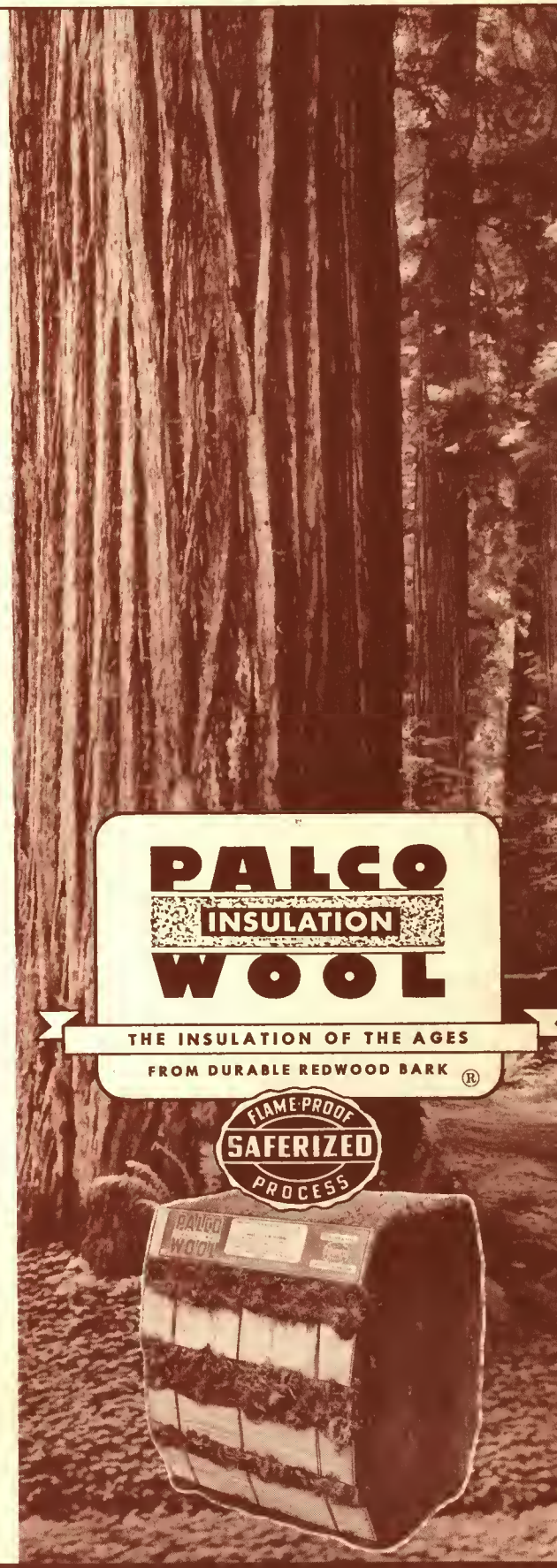
Odorless and Odor-Proof—Odorless in itself, PALCO WOOL contains no micro-organisms nor volatiles, and will therefore not support fermentatioo or putrefaction. Moreover, as it does oot take oo odors—it will not give off any odor.

Permanent—Tested and proven by the centuries in protecting the giant redwoods from the ravages of time, weather, fire and insects, PALCO WOOL insulation will last as long as the structure stands. Once installed, it requires no further thought or attention.



Non-Attractive to Vermin or Insects—As it is acridly distasteful to rodents and insects alike, it offers no attractioo or inducement to them. Other organisms, likewise, cannot exist or thrive on it, as it contaios no nutriment.

Economical—The low-cost economy of installation, high insulating efficiency and lasting permanence make PALCO WOOL extremely economical. By reducing heat losses it reduces fuel waste, thereby effectiog real savings, year after year.



FOR HOUSE INSULATION . . . FOR COLD STORAGE INSULATION

Copyright 1948 by The Pacific Lumber Company

FOR *House Insulation*

REPAYS ITS COST IN SAVINGS AND INCREASED VALUES . . .

The true value of every house is measured, not by the initial cost, but in terms of comfort, convenience and continuing economy. Houses that absorb too much heat in summer, that are costly and hard to heat in winter, are neither comfortable nor economical, even though they may be conveniently planned, beautifully designed and well constructed. To permanently remedy this condition, regardless of when a house was designed or built, specify PALCO WOOL Insulation.

ELIMINATES FLOOR DRAFTS

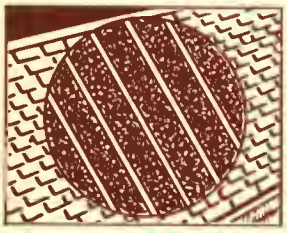
PALCO WOOL Insulation helps to produce even temperatures throughout the house, preventing the floor drafts caused by the movements of unevenly heated air masses.

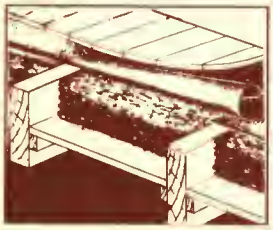
REDUCES HEAT LOSSES

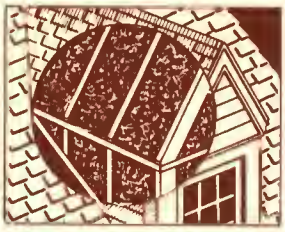
The amount of fuel required to maintain room temperatures throughout the winter is minimized, and effective protection is provided against the penetration of heat in the summer.

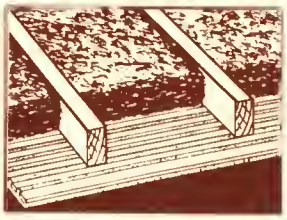
EFFECTIVE SOUND DEADENING MATERIAL

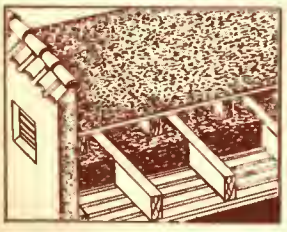
Installed in walls between adjoining apartments, rooms, bathrooms and kitchens, PALCO WOOL provides an effective sound deadening medium.

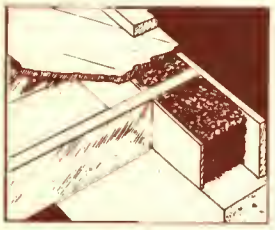


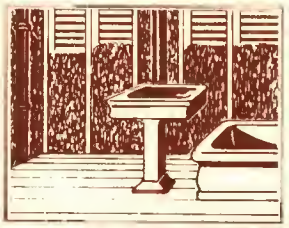












REDUCES FIRE HAZARDS

Installed in outer walls and upper ceilings, Saferized PALCO WOOL forms a permanent non-settling non-compacting fire-stop by displacing air spaces and eliminating circulating drafts. PALCO WOOL does not become brittle nor disintegrate when sprayed with water after being subjected to intense heat in burning structures. Because of its springy resilience, it maintains its original volume, thereby further retarding the spread of fire. Through its extremely high insulating value against heat and cold, PALCO WOOL eliminates the hazard of over-taxing heating plants during cold spells.

ESTIMATING QUANTITIES REQUIRED

1. **Specify a 4-inch thickness of Saferized PALCO WOOL Insulation.**
2. **The requirement for blown flat areas is .6 lbs. per square foot.**
3. **For hand packed side-walls .8 lbs. per square foot is recommended.**

VAPOR-PROOFING BARRIER

In locations where sub-freezing temperatures are encountered for several months at a time, provision should be made to prevent moisture-laden air or vapor from entering and condensing in the outer walls or upper ceilings. A suitable vapor barrier should be employed on the inside studs of a wall or under the ceiling joists prior to plastering and insulating, no matter what type of insulating material is used. Various vapor barriers which have proved satisfactory are: asphalt-impregnated, glossy, surface-coated sheathing paper; and duplex Kraft paper cemented with asphalt.

FOR *Cold Storage Insulation*

CONSTANT LOW-TEMPERATURE CONTROL

Dependable cold storage demands constant low temperatures, uniformly maintained within close ranges. To achieve this, an insulation possessing extremely high thermal efficiency and low conductivity is needed. PALCO WOOL, with a thermal conductivity of .255 B.T.U. has proved to be one of the most efficient insulations in use today. It is entirely self-supporting, and will not settle or compact. It withstands moisture, resists decay and deterioration, is odor-proof and vermin-repellent.

COLD STORAGE SPECIFICATION DETAILS

1. Applied density of Palco Wool Insulation to be four and one-half pounds per cubic foot. Correct density to be achieved by firm hand pack method.

2. Palco Wool Insulation to be flame-proof under manufacturers speciol SAFERIZED process.

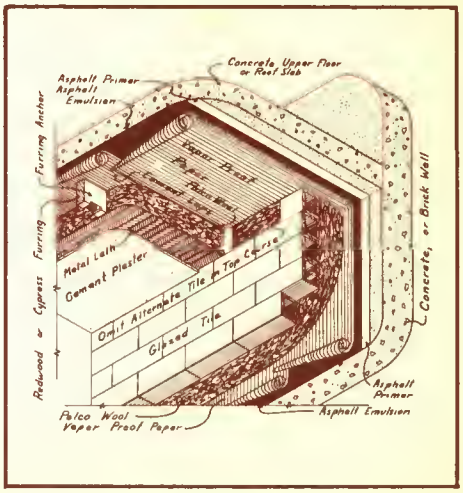
3. An effective vapor barrier to be installed on warm side of insulation to maintain ideal condition of dryness, and to insure maximum insulating efficiency (Vapor barriers are fully described in detail in Polco Wool Cold Storage Manual).

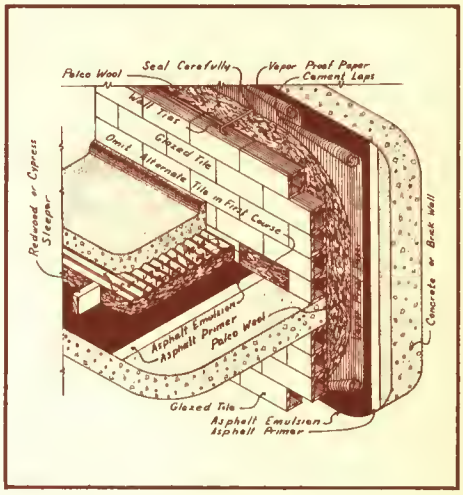
4. An extra layer of paper in addition to that shown in accompanying detail drawings to be applied at corners and angles.

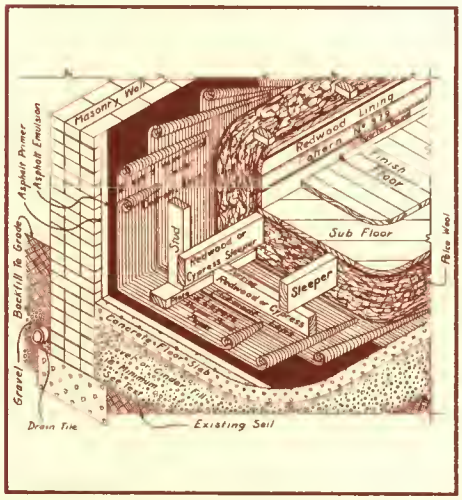
5. Masonry surfaces on warm side of the insulation to be thoroughly sealed with one thin prime coat, and one heavy finish coat of asphalt emulsion. A layer of vapor-proof paper then to be applied, lapping all joints 4 inches, and cementing the laps with asphalt emulsion.

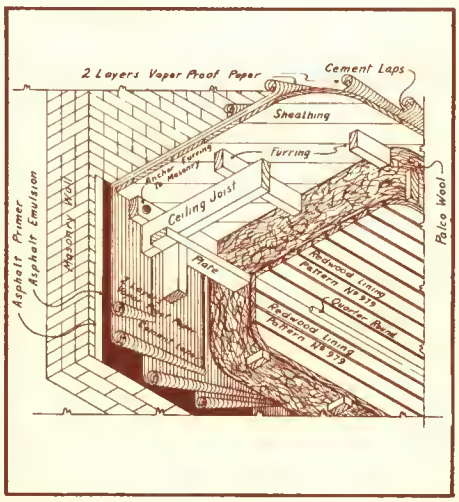
6. Where concrete finish floors ore positioned over insulation, one layer of light roofing felt to be used over wood sub-floor to afford temporary protection while pouring concrete.

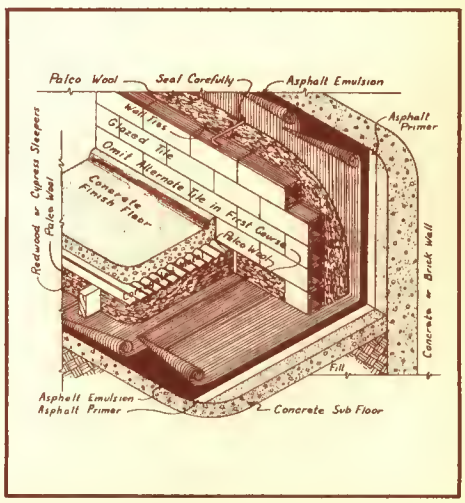
7. Wood used for interior finish should be dry and free from loose knots and other defects. It should be all heartwood of a durable species. It should have low shrinkage factor and be able to hold paint when subjected to moisture. It should not absorb or give off odors. (California Redwood is recommended for lining wherever available.)











LOW TEMPERATURE CONTROL WITHIN EXTREMELY CLOSE RANGE

PALCO INSULATION WOOL ®

—EASY TO APPLY

INSTALLED BY HAND OR BLOWER

PALCO WOOL Insulation is supplied in machine compressed bales measuring 24" x 24" x 26" and weighing approximately 100 lbs. each. Before application, PALCO WOOL should be fluffed to insure uniform density, by means of a rake, fork or fluffing machine. It is easily installed by Hand-Packing or by Pneumatic Blowing Machine.

FURTHER DETAILS AND SAMPLES AVAILABLE

Architects and engineers may obtain additional information or specifications to meet unusual conditions requiring special treatment by writing to the Engineering Department of The Pacific Lumber Company. Complete details in convenient manuals are available on the following subjects:

House Insulation
Cold Storage Insulation
How to Build a Frozen Food Locker Plant
Refrigerated Apple Storage Plans
PALCO WOOL Blowing Machine
PALCO WOOL Fluffing Machine

A free sample of Saferized PALCO WOOL Insulation will be furnished on request.

RECOMMENDED THICKNESS FOR VARIOUS TEMPERATURES

The amount of insulation to be applied in order to maintain certain degrees of temperature can be theoretically determined by considering the refrigerating cost as compared to the cost of the insulation. In general, lower temperatures require greater thickness of any insulating material. Because of the low cost of PALCO WOOL it has proved economical to use a thickness greater than minimum requirements as indicated by the chart at right. This insures continued savings in operating costs.

For Temperature of:	Recommended Thickness of PALCO WOOL	Required Minimum Thickness of PALCO WOOL
34° F.	4 in.	3 in.
25° F.	6 in.	4 in.
10° F.	8 in.	6 in.
0° F.	10 in.	8 in.
—10° F.	12 in.	9 in.
—20° F.	14 in.	10 in.
—30° F.	16 in.	12 in.

AMONG THOSE USING PALCO WOOL

Hunt Foods, Inc.
The Union Ice Company
California Walnut Growers Association
Placerville Fruit Growers Association
United States Army
United States Navy
Wesix Electric Heater Co.
Baker Ice Machine Company
H. P. Henschein, Engineer, Chicago
American President Lines, Ltd.
Southern Pacific Co.
Kraft-Phenix Cheese Corp.
Coco Cola Company of Canada, Ltd., Montreal, Quebec
Ralston Purina Company, Inc.
and
Thousands of Low Temperature installations including more than 2,600 Locker Plants.

Also Sold Nationally Through Dealers and Applicators

THE PACIFIC LUMBER COMPANY

San Francisco 4: 100 Bush Street — Chicago 1: 35 East Wacker Drive
Los Angeles 36: 5225 Wilshire Boulevard

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Shanahan's Limited

SC-49-SM-B/48

Litho in U. S. A.

MADE FROM THE LONG, STRONG FIBERS OF DOUGLAS FIR

Simpson

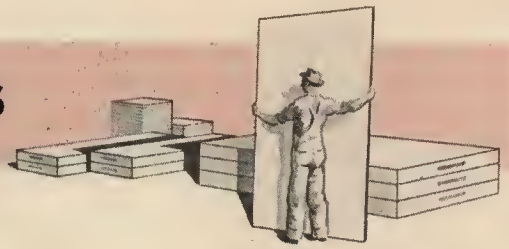
QUALITY SINCE 1895

INSULATING BOARD PRODUCTS

- INSULATING BUILDING BOARD
- INSULATING DECORATIVE PLANK
- INSULATING DECORATIVE TILEBOARD
- INSULATING LATH

Specify and Use Simpson QUALITY SINCE 1895

INSULATING BOARD PRODUCTS



DESCRIPTION

Simpson Insulating Board is a rigid structural insulating board without knots or grain manufactured from long, tough Douglas fir fibers. The Douglas fir fibers produce an insulating board which combines unusual heat and sound insulating properties with exceptional strength and bracing properties. A new manufacturing process was developed for this product, employing latest type machinery and new automatic controls to insure a high degree of uniformity and quality. The new plant is staffed with expert insulation board experts and highly skilled technicians.

Source of the Douglas fir fiber is the 250,000 acre Simpson sustained yield managed timber lands, located in the heart of the rugged Olympic Mountains in the northwest corner of the State of Washington. Having an average rainfall of 60 to 150 inches a year, the area has a prodigious capacity for growing Douglas fir trees, producing an extremely long and tough fiber not duplicated in any other area. Simpson is assured of an ample supply of raw material for Insulating Board products.

The outstanding characteristics of Douglas fir fiber as a base for insulating board products were discovered in the Research Laboratory of the Simpson Logging Company, Shelton, Washington . . . a leader in forest products since 1895. The process of manufacturing these insulating board products was developed and perfected by the Woodfiber Division. A modern plant has been constructed at Shelton and only selected wood chips are used in manufacturing these insulating board products. The process is a relatively simple one, yet it is exacting so as to produce a product of high uniformity. The wood is carefully sorted and all bark and rot are removed before chipping. The chips are defibered, or ground, under closely controlled conditions so that the required fiber length is obtained. The "pulp" or defibered wood, is then pumped through screens and chests, where the waterproofing and other chemicals are carefully added, until finally it arrives at a traveling wire, where a sheet of wet pulp of definite weight and thickness is formed.

In the subsequent felting process, the fibers are formed into large coherent boards. The final steps are the drying and removal of the water and the cutting and trimming of the board to the finished sizes. During the manufacturing process, the fibers are specially treated to render the board resistant to termite attack, fungus growth and dry rot. Simpson Insulating Building Board is finished on one surface in an attractive oyster white whereas the Decorative Tileboard and Plank are similarly finished on one surface in a gardenia white. Certain products are also additionally fabricated, such as with special joints.

MARKETING

Simpson Insulating Board products are distributed exclusively through lumber and building supply dealers, through a straight line sales policy. Distributors, strategically located, serve dealers in a wide area.

The Woodfiber Division of the Simpson Logging Company maintains an Architect's Field Service in connection with its Sales Division Office, 1010 White Building, Seattle 1, Washington.

PHYSICAL PROPERTIES

As previously mentioned, the outstanding characteristic of Simpson Insulating Board products is that they combine structural strength with insulating value. This combination of characteristics is important in at least two respects, first, because insulating board may be used where it serves both as a structural material and an insulation, and second, the structural qualities tend to perpetuate the insulating value because the insulating board is not readily compressed or otherwise damaged.

THERMAL CONDUCTIVITY

Because of the millions of entrapped air voids within the fibers as well as the interstices between the fibers, Simpson Insulating Board products have excellent insulating properties. The insulating value of a material is measured by its thermal conductivity, the lower the conductivity the better the insulating value. Tests conducted at the University of Minnesota and the University of California show the average thermal conductivity of Simpson Insulating Board to vary from 0.33 to 0.36 Btu per hour per square foot per degree Fahrenheit per inch thickness, depending on the density of the several types of products.

STRUCTURAL STRENGTH

The natural interlacing and weaving of the fibers and their subsequent drying knits them firmly together and forms a grainless board of high tensile strength and stiffness. Tests conducted by R. W. Hunt Co., Chicago, show the transverse and tensile strengths of Simpson Insulating Board products to exceed the limits prescribed in U. S. Commercial Standard CS 42-43, Federal Specification LLL-F-321b and ASTM standards.

FUEL SAVING

Inasmuch as Simpson Insulating Board is an efficient thermal insulation it reduces the heat loss of a building and thereby saves fuel. This fuel saving soon pays for the insulating board. In some cases, the Simpson Insulating Board actually costs little or no more than the material it replaces as, for example, where it is used in place of other materials as an interior wall finish or exterior wall sheathing. The insulation value is thus obtained without any initial cost. As Simpson Insulating Board reduces the heat loss of a building, it may permit the use of a smaller heating plant, which is a further economic advantage of this material.

KEEPS OUT SUMMER HEAT

Simpson Insulating Board effectively retards the penetration of summer heat and thereby provides cooler interiors during warm weather. The added summer comfort is an extra benefit which has immeasurable value, although it cannot actually be measured in dollars and cents.

TERMITE PROTECTED

decay termite Protected WITH PENTACHLOROPHENOL

The fibers of all Simpson Insulating Board Products are treated with Pentachlorophenol which not only protects against termites, dry rot and decay, but against mold and mildew as well. Although more costly than other chemicals commonly used, Penta was selected as the best and most advanced chemical for better preservative protection. As used, it is odorless and harmless to humans and animals. Below ground exposure tests of Simpson Insulating Building Board treated with Pentachlorophenol were conducted at Jacksonville, Florida, by an independent laboratory. Climatic conditions there favor termite attack and rot — conditions many times more severe than insulating board is exposed to in normal use. Inspection of test samples after ten months showed the samples perfectly sound.

Simpson Insulating Board Products

NAME OF PRODUCT	SIZES	THICKNESSES	EDGES	SURFACE FINISH
SIMPSON INSULATING BUILDING BOARD	4'x7', 4'x8', 4'x9', 4'x10', 4'x12'	½"	Square	Oyster white*
SIMPSON INSULATING DECORATIVE TILEBOARD	16"x16" 16"x32"	½"	Beveled with T & G Joint	Gardenia white*
SIMPSON INSULATING DECORATIVE PLANK	Widths: 8",10",12",16" Lengths: 8 ft., 10 ft.	½"	Short Edges: square Long Edges: beveled with T & G Joint	Gardenia white*
SIMPSON INSULATING LATH	18"x48"	½", 1"	Short Edges: square Long Edges: V-Joint	Natural
SIMPSON ROOF INSULATION	24"x48"	½", 1" 1½", 2"	Square	Natural

* Reverse side, natural color of board.

Greater Workability on the Job

Simpson Insulating Building Board has better workability on the job. It cuts easier, smoother and cleaner—saving time on the job and permitting better joints and all around better workmanship. Thus, Simpson Insulating Building Board gives a plus value at no increase in cost to the builder.

Note Clean-cut Edges

PRODUCTS OF SIMPSON RESEARCH

Simpson Insulating Board products are manufactured in a large, modern plant at Shelton, Washington.

Simpson QUALITY SINCE 1895

INSULATING BUILDING BOARD

Simpson Insulating Building Board is a general purpose product which is produced in four foot widths and in various lengths. Edges are plain and square. The thickness is ½". One side is finished in an attractive oyster white and the reverse side is the natural color of the board.

Simpson Insulating Building Board on Ceiling of a Municipal Airport Dining Room.

Simpson Insulating Building Board provides a beautiful interior finish when applied to walls and ceilings. If desired, the boards may be stained, painted, stenciled or carved with excellent results. The edges of the board may be beveled with a simple cutting tool to form a pleasing V-joint. Other interesting designs may be obtained by cutting additional grooves.

Simpson Insulating Building Board is ideal for constructing partitions of all kinds, either permanent or temporary. When placed between rough and finish flooring, it provides heat and sound insulation.

Simpson Insulating Building Board may be used as a wall sheathing in conjunction with any type of exterior finish and, in addition to performing all the functions of other types of sheathing, it provides efficient insulation against extremes of heat and cold. This product performs four services when used for sheathing. It builds, braces, insulates, and virtually stops wind infiltration through the wall. Furthermore, a wall sheathed with this product possesses greater bracing and stiffening properties than a wall sheathed with narrow units applied horizontally. Tests conducted at the Forest Products Laboratory, Madison, Wisconsin, showed that a wall sheathed with insulating board sheathing has a rigidity factor of 3.0 compared to a factor of 1.0 for horizontal wood sheathing.

Because it comes in large easy-to-handle units, Simpson Insulating Building Board can be applied quicker and with less waste than ordinary wood shiplap or tongue and groove sheathing. The cost of the completed job, therefore, is usually less than if ordinary sheathing is used.

The combined structural and insulating properties of Simpson Insulating Building Board are particularly valuable where farm structures are involved. Consequently there are many farm uses for this product such as poultry and brooder houses, dairy barns, hog houses, fruit and vegetable storages and many other types of farm structures.

Simpson QUALITY SINCE 1895

INSULATING DECORATIVE TILEBOARD

Simpson Insulating Decorative Tileboard is used almost exclusively on ceilings, although this product is also used to a limited extent on interior walls above the wainscoting, dado, or chair rail. The tileboard has interlocking tongue and groove joints so that adjoining units fit together firmly and smoothly. The exposed surface is finished in a pleasing gardenia white.

Simpson Insulating Decorative Tileboard is frequently used on ceilings in combination with a wall treatment of Building Board and/or Simpson Insulating Decorative Plank so that many attractive designs are possible. One of the principal advantages of Simpson Insulating Decorative Tileboard is that it can be applied without the use of special clips.

Simpson Insulating Decorative Tileboard on ceiling and portion of wall of a gymnasium.

Simpson Insulating Decorative Tileboard on Ceiling of a Recreation Room.

Simpson QUALITY SINCE 1895

INSULATING DECORATIVE PLANK

Simpson Insulating Decarative Plank an Wolls of Receptian Raom in a Monufacturing Plant. Decorative Tileboard on Ceiling.

Simpson Insulating Decorative Plank are long, narrow units which are available in various widths and lengths. Thc surface to be exposed is finished in gardenia white. The long edges are beveled and also have a special interlocking tongue and groove joint similar to that of the Tileboard so that they fit smoothly together for greater rigidity when applied in place.

Simpson Insulating Decorative Plank may be applied either vertically or horizontally to make walls and ceilings of charm and distinction. Varying the width or tinting with various colors permit a wide range of decorative design. The Plank has the same insulating value and strength as other Simpson Insulating Board products and therefore effectively reduces fuel consumption and increases comfort.

Simpson QUALITY SINCE 1895

INSULATING LATH

Simpson Insulating Lath is a better plaster base and an efficient insulation in one material. It provides a smooth, beautiful wall free from lath marks. The units are 18″ wide by 4 feet long and the thicknesses are ½″ and 1″.

Simpson Insulating Lath is manufactured with interlocking long edges. The plaster bond between Simpson Insulating Lath and plaster averages about 1,000 pounds per square foot. As the plaster load of a ceiling amounts to only about five pounds per square foot, there is a factor of safety of about 200. The plaster goes on easier and there is a consequent saving in material and labor.

Simpson Insulating Lath is easily cut and fitted. It can be quickly nailed to studs, joists or furring strips and is then ready to receive the plaster. Where the exterior is solid masonry, Simpson Insulating Lath may be applied to the inside surface over furring strips.

The use of Simpson Insulating Lath on the inside of studs and Simpson Insulating Building Board on the outside provides a well insulated wall of sufficient heat resistance for practically any climate or type of fuel. This construction also provides a valuable breathing space between studs.

Simpsan Insuloting Loth Pravides Insulatian ond Results in o Smaoth, Beoutiful Wall Free from Lath Marks

VAPOR BARRIERS

The use of adequate vapor barriers in exposed walls, ceilings and roofs, in conjunction with Simpson Insulating Board products is recommended in cold climates — that is, where the average January temperature is below 35° F. In general, any sheet which has a continuous coating of water-resistant material, such as wax or bitumen, such continuity being assured by a glossy surface and sufficient thickness, is likely to have sufficient vapor resistance. Vapor barrier shall be installed as near the warm side of the construction as possible, such as on the inside face of studs or the under side of ceiling joists. Either the sheet type or paint type may be used. Many oil base paints are good liquid or paint type vapor barriers and may be applied to the inside surface of the wall or ceiling as a decorative finish. Usually at least two or three coats of this type of paint are required to provide adequate vapor resistance. Aluminum and asphalt base paints are also good vapor barriers. Water paints generally are not vapor barriers.

Specification A

Application of Simpson Insulating Building Board as Interior Finish

In unusually dry or humid climates, remove board from packages 24 hours before it is to be applied and stack singly around the room to allow adjustment to atmospheric conditions.

1. **Framing** shall be erected as in ordinary frame construction on 12 or 16 inch centers. Headers shall be cut in between framing members at the ends of the insulating board to provide a nailing base. Insulating board shall, where possible, be of sufficient length to span between sills and plates or other structural members. Headers are also recommended in back of chair rails and all other heavy mouldings.

2. **Nails.** Where nailing is to be exposed, cadmium plated or galvanized insulating board nails are recommended. If these are not obtainable, cleaned and polished 1¼ in. finishing nails or brads may be substituted. Where nails are to be covered with panel strips or mouldings, use 1½ inch common, box or galvanized nails.

3. **Cutting.** All cutting shall be done in a workmanlike manner. Where joints are to be covered with battens or mouldings, board may be cut with a sharp fine-tooth saw, using rapid strokes and a minimum of pressure. Where joints are to be exposed and cutting is required, cut with a sharp linoleum knife against a straight edge, or with a Stanley Fiber Board Plane or with a Bevil Devil.

4. **Beveling and Graaving**

4a. **Taals.** By means of the Stanley Fiber Board Plane and other special tools which have been developed for the purpose, the large boards may be beveled, grooved or hand carved. The Stanley Fiber Board Plane is similar to a carpenter's plane and utilizes tool steel blades which may be used indefinitely if properly honed. This tool has adjustments for varying width and depth of cuts, and spacing of grooves. A supplementary tool or knife is used for free hand carving where the beveling and grooving tool would be unwieldy.

4b. **Designs.** The operations possible with these tools include square and beveled edges, V-grooves of various widths, diagonal grooves edge to edge, edge to groove or groove to groove, and inside grooves "faded" by gradually lowering and raising tool. Overlays and perfect circles can be obtained as well as freehand curves and sweeps; also V-grooves in fluted designs and miter and slip joints.

4c. **Relief Carving.** Artistic decorative effects may be produced by carving the surface of Simpson Insulating Building Board, particularly in the case of large relief carving where detail is not required. A design is first laid out in pencil, and razor blades or a sharp knife are then used to carve the insulating board.

4d. Where the surface of the boards are to be beveled, grooved or carved, this work shall be done before the boards are applied.

5. **Jaints.** Do not attempt to obtain a finished job by butting edges of board together without some form of joint treatment such as beveled edges or covering joints with mouldings. The edges may be beveled with the Stanley Fiber Board Plane, or a Bevil Devil. Bevel should extend to a depth of one-half the thickness of the board, thus obtaining a beveled-butt joint. If the beveled edge is not desired, the joints may be covered with either wood or metal mouldings.

6. **Applicatian af Insulating Baard.** If joints are to be exposed, bring adjoining insulating boards into moderate contact, BUT DO NOT FORCE INTO PLACE. Where finishing nails or brads are used, nails shall be driven at a slight angle, setting heads of nails with nail set, and the slope alternated from nail to nail.

If joints are to be covered with mouldings or batten strips, leave a 1/16" to ⅛" space between adjoining boards.

Nail to intermediate framing members first, spacing nails 6" apart and then along the edges, spacing nails 3" apart and ⅜" from edges.

7. **Mauldings.** Where joints are to be covered with battens or mouldings, nails for attaching battens or mouldings should be of sufficient length to penetrate at least 1 inch into framing members.

8. **Painting and Decarating.** Simpson Insulating Building Board may be left in the natural factory applied finish or may be painted, enameled or otherwise decorated. For information on this subject, see specification B.

Specification B

Application of Paints and Wall Coverings to Simpson Insulating Building Board

1. **Applicatian af Insulating Baard.** The insulating board shall be applied in accordance with Specification A. Common, box or galvanized nails should be used only where nail heads are to be covered with battens or mouldings.

2. **Calcimines, Casein and Water Paints.** Calcimines and water paints may be applied directly to the factory-finished surface of Simpson Insulating Building Board although calcimines may also be applied to varnish-sized surfaces to facilitate removal by washing. A single coat of a good casein paint will usually give good coverage on Simpson Insulating Building Board.

3. **Stain.** Stains may be used where the natural unpainted surface (that is, the reverse side) of the board is to be modified without destroying the texture and where its sound absorbing properties are of importance.

3a. **Glue Stains.** Glue stains usually give the best results on Simpson Insulating Building Board. A satisfactory glue stain may be made by dissolving ½ pound of flake or ground glue in a gallon of boiling water. After the glue has been thoroughly dissolved, dry color is added in amounts depending on the depth of tone required. The dry colors are best added by mixing them

Simpson QUALITY SINCE 1895

INSULATING BOARD PRODUCTS

with a small amount of water, stirring to a thin paste which is more easily taken up by the glue solution. Glue stains of this type must be used promptly after preparation. They should, if possible, be applied while they are still warm.

3b. **Alcahal Stains.** Alcohol stains are not recommended as they dry too rapidly, leaving brush marks.

4. **Oil or Varnish Paints.** The factory-finished surface of the Simpson Insulating Building Board need not be sized if oil or varnish paints are to be applied thereto. The natural unpainted surface should, however, be properly sized before application of oil or varnish stains.

4a. **Size.** The size used should be that recommended by the paint manufacturer.

4b. **Applicotion of Point.** The best results are obtained if the surface is sanded lightly after the size coat has dried thoroughly. The paint may be applied to the surface thus prepared using the desired number of coats for satisfactory results.

5. **Plastic Paints and Woll Coverings.** Write for special instructions dealing with the use of Simpson Insulating Building Board as a base for plastic paints and wall coverings such as linoleum and wall paper.

6. **Stencil Decarations.** Where a light touch of color is desired or where a means of accentuating a design is sought, stencils are recommended. Border stencils are particularly attractive on Simpson Insulating Building Board interiors. Stencil designs may be cut in oil paper or metal. They are held in position by hand or by thumb tacks while the color is applied with a stiff stencil brush. Colors ground in Japan are recommended. The Japan color paint should be thinned to the desired consistency with a mixture of six parts turpentine, three parts linseed oil and one part Japan drier.

Specification C

Application of Simpson Insulating Building Board as Wall Sheathing

1. **Froming.** Studs shall be erected as in ordinary frame construction on 12 or 16 inch centers and 2x4 leaders inserted between framing members at the ends of insulating boards to serve as a nailing base.

2. **Noils.** Use 1½ inch galvanized roofing nails with 7/16 inch heads with ½ inch Simpson Insulating Building Board (Sheathing).

3. **Application of Insulating Baard (Sheathing.)** Apply the board vertically to all framing members with ample bearing for nailing along all edges. Nail to intermediate framing members first, spacing nails 6 inches apart; and then along the edges spacing nails 3 inches apart and ⅜ inch from the edge. Drive nails until the heads are flush with the surface of the insulating board. Leave a ⅛ inch space between adjoining boards and at ends of boards.

4. **Floshing.** Flash windows, doors and other openings with strips of metal or prepared roofing.

5. **Applicotion of Exteriar Finish aver Insulating Board.**

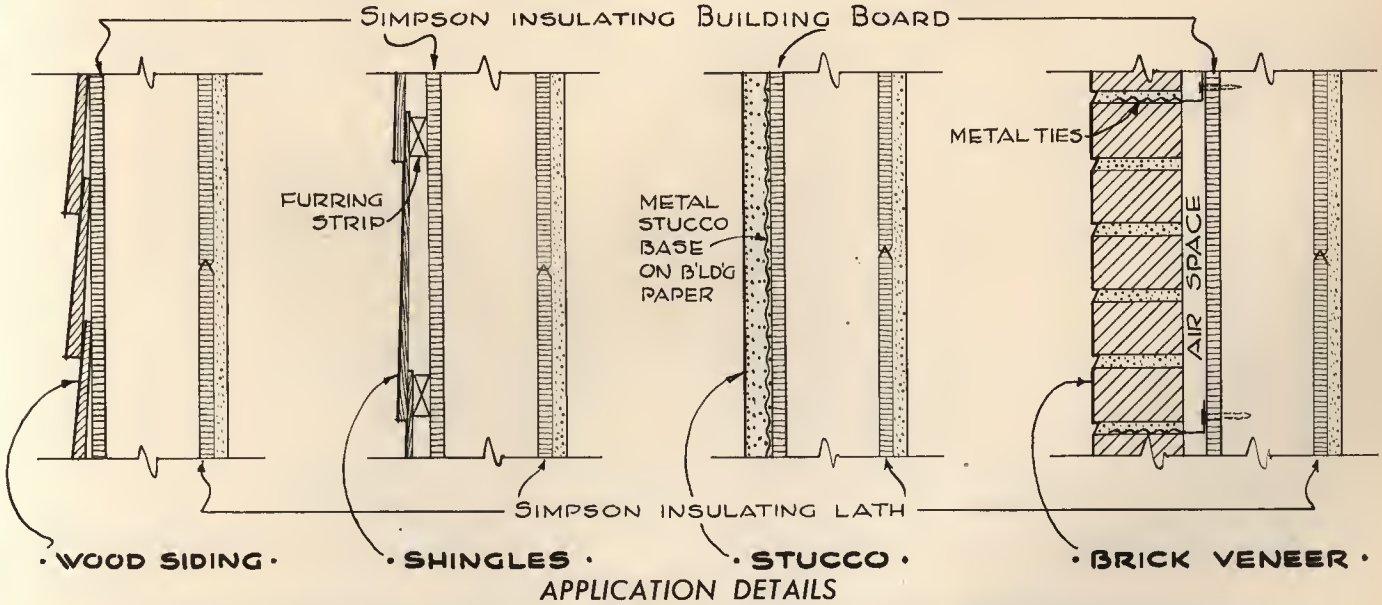
5a. **Wood Siding.** Wood siding may be applied directly over the insulating board, nailing through to the studs. Siding boards shall butt over studs, nailing through to studs.

5b. **Shingles.** Where shingles are to be used, nail 1x2-inch furring strips* horizontally over the insulating board to studs, spacing to fit shingles. Nail shingles to furring strips in accordance with manufacturer's specifications.

*Note: *Special proprietary devices are available for attaching shingles directly to insulating board without use of furring strips.*

5c. **Brick or Stone Veneer.** For brick or stone veneer, properly space anchors and nail through the insulating board into the studs or plates. *Do not nail between studs.* Lay brick or stone in the usual manner. Allow not less than ½-inch space between the insulating board and the brick or stone.

5d. **Stucco.** If stucco is to be used as exterior finish apply a layer of asphalt saturated waterproof paper over the surfaces of the insulating board. Then apply an approved metal stucco base, nailing through to studs. No stucco shall be applied to insulating board. Stucco shall be applied in accordance with stucco manufacturer's specifications.



APPLICATION DETAILS

FOR SIMPSON INSULATING BUILDING BOARD (Used for Sheathing) AND ½" SIMPSON INSULATING LATH

Specification D

Application of Simpson Insulating Lath

1. **Framing or Furring.** The studs, joists or rafters shall be erected as in ordinary frame construction on 12 or 16 inch centers. For exterior masonry walls install 1x2 furring strips vertically on 12 or 16 inch centers and shim to a true level plane.

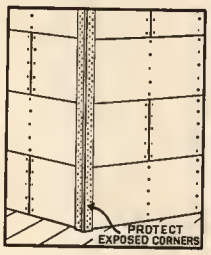
2. **Nails.** Blued plasterboard nails with 5/16 inch heads are recommended for applying Simpson Insulating Lath. Use 1¼ inch nails for ½ inch lath and 1¾ inch nails for 1 inch lath.

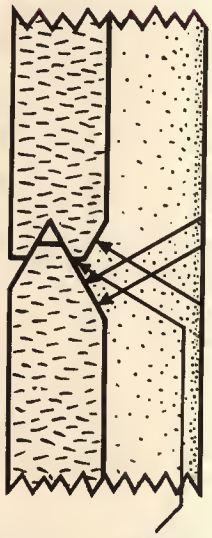
3. **Application of Lath.** Do *not* moisten lath prior to, during, or after application. Lath shall be applied with long edges at right angles to the framing or furring strips. Interlocking long edges shall fit together firmly and smoothly. Center all end joints on framing and stagger the vertical joints or end of each course of lath with the joints of the preceding course. Nail lath securely to framing, using five nails at each stud or nailing member; that is, twenty nails for each lath when framing is on 16 inch centers. Use strips of Simpson Insulating Lath where piecing out is necessary; do not fill out with wood lath or wood strips. To cover arches, curves and sweeps, first nail lath at the end, holding it to the required contour and then nail to each successive stud, joist or furring strip.

4. **Reinforcing Corners and Angles.** All outside corners shall be reinforced with metal corner beads. Reinforce all re-entrant angles with standard expanded metal lath strips 6 inches wide bent into the angle and secured in place by nailing. All metal lath reinforcing shall be nailed through Simpson Insulating Lath into framing. Use 6 inch strips of expanded metal lath to reinforce all joints between frame and masonry construction.

5. **Plastering on Simpson Insulating Lath.**

5a. **Type and Consistency of Plaster.** Standard gypsum cement plaster or gypsum wood fiber plaster containing no lime shall be used for scratch and brown coats. Both coats shall be mixed to a wet consistency to allow for application with light





PLASTER reinforced at joints

trowel pressure and to facilitate darbying. The plaster, especially for the scratch coat, should have a setting time of not more than 2 to 3 hours. Any standard plaster finish may be used over the brown coat such as gypsum, lime, or lime gauged with gypsum.

5b. **Application of Plaster.** The plaster shall be applied in three coats to full ½ inch grounds. Wherever necessary and particularly on ceilings, provide plaster screeds to insure an even, uniform full ½ inch plaster thickness. Rod and trowel surface to a true plane. All corners and angles shall be plumb and true and darby strokes shall be in the direction of the framing members, with the darby spanning two or more studs or joists.

5c. **Ventilation and Heat.** Provide adequate ventilation for proper drying of the plaster. Proper ventilation is necessary in winter as well as in summer. Adequate heat shall be provided in winter to prevent injury to fresh plaster by frost.

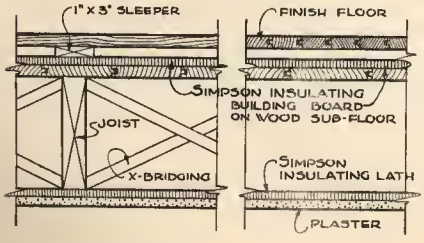
Specification E

Insulating Frame Construction Floors with Simpson Insulating Building Board

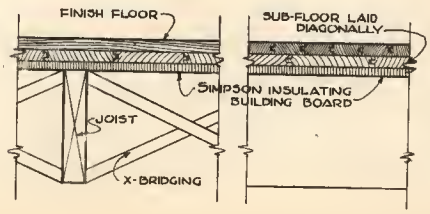
1. The simplest method of insulating intermediate frame construction floors with Simpson Insulating Building Board is to apply a layer of the board between the joists and the rough floor. The board should be applied over the joists with edges in moderate contact, nailing sufficiently to hold in place while the sub-floor is being laid. The rough or sub-flooring should be face-nailed into the joists. Nail the finish floor to the sub-floor in the usual manner.

2. **Floating Floor Construction.** Where a greater degree of sound insulation is desired, the floating floor construction is recommended. This consists of applying a layer of Simpson Insulating Building Board directly upon the rough flooring, followed by 1x3 sleepers on 16-inch centers to receive the finish flooring. The sleepers shall be securely nailed through to sub-floor.

3. **Attic Floors.** Apply a layer of Simpson Insulating Building Board directly to attic floor joists, extending to the side walls or eaves to prevent air leakage at this point. If the eaves are not tight, the joist space between the insulating board and the ceiling below should be blocked off at the ends to prevent air leakage into this space. Lay wood floor over the insulating board in portions of the attic to be used for storage or living purposes, nailing through to joists. If the attic is already covered with rough flooring, nail insulating board directly to the existing floor.



FLOATING FLOOR CONSTRUCTION



SIMPSON INSULATING BUILDING BOARD APPLIED BETWEEN JOISTS AND SUB-FLOOR

Simpson QUALITY SINCE 1895

INSULATING BOARD PRODUCTS

Specification F

Insulating Masonry Construction Floors with Simpson Insulating Building Board

NOTE: Any smooth, dry concrete or other masonry floor may be insulated with Simpson Insulating Building Board. For this purpose, the most convenient size is 2x4 ft. which may be obtained by cutting from the larger sizes with a Bevil Devil, or a fine-toothed saw. Simpson Roof Insulation, size 2x4 ft., may also be used for this purpose.

1. **Woterproofing or Dompproofing Course.** Damp basement floors or floors subjected to hydrostatic pressures, shall be waterproofed by means of a membrane waterproofing course, consisting of saturated roofing felt embedded in hot asphalt or pitch.

2. **Adhesive.** The Simpson Insulating Building Board shall be cemented to the masonry floor or to the waterproofing course by embedding in either hot asphalt or cold asphalt mastic. Asphalt emulsions are not recommended for this purpose. Where hot asphalt is used, concrete shall first be primed with an asphalt cutback.

2a. **Applicotion with Cold Plostic Cement.** Where asphalt is used, trowel mastic directly onto masonry floor to a thickness of 1/16 to ⅛ inch as required to present a plane surface, and embed insulating board therein.

3. **Applicotion of Insuloting Boord.** The Simpson Insulating Building Board shall be spaced approximately 1/16 inch apart and shall be rolled or "stepped down" to insure intimate contact and proper bond. If a second layer of insulating board is to be applied, this second layer shall be properly cemented to the first layer with a liberal coating of the adhesive used, the joints of the second layer being offset with respect to first layer.

4. **Finish Flooring.**

4a. **Wood Block Flooring (Porquet).** This type of flooring shall be applied in the customary manner as recommended by the flooring manufacturer. While hot asphalt may be used, a mastic is considered preferable. Asphalt emulsion shall not be used.

4b. **Wood Flooring (Strip).** A layer of insulating board shall be nailed to 2x3 sleepers embedded in the concrete on 48-inch centers. If the sleepers are not laid flush with the surface of the concrete slab, the space between sleepers and flush with the surface thereof should be filled with cinder or gravel concrete before application of the insulating board. Install 1x3 furring strips across the sleepers on 12 or 16 inch centers and nail through the insulating board to the sleepers. The finish floor shall then be applied to the sleepers in the usual manner. Where floor load necessitates rough flooring, apply insulating board in accordance with Specification D, paragraph 1 for Frame Construction Floors.

4c. **Mosonry Type Finish Floors.** Where the finish floor is to be of any masonry type, apply over the insulating board a flood coat of hot asphalt, or 1/16 to ⅛ inch of asphalt mastic or a membrane waterproofing course firmly bonded to the insulating board by means of a continuous mopping of asphalt. Apply granolithic cement or monolithic concrete directly over the surface thus prepared in accordance with flooring manufacturers' specifications. Unit flooring such as ceramic or quarry tile or slate should be applied over the surface thus prepared in a bed of cement in accordance with conventional practice.

Specification G

Insulating Pitched Roofs with Simpson Insulating Building Board

NOTE: Pitched roofs may be insulated by applying Simpson Insulating Building Board either to the *underside* of the roof rafters or directly *over* the roof rafters. If the insulating board is to be applied to *underside* of rafters, refer to Specification A. The paragraphs immediately following refer to the application of the insulating board *over* or on top of the roof rafters.

I. **Noils.** Either 1½-inch (4d) common or 1½-inch galvanized roofing nails may be used for applying the insulating board.

2. **Applicotion of Insuloting Boord.** The insulating board shall be applied lengthwise and directly to all framing members with ample bearing for nailing along all edges. Nail to intermediate framing members first, spacing nails 6 inches apart and then along all edges, spacing nails 3 inches apart and ⅜ inch from edges.

3. **Application of Roofing**

NOTE: Where insulating board is used on pitched roofs it is necessary to apply either wood strips or solid wood sheathing (depending on the type of roofing to be used) over the insulating board to receive the roofing as directed in the following paragraphs, 3a and 3b.

3a. **Shingles, Slote or Other Rigid Roofing.** Wood strips (roofers) to which the roofing is to be secured shall be applied directly over the insulating board, driving nails through insulating board and penetrating rafters at least I". Apply roofing to the wood strips in accordance with roofing manufacturers' specifications.

3b. **Aspholt Shingles, Roll Roofing, Metol or other Non-Rigid Roofing.** For these and other types of flexible or non-rigid roofing apply wood sheathing over the insulating board in the customary manner, nailing through to the rafters and using nails of sufficient length to penetrate the rafters to a depth of at least I inch. Apply roofing to wood sheathing in accordance with roofing manufacturers' specifications.

Specification H

Application of Simpson Insulating Decorative Tileboard

1. **General.** At least two men are required for efficient work, one to erect units and one to apply adhesive (when used) or to provide other assistance.

2. **Layout.** Where necessary a detailed layout drawn to scale shall be provided. In general, ceiling work shall be centered and the layout arranged so as to require a minimum amount of cutting and waste of material. Center lines shall be struck in the customary manner as required by layout.

3. **Cutting and Fitting.** Cutting shall be done with a Bevil Devil or a fine-toothed saw. For fitting around outlets, pipes, etc., a keyhole saw may be used.

4. **Nails, Clips and Adhesive.** Simpson Insulating Decorative Tileboard may be applied either to a continuous wood nailing base or to wood furring strips using nails or clips, or to smooth plaster or concrete using an adhesive.

4a. **Nails.** Where attachment is to be solely by nails, small headed fiberboard or insulating board nails (1½" long) shall be used. Do not drive lath nails or other similar nails through the surface or bevel of tile.

4b. **Clips.** Where clips are to be used, they shall be of copper or other rust-proof metal. Special clips suitable for the Type A tongue and groove joint are obtainable on the open market. Small-headed 2 penny blued lath nails shall be used with these clips.

4c. **Adhesive.** Where an adhesive is required, an approved acoustical or insulating board cement shall be used and shall be certified by the adhesive manufacturer to provide a permanently secure bond with cement or plaster surfaces.

5. **Preparation of Base.**

5a. **Continuous Wood Nailing Base.** Cover framing with a wood sub-base of No. 1 common Douglas Fir, West Coast Hemlock, or equivalent, matched 25/32 inch lumber to form a continuous, level nailing base. Plywood (⅜" or more thick) may be substituted for the lumber if desired.

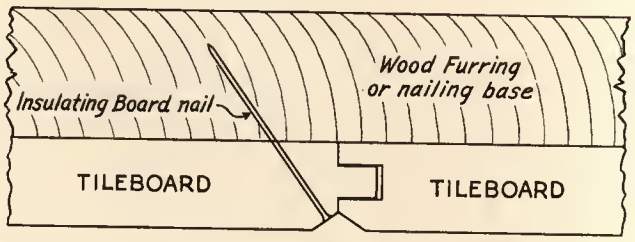
5b. **Furring Strips.** Provide 1x3 inch furring strips spaced to accommodate tile pattern but not over 16 inches on centers.

5c. **Preparation of Surfaces for Adhesive Application.** Surfaces shall be tested level and shall be solid. Any loose plaster shall be removed and the surface replastered. If plaster is generally unsound, tile shall be applied to furring strips.

5c (1). **Concrete Surfaces** shall be thoroughly dry and shall be washed with a solution consisting of 1 pound of zinc sulphate to 1 gallon of water. Surface shall be allowed to dry before applying tile.

5c (2). **Plaster Surfaces.** On new work, Simpson Insulating Decorative Tileboard may be applied directly to the brown coat, omitting the white or finish coat. If the plaster surface has been painted, a test sample shall be installed to determine whether or not the adhesive will bond satisfactorily to the paint, allowing at least 48 hours for the test. If the paint becomes soft or the tile becomes loose in this time, the paint shall be removed and the tile applied directly to plaster.

6. **Installation.**



Application of Tileboard by nailing

6a. **Conditioning Tileboard.** Condition all tileboard by opening packages and allowing to stand 24 hours in room to be treated for adjustment to atmospheric conditions.

6b. **Starting of Work.** On small areas work may be started in a corner and application proceed in both directions to the opposite sides, conforming in all cases to the requirements of the layout as specified in Paragraph 2. On large areas, work should be started in the center of the room or space, placing the first tile either with edges adjoining center line or with the center of tile on the center line of the ceiling, depending on the requirements of the layout.

6c. **Application by Nailing.** Drive nails at an angle through bevel of tile, using nails at the rate of 4 per 16"x16" tile or 6 per 16"x32" tile. Set nail heads even with surface of bevel. Drive up tile with a wood block to obtain a tight joint.

6d. **Application by Clips.** Where attachment is by clips, use a sufficient number of clips to hold tile firmly in place, but in no case less than 4 clips per 16"x16" tile or 6 clips per 16"x32" tile. Attach clips to tile before applying tile and nail through clip to furring or wood nailing base. Drive up tile with a wood block to obtain a tight joint.

6e. **Application with Adhesive.** Apply spots of adhesive 3 or 4 inches in diameter to the back surface near each corner with additional spots 8 to 10 inches apart over the area. Exercise care to prevent adhesive from appearing on the exposed finished side. Slide unit back and forth into position, finishing in final position with exposed surface level and true.

6f. **Successive units of tile** should be applied in a similar manner after inserting tongue or groove of tile to be applied in groove or tongue of tile in place, making sure that joint at bevel is tight.

6g. **Protecting Surface.** Care should be exercised to avoid soiling or damaging the surface of the tile. Mechanics handling tile should keep hands clean by washing frequently.

6h. **Mouldings.** Corners and intersections should be finished with suitable mouldings.

Simpson QUALITY SINCE 1895

INSULATING BOARD PRODUCTS

Specification I

Application of Simpson Insulating Decorative Plank

1. **Framing or Furring.** Framing or furring for plank may be either at right angles to, or parallel with, the plank. If the plank is parallel with framing or furring, long edges shall bear on framing or furring on centers corresponding to the width of plank used. Where plank is applied at right angles to framing or furring, the framing or furring shall be on 9-inch centers up to a height of 5 feet, and 12-or 16-inch centers above this height. Headers shall be inserted between framing members at the end of plank to serve as a nailing base.

2a. **Nails and Nailing.** If application is by nailing, use 1½-inch galvanized or cadmium coated fiberboard nails which shall be driven at an angle through the bevel of plank on 6-inch centers into the framing or furring, except where nail heads are to be covered by mouldings, in which case nails may be driven through surface of plank. Nails shall be driven through ends of plank into framing members. Where nails are used and driven through the bevel, best results are obtained by working with the tongue side exposed rather than toward the groove side.

2b. **Clips.** If application is by clips, insert clips into tongue or groove, spaced 12" on centers, and nail clip to framing or furring. Insert succeeding plank into groove or tongue of plank in place and repeat procedure. Nails shall be driven through ends of plank into framing members.

3. **Application of Plank.** Start application of plank at corner or wall intersection. With a Stanley Fiber Board Plane, a Bevil Devil or fine-tooth saw, cut off with a square cut the bevel on one side of the starting plank and butt this edge against wall or corner. Nail through face of plank into framing or furring at corner, keeping nail head within ½ inch of edge of plank. Insert tongue or groove of next adjoining plank to be applied into groove or tongue of plank in place, and continue procedure to end of wall, cutting last plank to fit available space.

4. **Mouldings.** Exterior corners of plank shall be protected with corner beads. Intersections at ceilings and elsewhere as required by the design shall be finished with suitable mouldings.

WOODFIBER DIVISION • SIMPSON LOGGING COMPANY

Plant at Shelton, Washington

SALES DIVISION: 1010 White Bldg., Seattle 1, Washington

PRODUCTS OF SIMPSON RESEARCH

Distributors of Simpson Insulating Board Products

decay termite Protected WITH PENTACHLOROPHENOL

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- ARIZONA SASH, DOOR & GLASS CO. Phoenix and Tucson

CALIFORNIA
- CALIFORNIA BUILDERS SUPPLY CO. Oakland, Fresno and Sacramento
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- FROST HARDWOOD LUMBER CO. San Diego
- SIMPSON INDUSTRIES Las Angeles
- WESTERN DOOR & SASH CO. Oakland and Berkeley

COLORADO
- LUMBER DEALERS, INC. Denver and Pueblo

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- CONTINENTAL LUMBER CO. Baise
- EXCHANGE LUMBER & MFG. CO. Spakane, Washingtan
- UTAH LUMBER CO. Salt Lake City, Utah

ILLINOIS
- HUSS LUMBER COMPANY Chicaga

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NEW MEXICO
- NEW MEXICO COMPANY Albuquerque

OKLAHOMA
- WM. CAMERON & CO., INC. Altus

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TEXAS
- WM. CAMERON & CO., INC. Waca, Abilene, Austin, Beaumant, Carpus Christi, Dallas, Fart Warth, Harlingen, Haustan, Lubbock, Lufkin, Odessa, San Angela, San Antania, Texarkana, Tyler and Wichita Falls
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WASHINGTON
- ELLIOTT BAY LUMBER CO. Everett, Seattle and Yakima
- EXCHANGE LUMBER & MFG. CO. Spokane
- CHAS. E. SAND PLYWOOD CO. Partland, Oregan
- SIMPSON INDUSTRIES Sheltan

AFS-48

Lithagraphed in U.S.A.

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250,000 ACRES OF GROWING TREES FOR FUTURE USE

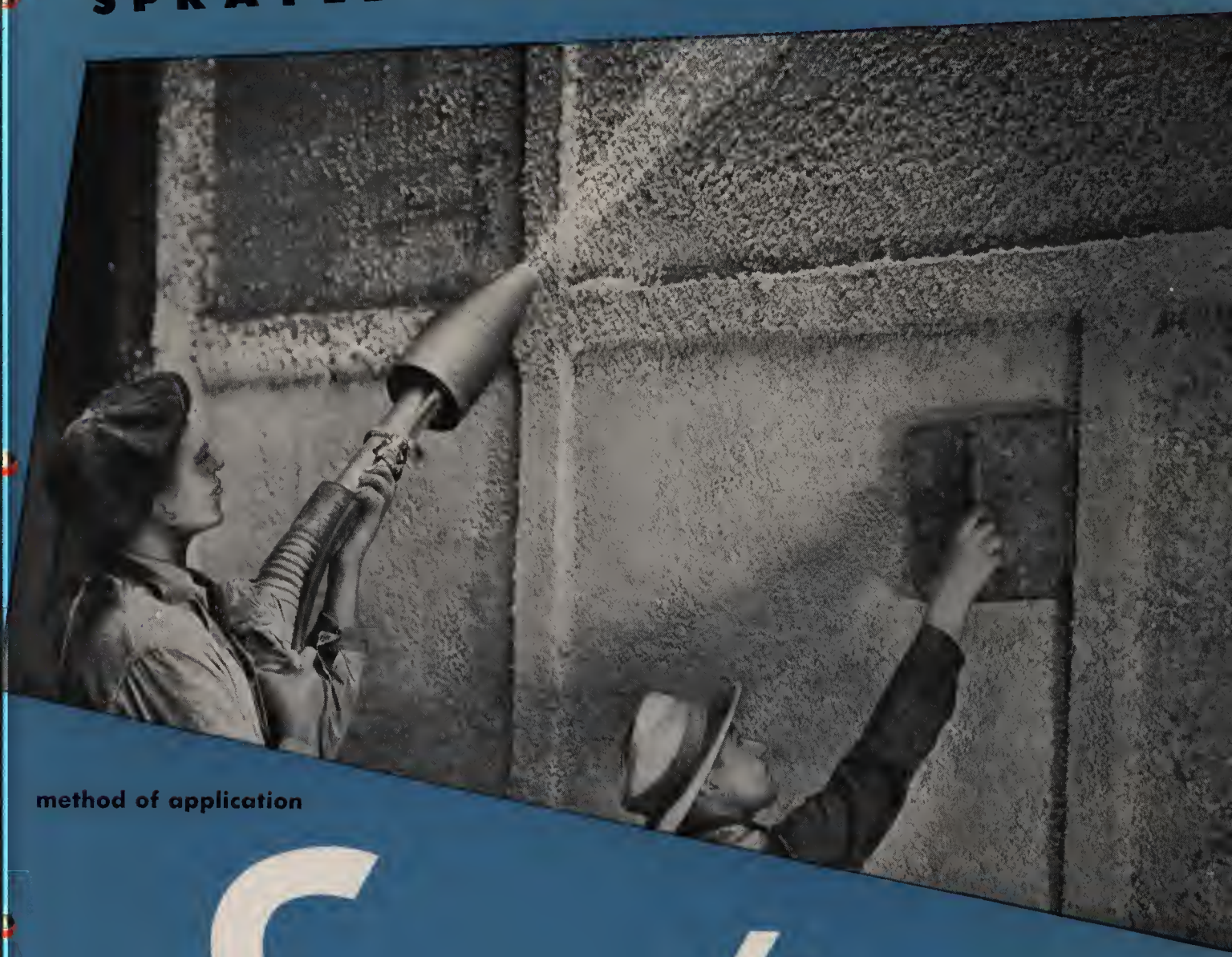
Simpson

QUALITY SINCE 1895

SUSTAINED YIELD UNIT

The above photograph shows a portion of the vast Simpson Sustained Yield Unit, covering 250,000 acres of land in the northwest corner of the State of Washington. In this area a continuous succession of crops of Douglas fir trees grown under intelligent, scientific forest management insures a continuous growth of merchantable forest products.

SPRAYED INSULATION, INC.



method of application

Spraykote

Trademark Reg. U. S. Pat. Off.

industrial fibre insulation

approved by Board of Standards and Appeals,
New York City, for acoustical thermal insulation

industrial application

SprayKote characteristics

SprayKote is an ideal material for thermal insulation, it is applied to surfaces of wood, metal, glass, rock lath, concrete, plaster and materials previously coated with oil paint.

SprayKote consists of six different asbestos and mineral wool fibres. The binders, while water soluble, are not affected by moisture condensation, steam, or roof leaks—once they are set.

Sprayed Insulation, Inc. has its own fibre processing plant in which the different fibres are refined and blended. This concentration of effort assures uniform quality, imperative in this type of work.

SprayKote is applicable in most types of building construction, corrugated metal, transite, masonry or others. In ship insulation, SprayKote is widely used for the insulation of bulkheads and deckheads; it is protected by expanded metal lath with hard plaster finish. It also provides excellent sound deadening and eliminates troublesome condensation.

Because SprayKote is monolithic, it eliminates cracks, seams and holes. In industrial insulation work, SprayKote is generally left unpainted as its naturally light color has a high light reflection factor and excellent appearance. SprayKote is verminproof, water-repellent, rust-resistant, wind-tight and fireproof. It is light in weight and withstands vibration.

application: SprayKote is applied by a spray gun—in thickness of 1 inch or more, depending upon insulating results desired. After the proper thickness is applied, the SprayKote is tamped for texture giving a rough travertine finish perfectly satisfactory for industrial work.

SprayKote is applied by licensed applicators throughout the United States, employing skilled workmen experienced in this type of application.

dust control: The tremendous advantage of SprayKote over similar products is that the patented process practically eliminates the troublesome dust heretofore present during application. This is accomplished by giving the surface a positive (or cationic) electrical charge and the material being applied a negative (or anionic) electrical charge. The resultant action is about the same as a magnet drawing iron fillings. Not only does the SprayKote process practically eliminate the dust, but it also provides an increase speed of application affording a more uniform and finer texture; a stronger internal strength.

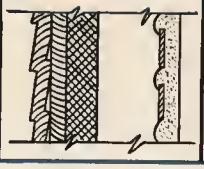
for thermal insulation

SprayKote is frequently applied to the underside of a floor directly over an excavated and unheated area; to ceilings over loading platforms; to areas tunneled under a building for railroad tracks and driveways. The floor over such unheated areas is often most uncomfortable—even though a wall thermometer registers 70° F.

SprayKote is also used on ceilings of boiler rooms. Without this insulation, the constant soaking heat in such areas makes overhead rooms almost untenable. An application of SprayKote 1½ inches thick—assures trouble-free insulation, thereby eliminating this condition.

SprayKote—in 1 inch thickness—applied to the side walls and ceilings of metal buildings gives insulation that is wind-tight, rust-resistant and fireproof. It reduces the heat loss by as much as 75%, making buildings warm and comfortable in winter, cool in summer. In addition, it gives high sound absorption, necessary today in modern production.

heat loss characteristics

construction	detail	not insulated	SprayKote insulated ½ in.	1 in.	1½ in.	2 in.
built-up roofing on concrete roof slab		.72* .64*	... ...	.18* .17*	.13* .13*	.10* .10*
built-up roofing on precast cement tile supported on steel purlins		.84	...	.19	.13	.10
corrugated metal or transite wall		1.50	.37	.21	.14	.11
wood stud side wall		.26	.15	.12	.10	.08

*4" concrete slab *6" concrete slab

for condensation control

Condensation caused by warm air striking cold surfaces can be effectively controlled usually by 1 inch of SprayKote. This is done by applying the initial SprayKote binder, blowing a *thin* coat of the SprayKote fibre and trowling into a gummy mass some ⅜ inches in thickness effectively providing a moisture barrier. The SprayKote insulation is then applied over the barrier to the required thickness. By this method the building is protected against heat leakage as well as against ice-forming condensation.

Condensation control is considered essential to the well-being of workers in laundries, cold-storage, bottling and steam sterilizing plants and similar industries. In addition, it provides a definite protection against increased operating expenses due to excessive moisture and heat loss.

Low cost markets and stores can be built at less cost by applying "SprayKote" directly to the masonry side walls above a 6½ foot height. This procedure insulates, damp-proofs and gives a finish at the same time, saving the expense of lath, plaster and paint. "SprayKote" applied ⅜ inches to a plasterboard ceiling is the proper treatment for such areas.

for fire prevention

SprayKote, being noncombustible, provides protection against fire, it is especially adaptable to application on metal ducts, beams and girders.

Quoting from the bulletin of the Board of Standards and Appeals, City of New York, dated June 18, 1946: "Commissioner Charles M. Blum and Mr. Hugh P. Fox of the Engineering Staff of the Board inspected an installation of SprayKote on the ceiling of the first floor of a restaurant located at 148 East 48th Street, Manhattan—after a break in the plumbing on the floor above occurred, causing the ceiling to become soaked. It was apparent that the treated ceiling dried out without any evidence of deterioration."

Inspection was also made of a SprayKote treated space between the beams of the ceiling of the kitchen and to an air-conditioning duct at the same location. Application to the ceiling was ⅞ inch thick and to the duct, ⅜ inch. Inspection was made after a fire and indicated that the portion of the ceiling between the beams which was treated was undamaged and that plaster on the beams which had not been treated had fallen away from the concrete beams.

fire resistive test

The J. L. Finck Laboratories tested a sample of SprayKote (1102 fibre), one inch thick, mounted on a ⅜ inch plaster board, 14 inches square. Except for slight discoloring, the exposed surface of the SprayKote remained intact, while the plaster board disintegrated. The following results were observed:

temperatures in degrees F.

	furnace	bet. SprayKote & plast. board	surface of plast. board
30 min. time	1602	460	238
60 min. time	1625	910	800

SprayKote
industrial application

specification

Suggested wording for specifications of "SprayKote" for thermal insulation purposes:

Material shall be "SprayKote" as manufactured and applied by Sprayed Insulation, Inc., Newark, New Jersey.

"SprayKote" shall be applied by gun method direct to surface provided, to a thickness of....., having a "K" factor of 0.261 Btu/hr./sq. ft./inch thickness/degrees F. temperature differential.

The surface for the application shall be free from oil, grease, rust or other substance likely to impair adhesion.

In the case of corrugated buildings, the application, unless otherwise specified, shall conform to corrugations of existing metal sheathing.

The fibre shall be "SprayKote" 1102 and the binder a synthetic resin, which after setting, shall not be affected by water, steam, moisture or condensation.

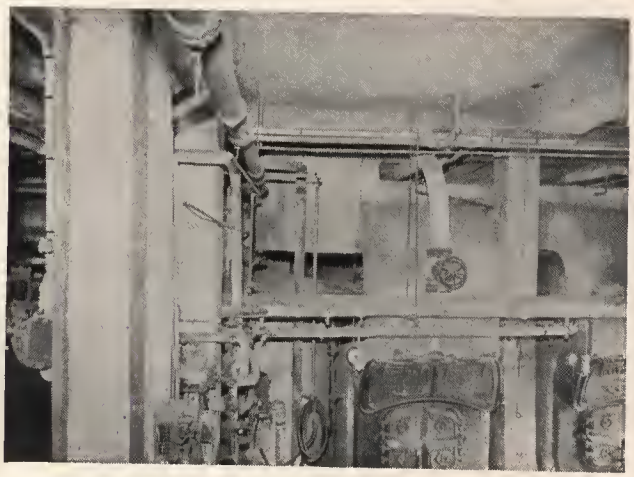
The above specified material shall be applied and finished as follows:

> An initial coat of anionic binder shall be applied by spraygun method to surface to be treated and before this has set, "SprayKote" cationic fibre and binder in sufficient quantity to finish to specified thickness shall be blown on. This shall then be tamped to rough industrial texture and oversprayed with final coat of "SprayKote" binder.

typical application

Fire Department Repair Shop	New York, N. Y.
Celanese Corp.	Narrows, Virginia
Bullocks Dept. Store	Pasadena, Calif.
Reynolds Metals Co.	Harrison, N. J.
Ciba Pharmaceutical Co.	Summit, N. J.
Public School 157	Queens, N. Y.
Public School 22	Bronx, N. Y.
Duralac Chemical Co.	Newark, N. J.
Chris-Kraft Instrument Co.	Union, N. J.
Ballentine & Sons	Newark, N. J.
The Hercules Company	Jersey City, N. J.
Wilkata Folding Box Co.	Kearny, N. J.
Photo Products Co., Div. of du Pont de Nemours Co.	Parlin, N. J.
Naval Reserve Armory	Clifton, N. J.
Naval Reserve Armory	Elizabeth, N. J.

numerous reserve Armories throughout the U. S. such as Clifton and Elizabeth, N. J.



advisory service

Sprayed Insulation, Inc., has inaugurated its SPRAYKOTE service to assist architects and contractors in handling different problems of thermal insulation, acoustical correction, sound deadening and condensation control. This service rendered by a staff of alert, highly competent men, thoroughly conversant with modern building methods. For complete information about the SPRAYKOTE advisory service contact the national distributor or the representative in your territory.

SPRAYED INSULATION, INC.
56-58 Crittenden Street, Newark, N. J.
Telephone: Humbolt 5-2372
New York City, telephone: Enterprise 6407

sold and installed by . . .

10a
18

Sprayed DIRECTLY ON TO ANY CLEAN RIGID SURFACE—CONCRETE, MASONRY, PLASTER, METAL, CEMENT AND ASBESTOS BOARD, ETC.—IN ANY THICKNESS REQUIRED

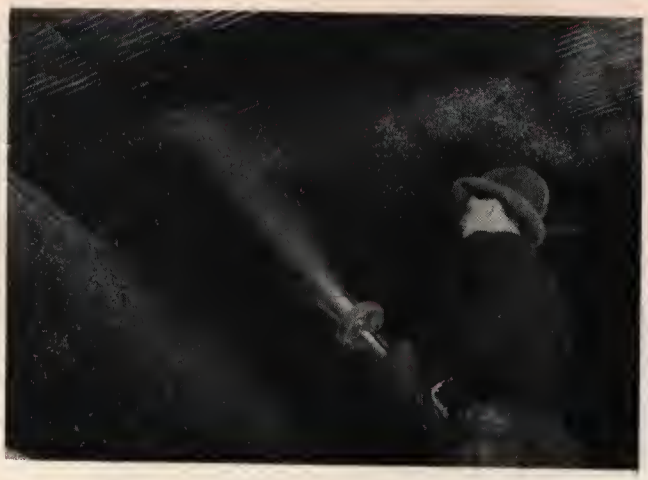
INSTALLED IN:—Schools, Hospitals, Churches, Industrial Plants, Office Buildings, Theatres, Commercial Buildings, Dwellings, Hotels, Auditoriums, Apartment Buildings, Cold Storage Plants, Storage Tanks, Libraries, Warehouses, Steel Mills, Ordnance Plants, Airplane Hangars, Restaurants, Caieterias, Machine Shops, Laboratories, Banks, Public Utility Buildings, Dairy Buildings, etc.

Sprayo-Flake Company, Chicago 18, Ill.

Sprayo-Flake Insulation

SPRAYO-FLAKE PROCESS

The highly efficient bonded Sprayo-Flake Spray-Molded Insulation Mat is unique in that it is fabricated and applied in one single, efficient, economical operation on the job. The Sprayo-Flake Insulation Process consists of forcibly projecting, through a specially constructed Sprayo-Flake Insulation Gun, dry fibrous materials simultaneously with an atomized adhesive. The adhesive primes the surface being treated and coats the fibres as they leave the nozzle of the Sprayo-Flake Insulation Gun, causing them to build up in a homogeneous, light weight, bonded, cellular insulation mat on the structural surfaces treated. Because Sprayo-Flake Insulation is fabricated and applied on the job in one operation, it is always quoted on a job contract basis including labor and materials. . . . The process, the application equipment, and the finished insulating mat are fully protected by United States and Canadian patents.



CHARACTERISTICS

SPRAYO-FLAKE INSULATION PROVIDES 100% INSULATING EFFICIENCY: The usual laboratory testing procedure does not take into consideration the factors of wind infiltration and improper cutting and fitting in the installation of the insulating material tested. Sprayo-Flake Insulation insures 100% insulating efficiency because it is "Tailor-Made," Spray-Molded, and Bonded securely in place.

MULTIPLE PURPOSE: Sprayo-Flake Insulation applied for one specific purpose invariably provides the advantages, without additional cost, of all three—thermal insulation—noise reduction—condensation control.

LOW THERMAL CONDUCTIVITY: 0.246 BTU per hour, per square foot, per inch thickness, per degree temperature differential, for Type DF.

IN GENERAL—SPRAYO-FLAKE INSULATION:

- Is sprayed with Sprayo-Flake Insulation Guns any required thickness (i.e., ½", ¾", 1", 1¼" or 1½" in one operation) on masonry, concrete, aluminum, steel, cement and asbestos board, cement block, cinder block, hollow tile, wood, etc.
- Is a 100% efficient "Tailor-Made Bonded Insulation Mat" that stops heat, cold, drafts, wind, etc.
- Forms a Continuous Bonded Thermal Insulation Mat that will not slip, sag or settle.
- Bonds to structural surfaces treated and conforms to surface contours covering all structural joints, cracks and crevices.
- Has no holes, laps, gaps, seams, cracks, joints, and does not require cutting ,fitting, nailing or tacking.
- Makes it possible to reduce the capacity of heating plant facilities otherwise required.
- Assures greater comfort and substantial fuel savings.

VERSATILITY: Sprayo-Flake Insulation is a versatile product produced from fibrous insulating materials and adhesives suited to simultaneous Sprayo-Flake Insulation Gun application to structural surfaces having regular or irregular centers, spacings or contours. New types and adaptations of Sprayo-Flake Insulation, each particularly adapted for specific purposes, are continuously under development by our Engineering Department. Consult the Sprayo-Flake Company for suggestions as to proper Type of Sprayo-Flake Insulation for your Insulation, Condensation and Sound Control problems.

STANDARD TYPES

TYPE "DF"—A Continuous Bonded Thermal Insulation Mat composed of No. 9745 Sprayo-Flake Fire-Resistant Cellulose Fibres with No. 9720 Sprayo-Flake Asphaltic Binder and Surface Coating. Applied in ½", ¾", 1", 1¼", or 1½" thickness in one operation—for required thickness see "Heat Transmission Comparison Data" on page 3. Natural or tamped surface. Natural black surface color or overcoated with Sprayo-Flake No. 9715 Aluminum "Spray-Seal" Thermal Insulation Coating.

TYPE "DF-C"—Same as Type "DF" except increased adhesive concentration. Recommended for exposures and occupancy conditions requiring additional moisture vapor resistance as well as for metal surfaces and the underside of roof and ceiling areas.

TYPE "DF-C-MC"—Same as Type "DF-C" except coated with No. 9780 Sprayo-Flake Fibrated Mastic Asphalt and overcoated with No. 9720 Sprayo-Flake Asphaltic Surface Coating. Natural black surface color or overcoated with Sprayo-Flake No. 9715 Aluminum "Spray-Seal" Thermal Insulation Coating. Recommended for exterior applications on tanks, dust collectors, special building structures, etc.

TYPE "DF-C-XR"—Same as Type "DF-C" except overcoated with a ¼" or ½" thick Incombustible Type "XR" Spray-Acoustic Mat which provides a gray-white, light reflective, sound absorbing, incombustible interior exposed surface.

TYPE "XRA"—A Continuous Bonded Thermal Insulation Mat composed of No. 9702 Sprayo-Flake Incombustible Blended Mineral Wool and Asbestos Fibres with No. 9720 Sprayo-Flake Asphaltic Binder and Surface Coating. Applied in ½", ¾", 1", 1¼", or 1½" thickness in one operation. Natural or tamped surface. Natural black surface color or overcoated with Sprayo-Flake No. 9715 Aluminum "Spray-Seal" Thermal Insulation Coating.

TYPE "XRA-C"—Same as Type "XRA" except increased adhesive concentration. Recommended for exposures and occupancy conditions requiring additional moisture vapor resistance as well as for metal surfaces and the underside of roof and ceiling areas.

TYPE "XRA-C-MC"—Same as Type "XRA-C" except coated with No. 9780 Sprayo-Flake Fibrated Mastic Asphalt and overcoated with No. 9720 Sprayo-Flake Asphaltic Surface Coating. Natural Black surface color or overcoated with Sprayo-Flake No. 9715 Aluminum "Spray-Seal" Thermal Insulation Coating. Recommended for exterior application on tanks, dust collectors, special building structures, etc.

TYPE "XRA-C-XR"—Same as Type "XRA-C" except overcoated with a ¼" or ½" thick Incombustible Type "XR" Spray-Acoustic Mat which provides a gray-white, light reflective, sound absorbing, incombustible interior exposed surface.

TYPE "PB" PLASTERBASE—A Continuous Bonded Thermal Insulation Plasterbase composed of No. 9745 Sprayo-Flake Fire-Resistant Cellulose Fibres with No. 9720 Sprayo-Flake Asphaltic Binder and Surface Coating. Applied in a ½" or ¾" thickness in one operation. See illustrations and details on page 7.

TYPE "SPRAYO-BATT"—See illustrations and details on page 6.

Sprayo-Flake Company, Chicago 18, Ill.

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Printed in the U.S.A.

Form S-1230

HEAT TRANSMISSION COMPARISON DATA

Through Uninsulated and Sprayo-Flake Insulated Construction

Expressed in B.t.u. per hour, per square foot, per degree difference in temperature

Below are given comparative figures for heat transmission of various types of construction, uninsulated and insulated with various thicknesses of Sprayo-Flake Insulation.

These figures, obtained experimentally by Prof. Frank B. Rowley of the University of Minnesota by means of the "Hot-box" method, approved by A.S.H.V.E. check closely with estimated values and are suitable for use in estimating heat loss in figuring heating and air-conditioning installations.

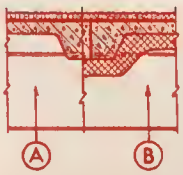
Construction—(A) Steel Frame Walls covered with Corrugated Sheet Steel. **(B)** Same construction as (A) plus Sprayo-Flake Insulation.

A—Not Insulated	B—Sprayo-Flake Insulated			
	½ inch	1 inch	1½ inch	2 inch
1.500	0.375	0.215	0.150	0.116

Construction—(A) Built-up Roofing—Steel Deck supported on steel purlins. **(B)** Same construction as (A) plus Sprayo-Flake Insulation.

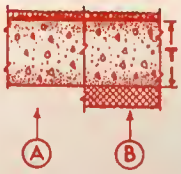
A—Not Insulated	B—Sprayo-Flake Insulated			
	½ in.	1 in.	1½ in.	2 in.
0.950	0.328	0.198	0.142	0.111

Construction—(A) Built-up Roofing—1 inch thick Precast Cement Tile supported on steel purlins. **(B)** Same as (A) plus Sprayo-Flake Insulation.



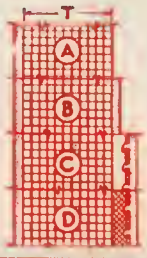
A—Not Insulated	B—Sprayo-Flake Insulated			
	1 in.	1½ in.	2 in.	2½ in.
0.840	0.193	0.139	0.109	0.089

Construction—(A) Built-Up Roofing—Concrete Roof Slab. **(B)** Same construction as (A) plus Sprayo-Flake Insulation.



Thickness T	A—Not Insulated	B—Sprayo-Flake Insulated		
		1 in.	1½ in.	2 in.
4 in.	0.72	0.185	0.135	0.106
6 in.	0.64	0.180	0.132	0.105

Construction—(A) Brick. **(B)** Same as (A)—Plastered. **(C)** Same as (A)—Furring Lath and Plaster. **(D)** Same as (C) plus Sprayo-Flake Insulation.

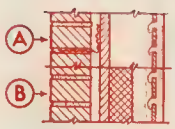


Thickness T	Not Insulated			D—Sprayo-Flake Insulated		
	A	B	C	½ in.	¾ in.	1 in.
8½ in.	0.50	0.46	0.30	0.187	0.158	0.136
13 in.	0.36	0.34	0.24	0.163	0.140	0.123

Construction—(A) Stucco—Tile. **(B)** Same as (A)—Plastered. **(C)** Same as (A)—Furring, Lath and Plaster. **(D)** Same as (C) plus Sprayo-Flake Insula-

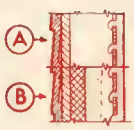
Thickness T.	Not Insulated			D—Sprayo-Flake Insulated		
	A	B	C	½ in.	¾ in.	1 in.
8 in.	0.40	0.38	0.26	0.170	0.146	0.128
12 in.	0.30	0.29	0.22	0.152	0.133	0.117

Construction—(A) Brick Veneer, Air Space, Building Paper, Sheathing, Studding, Lath and Plaster. **(B)** Same as (A) plus Sprayo-Flake Insulation.



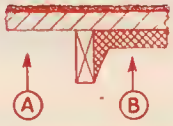
A—Not Insulated	B—Sprayo-Flake Insulated				
	½ in.	1 in.	1½ in.	2 in.	2½ in.
0.270	0.175	0.130	0.103	0.085	0.073

Construction—(A) Bevel Siding, Building Paper, Sheathing, Studding, Lath and Plaster. **(B)** Same construction as (A) plus Sprayo-Flake Insulation.



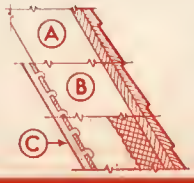
A—Not Insulated	B—Sprayo-Flake Insulated				
	½ in.	1 in.	1½ in.	2 in.	2½ in.
0.250	0.167	0.125	0.100	0.083	0.071

Construction—(A) Built-up Roofing— in. Wood Roof Deck on wood joists. **(B)** Same as (A) plus Sprayo-Flake Insulation.



A—Not Insulated	B—Sprayo-Flake Insulated		
	½ in.	1 in.	1½ in.
0.490	0.250	0.166	0.125

Construction—(A) Shingles, Building Paper, Boarding, Rafters. **(B)** Same as (A)—Lath and Plaster. **(C)** Same as (B) plus Spravo-Flake Insulation.



Not Insulated		C—Sprayo-Flake Insulated		
A	B	1 in.	1½ in.	2 in.
0.56	0.32	0.140	0.110	0.090

THERMAL INSULATION APPLICATION

On Masonry Construction

Sprayo-Flake Insulation is the ideal insulation for masonry walls because it is bonded securely to the wall surface treated providing highly efficient life-time insulation and at the same time sealing the wall against air infiltration.

Sprayo-Flake Insulation covers all joints, cracks and crevices and because it is bonded, does not slip, sag or settle. High pressures on the outside of walls caused by heavy winds are effectively sealed out.

The emulsified asphaltic adhesive used in applying Sprayo-Flake Insulation is one of the finest damp-proofing agents known to the construction science.

The Sprayo-Flake Insulation Mat adheres securely to all types of masonry construction such as brick, cement tile, cement block, cinder block, concrete, cement and asbestos board, etc.

Thousands of users have found Sprayo-Flake Insulation to be the answer to their insulation problems.

Heat Transmission Comparison Data on page 3.

Sprayo-Flake Thermal Insulation being applied between furring strips on the inner surface of brick wall.

On Steel Construction

Sprayo-Flake Insulation is especially well adapted to use on all types of metal buildings. Being plastic in nature, it bonds and conforms to the surface of the outer covering without cutting and fitting. Sprayo-Flake Insulation stops the infiltration of air through joints between adjacent siding sheets. These properties add up to substantial savings in both installations and maintenance throughout the life of the building.

Sprayo-Flake Insulation has proven to be the most practical insulation for all types of steel and metal buildings.

The Sprayo-Flake Bonded Insulation Mat is applied to the required thickness to the inside surface of the metal roof decking or sheet metal walls. Sprayo-Flake Insulation is usually applied around exposed purlins in a ¼" to ⅜" thickness.

Sprayo-Flake Insulation not only reduces winter heat loss but also materially reduces summer temperatures within the building.

Heat Transmission Comparison Data on page 3.

Sprayo-Flake Thermal Insulation being applied to the underside of metal roof deck and around exposed purlins.

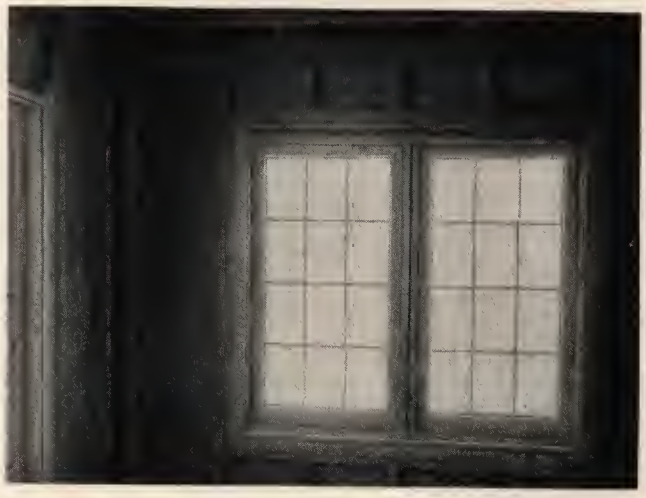
On Wood Construction

Sprayo-Flake Insulation is bonded directly to wood sheathing, roof decks, etc. Since Sprayo-Flake Insulation is plastic in nature and is spray-molded in place it is easily applied between structural members with either regular or irregular spacings.

Many Sprayo-Flake Insulation applications have been made in frame constructed buildings providing both winter and summer comfort. Some frame constructed buildings that would otherwise have been impossible to heat have been converted into economically heated buildings with the application of Sprayo-Flake Insulation.

The Sprayo-Flake Insulation Mat covers all cracks and crevices and it not only provides a highly efficient insulation but it also seals the exposed surfaces against cold and warm air infiltration.

See page 6 for "Sprayo-Batt Vapor Sealed Thermal Insulation" and page 3 for Heat Transmission Comparison Data.



Sprayo-Flake Thermal Insulation applied on wood sheathing between wall studdings.

Sprayo-Flake Thermal Insulation being applied on the inner surface of cinder block masonry wall to be left exposed.

Sprayo-Flake Thermal Insulation being applied to the underside of sloping metal roof of steel constructed building.

Sprayo-Flake Thermal Insulation applied to the underside of wood roof planking between roof joists.

SOUND INSULATION

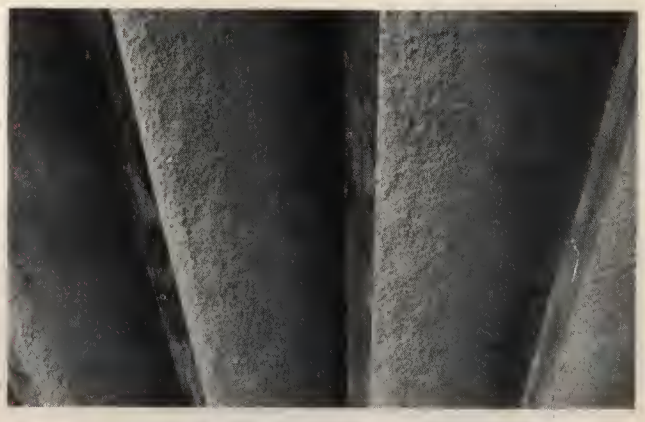
Sprayo-Flake Insulation is a very effective sound deadening insulation when applied directly to one side of the sound transferring membrane. Tests were made by the C. F. Burgess Laboratories on floors and walls before and after being treated with Sprayo-Flake Insulation in actual structures.

FOR CEILINGS

See complete acoustical data and illustrations in section 11a Sweet's 1948 Architectural Catalog. 11

FOR FLOORS

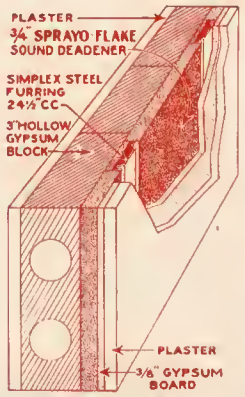
When the tests were made on the uninsulated and the Sprayo-Flake Insulated 2½" concrete floors it was found that 5½ times as much noise in physical units passed through the uninsulated floor as passed through the same floor insulated with Sprayo-Flake Insulation.



Underside of Concrete Floor between Steel Joists Insulated with Sprayo-Flake Insulation.

FOR WALLS

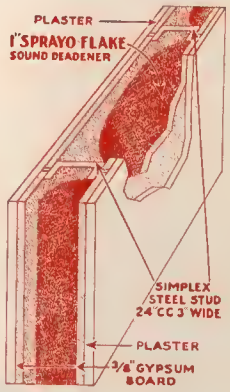
Sprayo-Flake Insulation provides an excellent sound barrier in both interior and exterior wall construction. It is well adapted for use in hospitals, clinics, consultation offices, apartments, residences, public, educational, commercial and industrial buildings. Typical interior partition wall constructions are illustrated below.



Wall "A"

The construction of wall "A" consisted of 3 inch standard hollow gypsum partition tile, plastered with ½ inch of gypsum plaster on one side and Simplex Steel Furring, ¾ inch Sprayo-Flake, ⅜ inch gypsum lath covered with ½ inch gypsum plaster.

Logarithm of Reduction 6.27
Reduction in Sensation Units 62.70



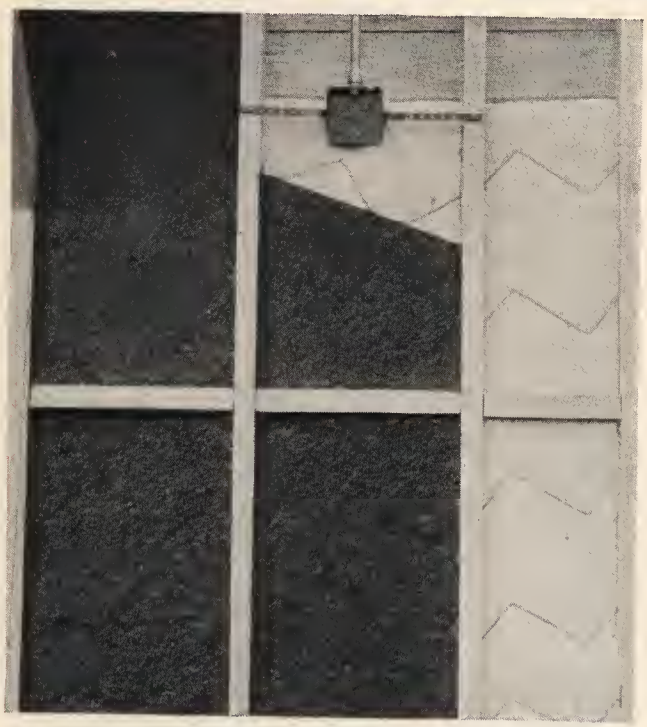
Wall "B"

The construction of wall "B" consisted of Simplex Steel Studs, ⅜ inch gypsum lath covered with ½ inch of gypsum plaster on both sides and 1 inch of Sprayo-Flake.

Logarithm of Reduction 4.75
Reduction in Sensation Units 47.50

Sprayo-Flake Insulation

SPRAYO-BATT VAPOR SEALED THERMAL INSULATION



Section of Sprayo-Batt installation showing Refrigerator Type Mineral Wool Batts held in place with steel Z spring clips and a ½" thick Sprayo-Flake Insulation mat applied over batts.

HEAT INSULATION COEFFICIENTS

Construction	No Insulation	Insulated with 2-2½" Sprayo Batt
Frame Construction Siding, Sheathing, Paper, Wood Studs, Lath and Plaster	.260	**.080**
Brick Veneer Construction 4" Brick, Sheathing, Paper, Wood Studs, Lath and Plaster	.280	**.082**
Ceiling with no Flooring Wood Joists and Metal Lath and Plaster	.690	**.098**
Ceiling with Flooring Wood Joists, Rough Flooring, Metal Lath and Plaster	.300	**.084**

Sprayo-Batt overall thermal conductivity is 0.10 B.T.U. per hr., per sq. ft. per deg. temp. differential.

Specification

Install in areas listed below Sprayo-Batt Insulation as manufactured by Sprayo-Flake Company, Chicago, Illinois: (Here list exterior walls, roofs, ceilings, floors, etc.).

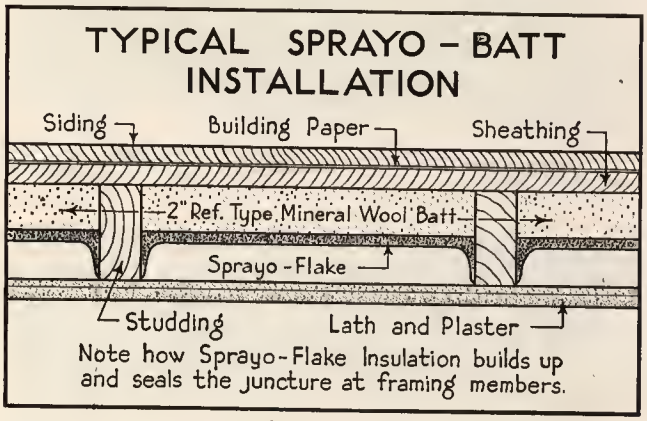
Materials shall be 2" thick Refrigerator Type Mineral Wool Batts vapor sealed on the inside by a ½" thick layer of Sprayo-Flake Insulation Type "DF-C" (or "XRA-C").

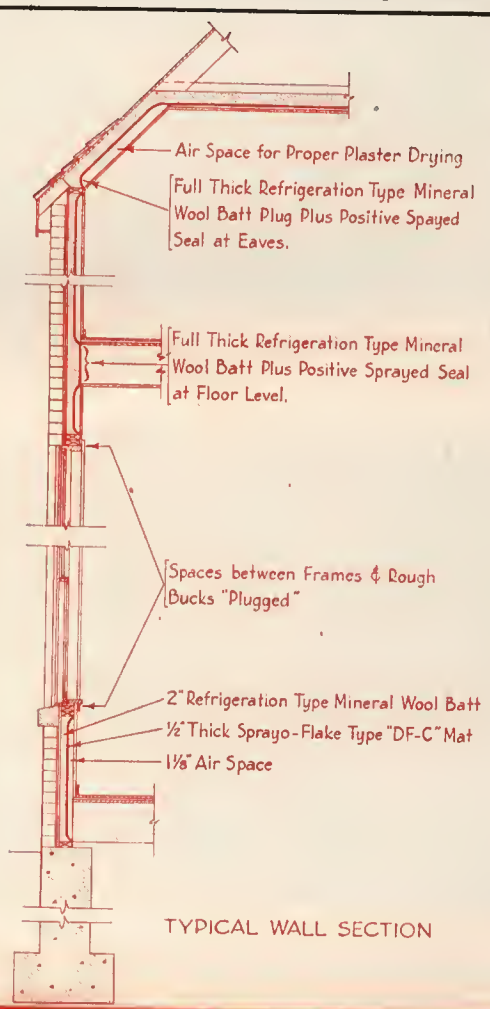
Installation shall be by experienced workmen under the direct supervision of a Licensed Sprayo-Flake Applicator.

Refrigerator Type Mineral Wool Batts shall be installed next to the sheathing or roof boards between the structural members and secured in place by steel Z spring clips spaced approximately 16" o.c., over the Refrigerator Type Mineral Wool Batts so installed shall be applied a ½" thick continuous moisture and windproof membrane of Sprayo-Flake Insulation Type "DF-C" (or "XRA-C") with an overspray of emulsified asphalt. This membrane shall effectively seal all openings and interstices.

Sprayo-Batt Thermal Insulation is a moisture resisting combination of Refrigerator Type Mineral Wool Batts and Sprayo-Flake Insulation. Two-inch Refrigerator Type Mineral Wool Batts are installed between the wood framing members held in place by steel Z spring clips. On the inner or warm side of the Refrigerator Type Mineral Wool Batts a ½" thick mat of Sprayo-Flake Insulation Type "DF-C" (or "XRA-C") is applied which provides an effective vapor-proof barrier.

Sprayo-Batt Thermal Insulation is an ideal insulation for frame and brick veneer constructed buildings. Tests and experience have shown that a vapor seal is necessary if wall insulation materials are to function at their maximum efficiency. In Sprayo-Batt insulation the spray-molded sealing mat functions also as an insulation.





SPRAYO-FLAKE PLASTERBASE

Insulating — Damp Proofing

Sprayo-Flake Type "PB" Plasterbase solves the disturbing problem of how to dampproof, insulate and lath solid masonry walls economically.

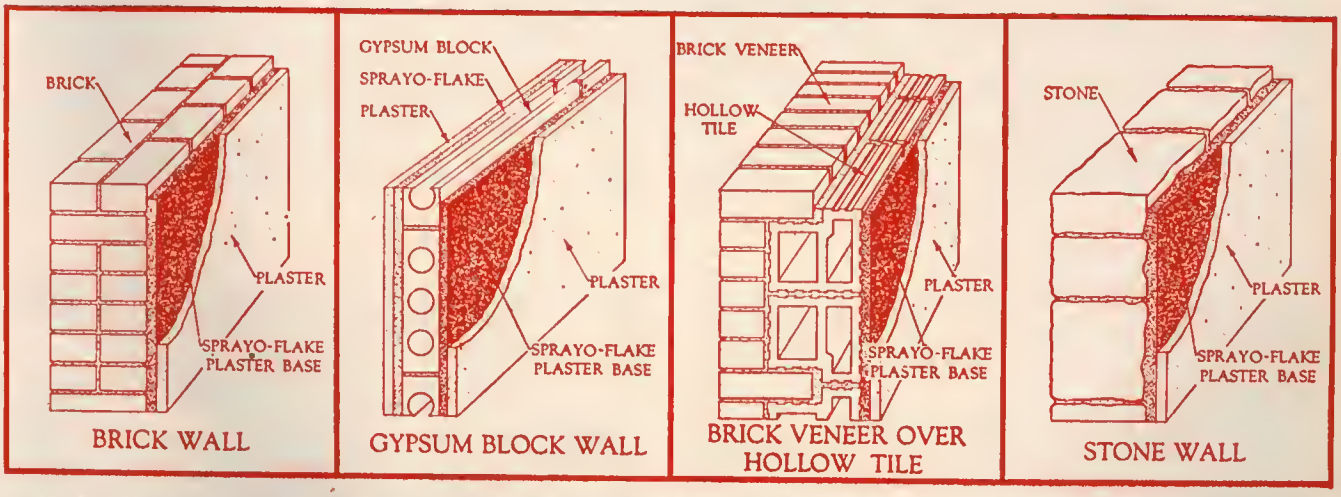
Sprayo-Flake Type "PB" Plasterbase is applied with the same process and ingredients as Sprayo-Flake Insulation Type "DF-C" but the proportions are distinctly varied. The result is a product rich in dampproofing qualities but still resilient enough to absorb ordinary building strains, practically eliminating the danger of unsightly plaster cracks. The facts contained herein have been arrived at through exhaustive tests conducted over a period of many years in our own plant as well as in the field.

When used on either interior or exterior walls it should be noted that the base obtained for plaster is unique in that a combination suction and mechanical bond is obtained. The plasterbase has a rough, hard surface to which plaster may readily key mechanically, yet is porous enough to offer an excellent suction bond. Tests conducted at the Detroit Builders and Trades School on this particular point indicate a bonding strength in excess of 300 lbs. per sq. ft.

Sprayo-Flake Type "PB" Plasterbase may be applied to interior partitions as well as exterior walls, thereby furnishing a break in density invaluable in reducing the passage of sound. The introduction of a resilient material reduces vibration to a point where it is not discernible above the ordinary occupational noises.

It is an excellent sound deadener for partition walls in hotels, hospitals, institutions, apartments, clinics, public and commercial buildings, etc.

View showing the application of Type "PB" Plasterbase being applied with the Sprayo-Flake Insulation Gun to the interior surface of cinder block masonry wall.



Cross sections of Brick, Gypsum Block, Brick Veneer over Hollow Tile and Stone walls shown above showing the use of Sprayo-Flake Type "PB" Plasterbase in each type of wall construction. Note how the Sprayo-Flake Type "PB" Plasterbase mat provides a resilient insulation mat between the outer wall structure and the inner plaster. This resilient insulation mat takes up any ordinary difference in shrinkage or settlement between the outer wall structure and the inner plastered membrane thus practically eliminating cracks in the plastered surface.

Specification

First, thoroughly clean the masonry surface by compressed air removing all dirt, loose mortar particles, etc.

Second, prime the masonry surface with a Sprayo-Flake Insulation Gun applied priming coat consisting of No. 9720 Sprayo-Flake Emulsified Asphaltic Adhesive Mixture. In the case of extremely porous masonry this operation shall be repeated after complete penetration of the first coat is achieved.

Third, apply the Sprayo-Flake Insulating Plasterbase to the primed, dampproofed masonry surface of ½" (or ¾") thick. In the case of rough masonry, irregularities shall not exceed 1" in depth and all such depressions must be filled level with the Sprayo-Flake Type "PB" Plasterbase following the priming before the standard application is made.

Fourth, after application, the Sprayo-Flake Type "PB" Plasterbase surface shall be troweled semi-smooth and the entire surface given an overspray of No. 9720 Sprayo-Flake Emulsified Asphaltic Binder of the same consistency as the priming coat.

NOTE—Cement Plaster should not be applied on Type "PB."

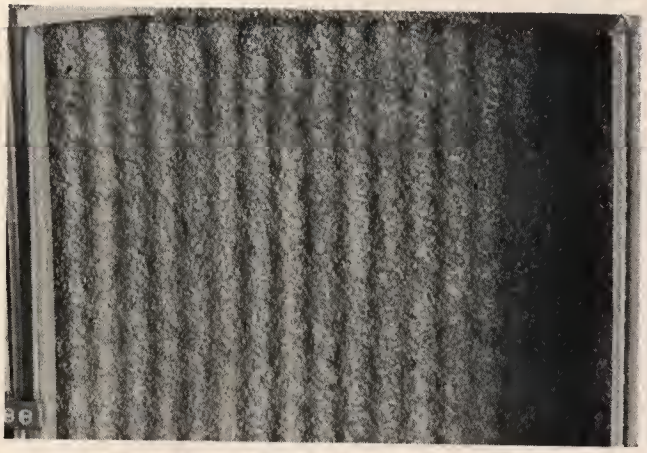
Sprayo-Flake Insulation

THE PERFECT INSULATION FOR ALL TYPES OF BUILDINGS

Large Steel Constructed Building
Insulated with Sprayo-Flake Insulation.

Section of Typical Quonset Building
Insulated with Sprayo-Flake Insulation.

Section of Corrugated Side Wall
Insulated with Sprayo-Flake Insulation.



Close-up View of 1" Thickness of Type "DF-C"
with No. 9715 Alum. on Corrugated Metal.

Section of Corrugated Roof
Insulated with Sprayo-Flake Insulation.

Multiple Type Quonset Building
Insulated with Sprayo-Flake Insulation.

SPRAYO-FLAKE COMPANY
2721 IRVING PARK ROAD CHICAGO 18, ILLINOIS
Telephone: INdependence 3-3300

TECHNICAL INFORMATION

INSULATING PRODUCTS

United States Gypsum

For Building • For Industry

Gypsum • Lime • Steel • Insulation • Roofing • Paint

GENERAL OFFICES—300 WEST ADAMS STREET, CHICAGO 6, ILLINOIS

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DENVER, COLO.
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SYRACUSE, N. Y.
WASHINGTON, D. C.

UNITED STATES GYPSUM

WEATHERWOOD* DECORATIVE INSULATION

DESCRIPTION

WEATHERWOOD Decorative Insulation is rigid wood fiber insulating board made into predecorated interior wall and ceiling units. The products are fabricated from homogeneous mats manufactured of wood fiber produced from new timber.

There are two basic types of WEATHERWOOD Decorative Insulation:

1. WEATHERWOOD Insulating Tile—Square and rectangular units generally used for ceiling paneling.

2. WEATHERWOOD Insulating Plank—Long, narrow, ceiling height units simulating vertical random wall planking.

For sizes, edges, etc., see data on page 4.

Colors: Both types are available in:
"Hilite," a light ivory solid color.
"BLENDTEX"* insulation board, a blend of four gray-tan shades.

FUNCTION AND UTILITY

DECORATIVE—Many designs and patterns are possible with combinations of random width plank and various sizes of tile—using either Hilite or BLENDTEX or both.

INSULATING—The ½" thickness, with a thermal conductance of 0.66, is equal to approximately 38" of stone concrete in resistance to heat transfer. See data on page 4.

LIGHT REFLECTIVE—Hilite color has a light reflection of 60 to 70 per cent. Light reflection of BLENDTEX is high, but variable, due to blending of four colors.

TONGUED AND GROOVED—Edges are designed to minimize discoloration caused by "breathing," expansion and contraction. The interlocking tongue and groove joints provide better alignment of units for true and level ceilings—minimize "out of level" tile that cast shadows.

ECONOMICAL—Material and labor costs approximate 13 to 18 cents per square foot, depending upon design, job conditions and the experience of the applicator. Paneltile is higher in material cost than ½" thickness tile, although in many instances its use is lower in total cost due to savings in labor cost and framing preparation.

EASY APPLICATION—WEATHERWOOD Tile and Plank may be nailed to conventional wood supports or may be applied to solid surfaces with adhesives. Practically any type of interior wall or ceiling may be finished with these materials.

THREE-QUARTER INCH PANELTILE is available with cross scoring so that each unit represents two tile. Its greater rigidity, and positive interlocking tongue and groove feature permits application of these units so that ends of tile occur at random—not necessarily over supports.

EASILY MAINTAINED—Ordinary surface dust may be removed by using wallpaper cleaner. Redecorating may be done with good lead and oil or water-thinned emulsion paints; TEXOLITE* is recommended.

LIMITATIONS OF USE

1. Supports must be spaced not to exceed 16".

2. Where adhesive method of application is used, the adhesive must be prepared and used in strict accordance with manufacturer's directions.

Appearance of WEATHERWOOD BLENDTEX Insulating Tile

"WEATHERWOOD", "BLENDTEX", "RED TOP", "SHEETROCK", "ROCKLATH" and "TEXOLITE", mentianed in this publicatian are registered trademarks awned by United States Gypsum Campany and are used by it ta distinguish its praducts.

"WEATHERWOOD" identifies the particular fiber insulatian baard; "BLENDTEX" identifies the particuiar fiber insulatian baard in variegated shades; "SHEETROCK" identifies the particuiar gypsum wailbaard; "ROCKLATH" identifies the particuiar gypsum piaster base; "TEXOLITE" identifies the particular casein fiat paint manufactured aniy by United States Gypsum Campany; "RED TOP" identifies the particuiar mineral wool soid oniy by United States Gypsum Campany.

Appearance of WEATHERWOOD BLENDTEX Plank

**Trademarks Reg. U.S. Pat. Off.*

WEATHERWOOD DECORATIVE INSULATION

SPECIFICATIONS

SCOPE: Unless otherwise shown on plans, all decorative insulation shall be furnished and installed according to these specifications. (*Note to Architect: If different colors and sizes are required for various areas, list and locate all wall and ceiling areas to be covered.*)

WEATHERWOOD INSULATING TILE

MATERIALS

Insulating tile shall be (*specify size*) ½" WEATHERWOOD Insulating Tile (Hilite) (BLENDTEX), manufactured by United States Gypsum Company.

Nails shall be 17 gauge 1¼" cadmium plated, 3/32" flathead, or approved equal.

APPLICATION

One-half inch WEATHERWOOD Insulating Tile shall be nailed to joists or furring strips. Tile shall be laid in the patterns designated on the drawings. (*Note: See OPTIONAL INCLUSIONS for Application by Adhesive.*).

Tongue and groove tile shall be fitted together snugly but not forced. Nails shall be applied in the tongue at an angle of 45°, using (3) (4) (5) nails per (12" x 12") (12" x 24" or 16" x 16") (16" x 32") tile. All edges and grooves shall be in straight alignment.

OPTIONAL INCLUSION
APPLICATION OF TILE WITH ADHESIVES

(*Note: For use only over plasterboard or plaster surfaces.*)

PREPARATION OF SURFACES

Surfaces shall be prepared for the application of Insulating Tile by removing grease, dirt or any loose or chalky substance that may prevent proper bond.

MATERIALS

(*Note to Architect: Under this heading in the specification, delete the paragraph on nails and substitute the following.*) Adhesive (describe) shall be an approved adhesive manufactured expressly for the purpose. The adhesive shall not be water soluble, contain ingredients that react chemically with paint, or contain a solvent that has a stronger solvent action on paint than naphtha. It shall not contain alcohol.

APPLICATION

Adhesive shall be used over a dry surface only. It shall be used according to the directions of the adhesive manufacturer. Adhesive shall be applied to the back of the tile, working a small quantity of adhesive in spots about 2½" in diameter placed 1½" to 2" from edges and spaced 8" to 10" in each direction. Additional adhesive shall then be applied to these primed spots to a thickness of 3/8" to ½". No adhesive shall be applied to the wall or ceiling surface.

Tile then shall be placed against the surface about 1½" from its final position and slid into place. Pressure shall be exerted on the entire surface of the tile as it slides into place sufficient to provide suction to hold it in place until the adhesive sets. If necessary to bring a unit to proper level, remove and apply additional adhesive. Once the units are in place they shall not be pulled away from the base to level the surface.

**Trademarks Reg. U.S. Pat. Off.*

WEATHERWOOD INSULATING PANELTILE

MATERIALS

Insulating Tile shall be (*specify size*) ¾" WEATHERWOOD Insulating Paneltile (Hilite) (BLENDTEX), manufactured by United States Gypsum Company. Nails shall be 17 gauge, 1½" cadmium plated, with 3/32" flathead, or approved equal.

APPLICATION

Tile shall be nailed to joists or furring strips, in the patterns designated on the drawings. (*Note: See OPTIONAL INCLUSIONS for Application by Adhesive.*) All tile units shall be applied with the long dimension across supports and with end joints staggered. Tile shall be fitted together snugly but not forced. Nails shall be applied in the tongue at an angle of 45°, using (5) nails per (12" x 24") (16" x 32") unit of tile. All lines and grooves shall be kept straight and true.

(*Note: Number of nails shown is for application where joints occur on supports spaced 12" or 16" O. C. For bridged application where joints fall between supports i.e.—12" x 24" size applied on framing spaced 12" O.C. Use 4 and 6 nails per unit respectively.*)

WEATHERWOOD INSULATING PLANK

MATERIALS

Insulating plank shall be ½" WEATHERWOOD Insulating Plank, manufactured by United States Gypsum Company. Nails shall be 17 gauge, 1¼" cadmium plated, with 3/32" flathead or approved equal.

APPLICATION

(*Note to Architect: For vertical design of plank, the carpentry specifications shall include the placing of furring strips 10" on centers on the lower five feet of wall and 16" on centers on the upper portion of wall. For horizontal design, plank may be nailed direct to framing, not over 16" on centers.*)

WEATHERWOOD Insulating Plank shall be applied at right angles to framing members or furring strips. All end joints shall abut over supports. Units shall be selected at random and fitted together snugly but not forced. Nails shall be applied in the tongue edge at each framing member or furring strip.

OTHER USG INSULATION PRODUCTS

WEATHERWOOD Asphalt Coated Sheathing, WEATHERWOOD Insulating Plaster Base and WEATHERWOOD Building Board—See Structural Insulation, page 5.

RED TOP* Insulating Wool—See page 7.

Acoustical Tile—See A.I.A. File 39-B, Sweet's Section 11a.

Insulating SHEETROCK* Gypsum Wallboard—See A.I.A. File 23-L, Sweet's Section 12b.

Insulating ROCKLATH* Plaster Base—See A.I.A. File 20-B-2, Sweet's Section 12b.

WEATHERWOOD DECORATIVE INSULATION

TECHNICAL DATA

	Sizes	Weight per M Sq. Ft.	Decorative Effects	Edges
½" WEATHERWOOD Insulating Tile	12"x12", 12"x24", 16"x16", 16"x32"	735 Lbs.	Hilite or BLENDTEX	All Products Supplied With Fitted Edges Tongued & Grooved
½" WEATHERWOOD Insulating Plank	8", 10", 12", 16" Width 6', 8', 10', 12' Length	735 Lbs.	Hilite or BLENDTEX	
¾" WEATHERWOOD Paneltile	12"x24", 16"x32", plain or cross scored to simulate 12"x12", or 16"x16", respectively	1250 Lbs.	Hilite or BLENDTEX	

All products comply with Federal Specifications LLL-F-321b.

CONDUCTIVITIES (k) AND CONDUCTANCES (C) FOR USE IN CALCULATING HEAT TRANSMISSION COEFFICIENTS

MATERIAL	DESCRIPTION	Conductivity* or Conductance (k)	Conductivity* or Conductance (C)	Resistance* Per Inch Thickness 1/k	Resistance* For Thickness Listed 1/C
½" WEATHERWOOD	Tile, Plank, Building Board, Plaster Base	0.33	0.66	3.03	1.51
25/32" WEATHERWOOD	Asphalt-Coated Sheathing	0.33	0.42	3.03	2.37
¾" WEATHERWOOD	Paneltile	0.33	0.42	3.03	2.27
AIR SPACES (Bounded by ordinary materials)	Vertical ¾" or more in width		1.10		0.91
EXTERIOR FINISHES (Frame Walls)					
Brick Veneer	4" thick (nominal)		2.27		0.44
Wood Shingles			1.28		0.78
Yellow Pine Lap Siding			1.28		0.78
INTERIOR FINISHES					
Gypsum Plaster		3.30		0.30	
Gypsum Board—½"	Plain or Decorated		2.82		0.35
Gypsum Lath & Plaster	Plaster Thickness ½"		2.40		0.42
Insulating Board		0.33		3.03	
Plaster Base, ½" Thick	Plaster Thickness—½"		0.60		1.67
Metal Lath and Plaster	Plaster Thickness—¾"		4.40		0.23
Wood Lath and Plaster			2.50		0.40
MASONRY MATERIALS					
Brick	Common		1.25		0.80
Brick	Face		2.30		0.43
3" Clay Tile (Hollow)	1 Air Cell Direction Heat Flow		1.28		0.78
4" Clay Tile (Hollow)	1 Air Cell Direction Heat Flow		1.00		1.00
6" Clay Tile (Hollow)	2 Air Cell Direction Heat Flow		0.64		1.57
8" Clay Tile (Hollow)	2 Air Cell Direction Heat Flow		0.60		1.67
10" Clay Tile (Hollow)	2 Air Cell Direction Heat Flow		0.58		1.72
12" Clay Tile (Hollow)	3 Air Cell Direction Heat Flow		0.40		2.50
Concrete	Light Weight Aggregate	2.50		0.40	
Concrete	Sand and Gravel Aggregate	12.00		0.08	
3" Concrete Blocks	Hollow—Cinder Aggregate		1.28		0.78
4" Concrete Blocks	Hollow—Cinder Aggregate		1.00		1.00
8" Concrete Blocks	Hollow—Gravel Aggregate		1.00		1.00
12" Concrete Blocks	Hollow—Gravel Aggregate		0.80		1.25
8" Concrete Blocks	Hollow—Cinder Aggregate		0.60		1.66
12" Concrete Blocks	Hollow—Cinder Aggregate		0.53		1.88
3" Gypsum Tile	Hollow		0.61		1.64
4" Gypsum Tile	Hollow		0.46		2.18
ROOFING MATERIALS					
Asphalt Shingles			6.50		0.15
Built-up Roofing	Assumed Thickness—⅜"		3.53		0.28
Heavy Roll Roofing			6.50		0.15
Wood Shingles			1.28		0.78
SHEATHING					
Gypsum—½"			2.82		0.35
Insulating Board—25/32"			0.42		2.37
Fir & Yellow Pine 11")	Actual Thickness—25/32"		1.02		0.98
SURFACES					
Still Air	Ordinary Non-Reflective Materials		1.65		0.61
15 MPH Wind Velocity	Ordinary Non-Reflective (Vertical) Mat'ls		6.00		0.17
WOODS					
Maple or Oak		1.15		0.87	
Yellow Pine or Fir		0.80		1.25	
Fir Sheathing—Building Paper and Yellow Pine Lap Siding			0.50		2.00

*Expressed in BTU per sq. ft. per hr. per deg. F. temperature difference. Conductivities (k) are per inch thickness and conductances (C) are for thickness or construction stated, not per inch of thickness.

WEATHERWOOD* STRUCTURAL INSULATION

DESCRIPTION

WEATHERWOOD* Structural Insulation is a rigid wood fiber insulating board made into sheathing, plaster base and building boards. The products are fabricated from homogeneous mats manufactured of wood fiber produced from new timber.

FUNCTION AND UTILITY

STRUCTURAL STRENGTH. Tensile strength and bracing strength are greatly in excess of the strength required for the designed purpose.

INSULATING VALUE. The "k" value of WEATHERWOOD Insulation is 0.33 and its resistivity compares with approximately 38" of stone concrete. See the Heat Transmission Coefficient Table on opposite page.

LIGHT WEIGHT. The 25/32" thickness weighs approximately 1250 pounds per M square feet. The ½" thickness weighs approximately 735 pounds per M square feet. WEATHERWOOD sheathing is easily handled by one man.

TENSILE STRENGTH. WEATHERWOOD Structural Insulating products conform in tensile strength, transverse strength, and modulus of rupture with Federal Specification LLL-F-321b. This specification requires a minimum tensile strength of 150 pounds per square inch for building board, sheathing and lath.

WEATHERWOOD ASPHALT-COATED SHEATHING

An insulating exterior wall sheathing surface coated on all sides, edges and ends with asphalt. The 2' x 8' size is 25/32" thick with long edges tongued and grooved. Other sizes, 4' wide by 8', 9', 10' or 12' long, have square edges and are either 25/32" thick or ½" thick.

STRENGTH. A wall sheathed with 25/32" WEATHERWOOD asphalt-coated sheathing possesses greater bracing and stiffening strength than a wall sheathed horizontally with conventional narrow sheathing units. Tests conducted at the Forest Products Laboratory, Madison, Wisconsin, indicate that a wall sheathed with 25/32" structural insulating board sheathing, has a rigidity factor of 3.0 compared to a factor of 1.0 for horizontal wood sheathing.

WIND-TIGHT. WEATHERWOOD Sheathing, 25/32" x 2' x 8', is provided with a fitted tongue and groove joint on longitudinal edges and ends are joined over supports, thus making wind-tight joints. The use of building paper is unnecessary and not recommended.

VAPOR PERMEABILITY. The asphalt coating on WEATHERWOOD sheathing is water repellent but vapor permeable.

COSTS

The material cost is low and waste from these large units is negligible. Approximately 1200 square feet is erected per man per day.

WEATHERWOOD PLASTER BASE

An interior insulating lath for plaster in sheets 18" x 48" and ½" thick. Long edges have "V" joints. Ends are square. All face edges beveled.

PLASTER BOND. Gypsum plaster adheres to WEATHERWOOD lath with a factor of safety of 55.

SOUND INSULATION. Tests made by a nationally known and recognized bureau of standards indicate that a standard wood stud partition with fiber board insulating lath and ½" of plaster both sides, has a sound transmission loss of 40.9 decibels. This is approximately equal to a 4" hollow clay tile partition, plaster both sides.

WEATHERWOOD BUILDING BOARD

WEATHERWOOD BUILDING BOARD. All-purpose insulating board made in two thicknesses: ½" and 1". Sheet sizes are 4' wide by 6', 7', 8', 9', 10' and 12' long.

PREDECORATION. WEATHERWOOD building board is furnished with a 60 to 70 per cent light reflective ivory colored surface coating which makes further decoration unnecessary.

LIMITATIONS OF USE

1. Supports should not exceed a centering of 16".
2. WEATHERWOOD plaster base is designed to receive gypsum plaster and should not be used as a base for other plaster.
3. Where exterior wood siding is applied over WEATHERWOOD sheathing, such siding must be nailed through the sheathing and into the framing members.
4. Resin emulsion and casein paints, such as TEXOLITE*, may be applied to WEATHERWOOD Building Board without sizing. For lead and oil coatings, the surface should be sized to conserve paint.

**Trademarks Reg. U. S. Pat. Off.*

WEATHERWOOD STRUCTURAL INSULATION

SPECIFICATIONS

WEATHERWOOD ASPHALT-COATED SHEATHING

SCOPE

Unless otherwise shown on plans, all exterior walls shall be sheathed according to these specifications.

MATERIALS

Sheathing shall be WEATHERWOOD Asphalt-Coated Sheathing, manufactured by United States Gypsum Company.

Nails shall be galvanized, 7/16" head diameter, 2" long roofing nails.

APPLICATION

Apply WEATHERWOOD 25/32"—2' x 8' Asphalt-Coated Sheathing with the long dimension across the supports and with the groove edge down, interlocking the tongue and groove edges. Ends of sheets shall abut over centers of supports, and all end joints shall be staggered.

Apply 25/32" or 1/2" by 4 ft. wide sheathing with long dimension parallel with the supports. Sides and ends shall abut the vertical framing members, top and bottom plates or headers. Fit snugly around all window and door openings.

Secure sheathing to studs with nails spaced approximately 3" on outside framing members (6" apart on intermediate framing) except where exterior finish is secured to the frame with nails driven through the sheathing and into the studs, in which case nails shall be spaced approximately 8" on centers.

Nail to intermediate studs first. Nails shall be not less than 3/8" from edges or ends of sheathing.

OPTIONAL INCLUSION

1. *Use of wood siding over WEATHERWOOD Asphalt-Coated Sheathing.* Apply siding directly over sheathing, securing it with nails driven through sheathing and into studs. Nails shall have a minimum penetration of 1 1/2" into the studs. End joints of siding shall be over centers of studs.

2. *Use of masonry veneer over WEATHERWOOD Asphalt-Coated Sheathing.* Masonry ties shall be attached with nails driven through the sheathing into the studs, approximately 12" on centers, vertically, using nails of sufficient length to penetrate 1 1/4" into the studs. (At least 6d common nails.)

3. *Use of wood, asbestos cement or slate shingles over WEATHERWOOD Asphalt-Coated Sheathing.* (1) Apply 1"x2" wood furring strips horizontally over the sheathing spaced to correspond to the shingle exposure. Secure strips with nails driven through sheathing, using nails of sufficient length to provide at least 1 1/4" penetration into studs (at least 8d common). Use at least one nail at each intersection of stud and furring.

Note to Architect: Use of stucco over WEATHERWOOD Ashpalt-Coated Sheathing. Stucco may be applied over sheathing either by the use of furring strips and expanded metal lath or by the use of self-furring 3.4 lb. USG Diamond Mesh Lath attached with nails through sheathing and into studs. Use large-headed nails of sufficient length to provide at least 1 1/4" penetration into studs. See A.I.A. File 20-B-1.

WEATHERWOOD PLASTER BASE

SCOPE

Where shown on plans, walls, partitions and ceilings shall be lathed with insulating board lath.

MATERIALS

Insulating board lath shall be WEATHERWOOD Plaster Base 1/2" thick by 18" x 48", manufactured by United States Gypsum Company.

Accessories, including Cornerite and Cornerbead, shall be manufactured by United States Gypsum Company. Nails shall be 1 1/8" 13 gauge blued 5/16" flathead, lath nails.

APPLICATION

WEATHERWOOD Plaster Base shall be applied with the long dimension at right angles to the framing members, butted with staggered vertical joints. Also, joints between walls and ceilings shall be staggered so that vertical joints on walls will not meet ceiling joints. Space nails approximately 4" apart, using 5 nails per lath per support. Ends shall join on supports. Cut accurately and fit lath neatly around all electric outlet boxes, etc. All re-entrant angles shall be reinforced with Cornerite. Cornerite shall be nailed to the framing through the lath. Cornerbead shall be applied to all exterior angles nailed through to framing.

WEATHERWOOD BUILDING BOARD

SCOPE

Where shown on plans, interior walls and ceilings shall be finished with insulating board.

MATERIALS

Insulating board shall be (1/2") (1") WEATHERWOOD Building Board, manufactured by United States Gypsum Company.

For half-inch board, nails shall be 4d 1 1/2" common nails where covered by moulding or batten strips. Where exposed, nails shall be 17 gauge, 1 1/4", 3/32" head, cadmium plated. For one-inch board, nails shall be 1/2" longer.

ERECTION

Framing shall be in accordance with plans and carpentry specifications. Headers shall be provided for solid support for fixture attachment wherever necessary. WEATHERWOOD Building Board panels in lengths as long as possible shall be applied to ceilings first and then to walls. All panels shall be applied with the long edges parallel to the framing members. All edges shall be supported on framing members.

WEATHERWOOD Building Board shall be securely nailed to all supports. Nails shall be spaced not more than 3" apart, on outside framing members, (6" apart on intermediate framing) and placed not more than 3/8" from edges and ends of board. Nails shall be driven "home," with heads slightly below the surface.

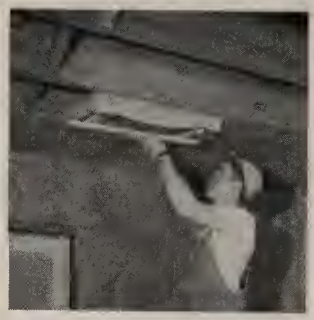
RED TOP* INSULATING WOOL

DESCRIPTION

RED TOP Insulating Wool consists of mineral fibers mechanically formed either into a uniform mat of definite dimensions and controlled density or into a uniform pellet form suitable for pouring or blowing into framing spaces.

Batts—Are carefully formed mineral wool batts including a vapor barrier and nailing flanges. See table below for sizes.

Granulated—Consists of mineral fibers formed into nodules for either pouring and spreading by hand or for installation with an insulation blowing machine.



FUNCTION AND UTILITY

HIGH THERMAL RESISTANCE—Conductance is 0.27 per inch thickness and resistance 3.70 per inch thickness. See data sheet below for resistance for given thicknesses.

INCOMBUSTIBLE—The mineral fibers will not burn or support combustion.

RESISTANCE TO VAPOR TRANSMISSION—The asphalted paper resists the passage of water vapor and protects against condensation. It transmits less than 2.50 grains per sq. ft. per hour per lb. per sq. inch of pressure difference, which is within the limits of permeability recommended by many recognized authorities for normal building occupancy.

UNIFORM EFFECTIVENESS—Manufactured to closely controlled tolerance for density and dimension, for uniform insulation.

STABILITY—Highly resilient. Resists settling. The mineral fibers are resistant to decay, corrosion, moisture and all other forms of deterioration.

RESISTANT TO VERMIN—The mineral fibers offer no sustenance to vermin or rodent life.

LIGHT WEIGHT—see table below.

LIMITATIONS OF USE

1. *Masonry Walls*—It is recommended that at least a 1" air space be provided between insulation and exterior masonry. Suitable weep holes are recommended. If RED TOP Wool is placed in direct contact with exterior masonry walls, the masonry *must be watertight* to prevent the insulation from becoming wet. The insulation is less effective and transmits moisture to interior finishes if it becomes wet by direct contact with leaking exterior masonry.

2. *Attic Spaces*—Ventilation should be provided in attic or crawl spaces to guard against condensation and increase the effectiveness of summer insulation. A minimum of ¼ square inch opening per sq. ft. of top floor ceiling area is recommended, to be divided between gable ends.

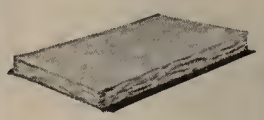
3. *Metal Lath and Channel Ceilings*—Suspended ceilings may be insulated with batts installed with the vapor barrier down and all joints butted tightly together.

If preferred, granulated wool may be used for suspended ceilings and installed by a wool blowing machine. Many other types of otherwise inaccessible installations may be best served with granulated wool blown in place using a wool blowing machine.

However, a suitable vapor barrier should be provided, equal in effectiveness to the one provided with RED TOP Batts. Many standard asphalt coated and impregnated papers; aluminum foil, good oil paints and varnishes, will meet this requirement. Roofing felt is not recommended.

4. *Floors over Unexcavated Areas*—Insulating batts used between floor joists over unexcavated areas should be provided with additional support to insure a permanently effective installation. In all cases, the unexcavated area should be ventilated in accordance with good practice.

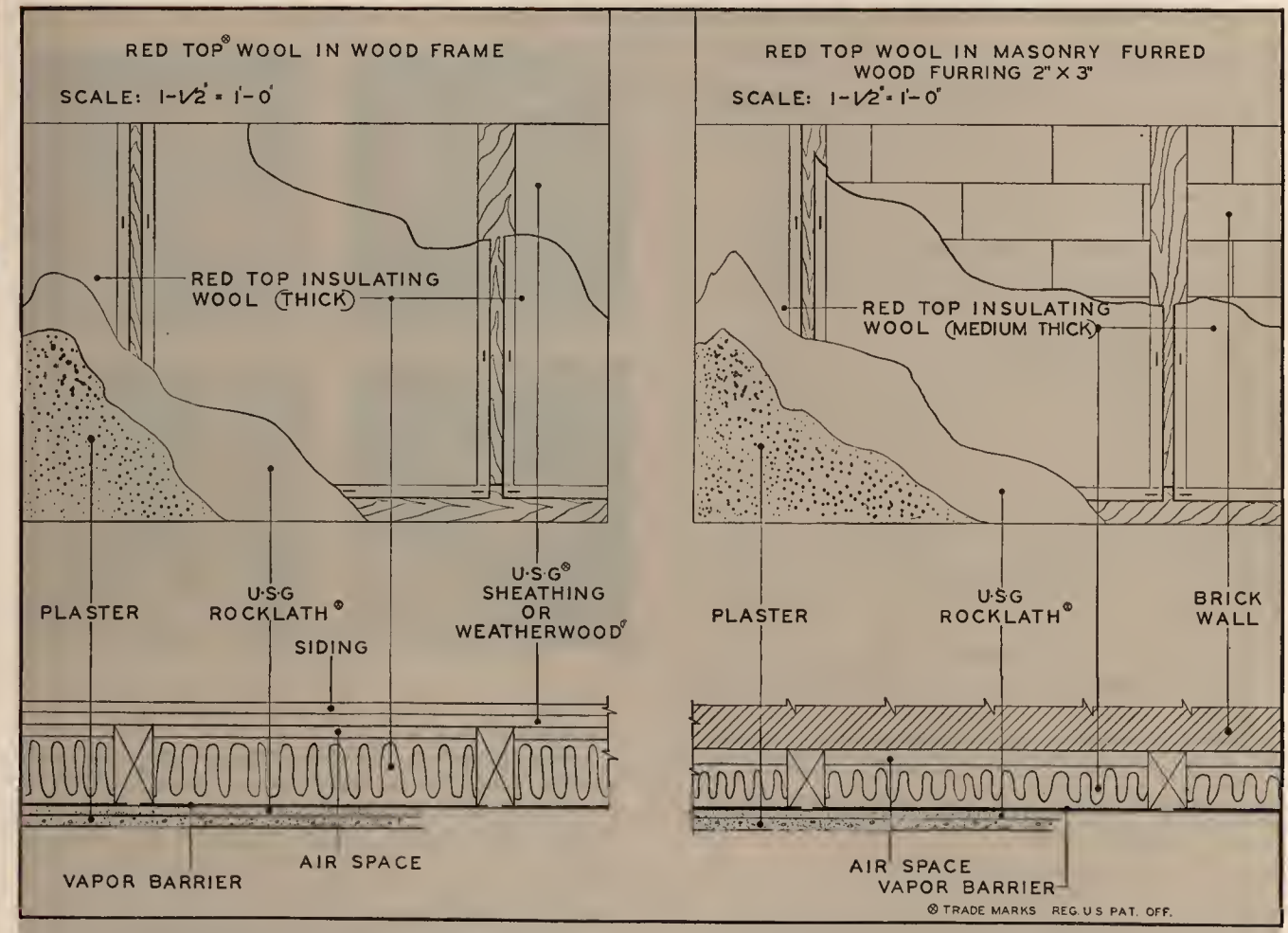
PRODUCT DATA

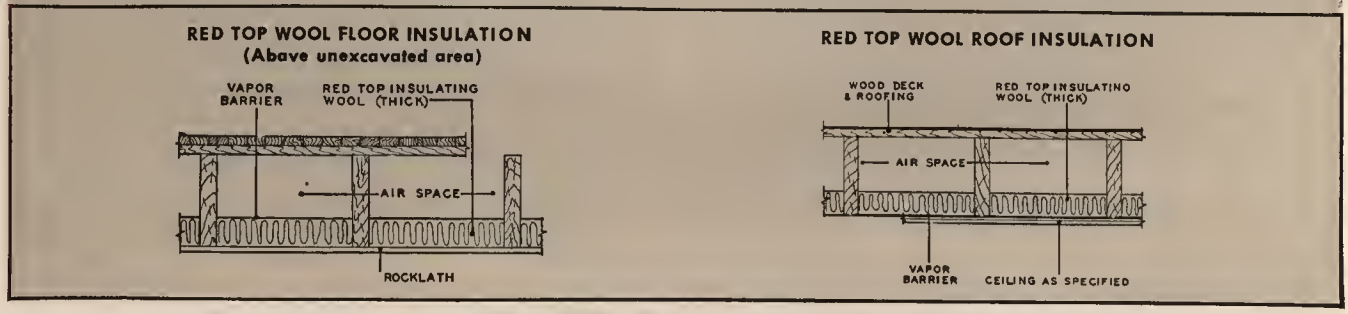
	Type	Approx. Thickness	Framing Spacing	Length	Approx. Weight Sq. Ft.	Conductance (1)		Resistance	
						(k)	(C)	1/k	1/C
	BATT	Medium 2"	16" OC	24" or 48"	.58 lbs.	.27	.135	3.70	7.40
		Thick 3"	16" OC	24" or 48"	.87 lbs.	.27	.090	3.70	11.10
	BATT	Medium 2"	24" OC	24" or 48"	.58 lbs.	.27	.135	3.70	7.40
		Thick 3"	24" OC	24" or 48"	.87 lbs.	.27	.090	3.70	11.10
	GRANULATED	2"	Supplied in Granular Form (Non-Preformed Dimension)		1.00 lbs.	.27	.135	3.70	7.40
		4"			2.00 lbs.	.27	.067	3.70	14.80
		6"			3.00 lbs.	.27	.045	3.70	22.20

(1) Expressed in Btu per sq. ft. per hr. per degree F temperature difference. (k) is per inch thickness, (C) is for thickness stated.

Trademark Reg. U. S. Pat. Off.

RED TOP INSULATING WOOL





INSULATION SPECIFICATIONS

SCOPE

Unless otherwise shown on plans, all insulation shall be furnished and installed according to these specifications.

MATERIAL

Insulation shall be (delete those not applicable to the project)
Thick RED TOP Insulating Wool Batts.
Medium Thick RED TOP Insulating Wool Batts.
RED TOP Insulating Wool Granulated.
All as supplied by the United States Gypsum Company.

APPLICATION

Insulating Wool Batts shall be installed within the stud spaces of all exterior walls and between the framing members of the top floor ceiling or roof. The asphalted vapor barrier shall face the inside of the building and the nailing flanges shall be tacked or stapled securely. Sufficient tacks or staples shall be used to avoid gaps or bulges in the vapor barrier paper. In no case, shall they exceed a spacing of 4" on centers. Apply Insulation in all framing spaces as specified and, where necessary, the insulation and vapor barrier shall be cut to fit in a neat and workmanlike manner.

The contractor shall be responsible for breaks or tears in the vapor barrier. All such breaks or tears shall be repaired by cementing over each break, with asphalt, a piece of vapor barrier paper, cut to extend at least 6" from the break in all directions.

Floor Insulation—For insulation between floor and unexcavated space, the "Application" portion of the specification shall be changed to include this work, and the following paragraph should be added:

"The RED TOP Wool Batts shall be held and supported from the underside of the floor joists by any satisfactory support method such as lining the underside of the floor joists with ROCKLATH plaster base."

Balsam-Wool*

HEAT AND SOUND INSULATION

BLANKET TYPE INSULATION

Nu-Wood*

INTERIOR FINISH

LATH • SHEATHING • ROOF INSULATION

RIGID TYPE INSULATION

WOOD CONVERSION COMPANY

FIRST NATIONAL BANK BLDG. • ST. PAUL 1, MINNESOTA

DISTRICT OFFICES: NEW YORK • CHICAGO • DENVER

BALSAM-WOOL, NU-WOOD AND TUFFLEX ARE REGISTERED TRADE MARKS OF WOOD CONVERSION CO.

Balsam-Wool blanket insulation

DESCRIPTION

Balsam-Wool is a flexible type of insulation. The insulating mat is made from new wood fibers chemically treated to resist fire, rot, termites, vermin, and for fire-retardance. The fibers are permanently processed into a fleecy mat which is manufactured to a controlled uniform density of 2.2 pounds per cubic foot. Ninety-two per cent of its volume is dead air. It is completely enclosed on both sides and edges with heavy, flexible, asphalt saturated and coated kraft liners. Balsam-Wool is the practical equivalent of pure sheep's wool in insulation value. Its high efficiency is permanently assured by its exclusive sealed feature and its foolproof application method.

THERMAL CONDUCTIVITY

Balsam-Wool provides a high degree of resistance to the passage of heat. Impartial laboratory tests show that there is no more efficient house insulation commercially available than Balsam-Wool.

Density	Mean Temperature	Conductivity	Resistivity	Authority
4.8[1]	35	.25	4.00	Rowley
3.62[1]	70	.246	4.06	Peebles

[1] *Including asphalt coated kraft liners.*

VAPOR RESISTANCE

The fibers of Balsam-Wool are water-proofed by a special treatment in the manufacture and individual fibers are made non-absorptive.

In addition, Balsam-Wool is double-sealed with a liner of tough, durable kraft, saturated and coated with asphalt to provide the utmost in moisture protection.

WIND RESISTANCE

The durable kraft liners on Balsam-Wool are wind-proof. When the insulation is securely fastened in place as recommended, air does not pass through or around it.

FIRE RETARDANCE

The Balsam-Wool insulating mat is highly fire-retardant. Since it is securely bonded to the liners supporting both sides, and the blanket is fastened to the framing members, it will remain in place longer and thus retard the progress of fire for a greater period. Recorded cases show that Balsam-Wool has retarded the progress of fire and saved many structures from water damage and complete destruction.

FASTENED IN PLACE

The application of Balsam-Wool is positive and foolproof. Only with difficulty could it be installed in a manner to reduce the efficiency of the mat. It is stapled or nailed at the top and bottom and on both sides. One man can handle the application easily.

A continuation of the liners forms Spacer Flanges on both sides. These are scored to fold over and be stapled or nailed to the face of the framing members. The interior finish, fastened to the stud over this flange, assures a positive seal. Balsam-Wool can be cut to fit narrow openings around doors and windows. It cannot sag, settle or get out of place.

THICKNESSES AND WIDTHS

Thicknesses: Standard, approximately 1 inch thick and Double Thick, approximately 2 inches thick.

Widths: Standard and Double Thick—16, 20, and 24 inches. Standard is also available in 33-inch width.

For additional information, write the Wood Conversion Company in St. Paul for Form No. 804

Fig. 1—Cut section of Balsam-Wool shows special Spacer Flange which fits over and is nailed or stapled to face of stud, joist or rafter . . . assuring a tight fit and proper air spaces. Balsam-Wool Sealed Insulation is made in various widths to fit snugly between standard spaced studs, joists and rafters.

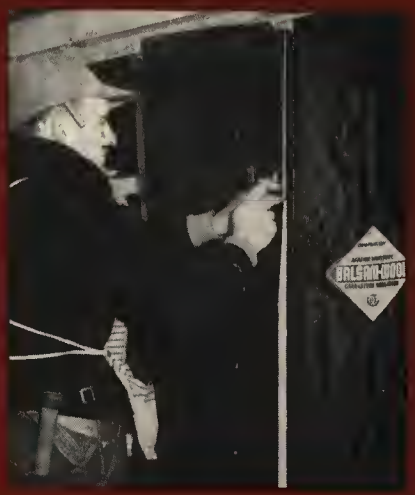


Fig. 2—Balsam-Wool Sealed Insulation is easily applied. Spacer Flange laps the face of the stud leaving a clear space down the center which identifies the stud for lather. Lath is applied to the stud directly over Flange.

Balsam-Wool blanket insulation

APPLICATION DETAILS

Frame Walls—Specification Data

Apply continuous strips of Balsam-Wool parallel with framing members, with the Spacer Flange lapped over the inside edge or face of the members. Tack or staple through flange for temporary fastening until held permanently with plaster base, interior finish, or flooring. If the interior is not to be finished, apply wood strips over the edge of the framing and nail securely through flanges to form a continuous air-tight joint. Ends of Balsam-Wool shall be sealed to sills, plates and headers as follows: Blanket shall be cut about 3 inches longer than space to be insulated and a portion of mat removed from each end. Inside and outside liners are brought together and stapled to framing. Where splicing of Balsam-Wool strips is necessary, ends shall be fastened as turnouts to a 2 x 4 inch header, placed between the framing members.

Masonry Walls—Specification Data

Fur masonry wall vertically with 2 x 2 inch furring strips set accurately 16 inches o.c. and in line with joists or ceiling rafters over head. Shim furring plumb and true and secure substantially to masonry. Apply continuous strips of Balsam-Wool between furring, with side flanges lapped over the face of the furring strips. Staple or tack through flange for temporary fastening, until held permanently with solid plaster base or interior finish. Provide plates or headers at top and bottom for fastening ends of Balsam-Wool. Where narrow spaces occur, cut Balsam-Wool approximately 1½ inches wider than necessary, remove the mat at the cut edge and apply front and back liner as nailing flange.

Upper right: Balsam-Wool application in frame construction. Lower left: Sealed end of Balsam-Wool blanket. Lower right: Masonry construction.

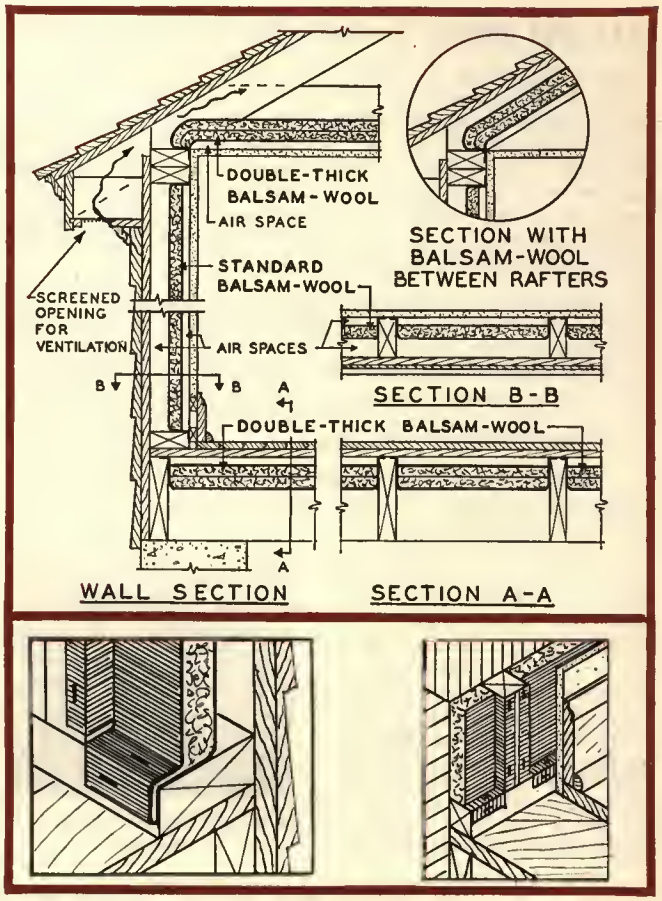


Fig. 3—Stapling blanket to framing members over windows. This method of application completely seals the insulation top and bottom . . . and with the built-in Spacer Flange makes the application easy, fast and positive.

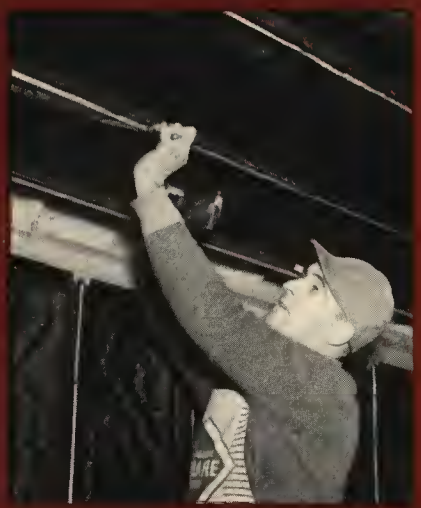


Fig. 4—Stapling Spacer Flange in ceiling application. Balsam-Wool is applied in this manner when floor above has previously been placed. Staple hammer speeds application . . . however, regular hammer and tacks may be used.

Fig. 5 — Applying Balsam-Wool to the top of joists in an attic that is not to be floored . . . Spacer Flange is stapled to joists and then covered with lath to assure a tight joint. When flooring is to be placed lath may be eliminated.

Balsam-Wool *blanket insulation*

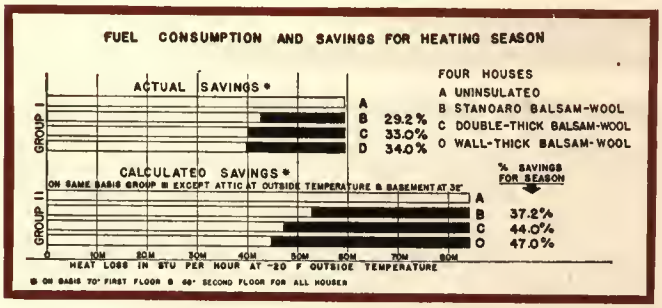
HEAT LOSS STUDIES IN FOUR IDENTICAL HOUSES

Because there are so many avenues by which heat can escape from a dwelling—all of which may vary with each type of house—ordinary methods of *calculating* heat losses are not necessarily exact. Consequently, claims for the efficiency of insulation (based on calculations), though they may be made in good faith, will vary considerably. A few tests, of course, involving one or two houses, have been made in an attempt to substantiate these claims. However, much work needs to be done.

The advantages of a quality insulation—properly applied—need no exaggeration. Consequently, to help establish certain basic factors from which accurate calculations can be made and to further increase scientific knowledge on the subject, the Wood Conversion Company recently conducted one of the most elaborate and concise experiments ever attempted in the field of house insulation.

The tests involved four houses, all identical except as to degree of insulation. House "A" was uninsulated; House "B" was insulated with Standard Balsam-Wool Blanket, approximately 1 inch thick; House "C," Double Thick Balsam-Wool, approximately 2 inches thick; House "D," Wall Thick Balsam-Wool Blanket (manufacture discontinued), approximately 2½ inches thick. Houses were of standard frame construction. They were unoccupied during the test, for only in this manner could the tests be accurately controlled. Equal temperatures were maintained in all houses with the thermostat set at 70 degrees. Readings were taken at 43 thermocouples in each house. As many as 1,000 readings a day were taken during the heating season. Results are shown in the chart above. Group One shows actual savings according to tests. In this group, it is interesting to note that House "C" had about twice the insulation as House "B"; yet this extra thickness resulted in only 3.8% increase in fuel savings. House "D" with slightly more than ½ inch insulation than House "C" shows only 1% greater fuel savings. Group Two shows the fuel savings which could legitimately be promised Balsam-Wool users if common methods of *computation* were applied. We do not use such optimistic figures, although we have every justification for doing so.

One of Four Identical Test Houses



Actual and Calculated Fuel Consumption and Savings for Heating Season

It has always been our aim to deliver comfort and fuel savings in accordance with our knowledge of the ability of an insulation to produce, based upon actual experience, rather than to promise what we might hope it would produce, based on calculation.

For complete study, write for the Wood Conversion Company's ASHVE Heat Loss Studies Report

(Note: Balsam-Wool Wall-Thick no longer manufactured)

The Law of Diminishing Returns . . .

The law of diminishing returns stated briefly means that the first layer of insulation is always the most effective and each successive layer of the same thickness is less and less effective. The chart below shows percentages of Heat Saved and the "U" Value or "Heat Loss" in standard frame canstructian—and when insulated with Standard or Double-Thick Balsam-Wool Insulation. Note that Standard Balsam-Wool saves 52% of the heat normally lost through the wall, and that Double-Thick saves 65%. Double-Thick Balsam-Wool, which is twice the thickness of Standard, increases the savings only from 52% to 65%—or effects an increased saving of only 13%.

Because of the factor of diminishing returns which applies alike to all insulations whether they be rigid, fill or blanket, many authorities believe it is doubtful economy to try to reduce the overall heat transmission coefficient "U" below .10 in dwellings. Usually money spent to reduce the coefficient below this point will not show a sufficient return on the investment. It would be better to spend this money to reduce the Heat Loss through doors and windows by adding storm sash and around openings by adding weather stripping.

Nu-Wood interior finish

GENERAL DESCRIPTION

Nu-Wood is processed wood. Clean, new wood is separated into individual fibers which are formed under pressure to make an insulating board of many uses. This board is used as Nu-Wood Insulating Interior Finish which includes Nu-Wood Kolor-Fast and Sta-Lite Tile, Plank and Board, and Nu-Wood Roof Insulation, Nu-Wood Insulating Lath, Nu-Wood Insulating Sheathing and other Nu-Wood Products.

Nu-Wood Interior Finish is installed over framing, furring, or continuous surfaces in new or old construction to take the place of lath and plaster, or over wall and ceiling surfaces of plaster, masonry, or wood in old construction. It needs no painting or decorating. The soft shades and interesting surface texture give Nu-Wood rooms unusual decorative effects. Yet Nu-Wood does more than decorate, it insulates against heat and cold. It hushes noises—all in one operation.

Nu-Wood Interior Finish, now processed with a special, fade-proof treatment, is furnished in several color selections and in a variety of sizes. Tile and Plank units are provided with a special tongue and groove joint so designed that the surface of each unit is properly aligned with and positively supported by all adjacent units.

Nu-Wood fulfills all the requirements of Federal Specifications LLL-F-321b Insulating Fiber board. In order to meet these specifications the product must have certain qualities with respect to conductivity, transverse strength, deflection, tensile strength, linear expansion, and water absorption.

THERMAL CONDUCTIVITY

The thermal conductivity as determined by Professor J. C. Peebles, Armour Institute of Technology, expressed in B.t.u. per hour per sq. ft. per degree difference in temperature per inch of thickness is .324 at a mean temperature of 72 degrees F.

SOUND ABSORPTION

Tests by the Riverbank Laboratories on Nu-Wood Kolor-Fast and Nu-Wood Sta-Lite have established the following noise reduction coefficients:

Product	Noise Red. Coef. *
Nu-Wood Kolor-Fast	.35
Nu-Wood Sta-Lite	.25

**** The noise reduction coefficient given in the table is the average to the nearest multiple of .05 of the coefficients for 256, 512, 1024, and 2048 cycles.***
In the above tests Nu-Wood was applied to furring strips.

LIGHT REFLECTION

Light Reflection Tests have been made with average results reported as follows:

Color	Reflection Factor
Nu-Wood Sta-Lite	76%
Nu-Wood Kolor-Fast, Tan	35%
Nu-Wood Kolor-Fast, Variegated	34%

For additional information on Nu-Wood Interior Finish, write Wood Conversion Company—ask for Form No. 716

Fig. 6—For the theatre, bowling alley or any public gathering place, Nu-Wood is the perfect interior finish. It offers a great variety of interesting and modern decorative effects, and at the same time insulation and acoustical correction. Nu-Wood is easily and economically applied in new or old construction, and its decorative finish is lasting and permanent. Nu-Wood's Kolor-Fast and Sta-Lite colors are fade-proof and laboratory tested.

Fig. 7—Nu-Wood is ideally suited for any interior, whether it be general offices, sales and display rooms, lobbies, or commercial establishment. The noise level of an interior is greatly reduced where Nu-Wood is applied, and the architectural beauty can be enhanced through the rich colors and interesting effects of Nu-Wood decorative tile, plank and board, with pre-decorated Kolor-Trim.

Nu-Wood interior finish

NU-WOOD BOARD—KOLOR-FAST—STA-LITE

Description: Square edge structural board available in Kolor-Fast Tan and Sta-Lite, all of which colors harmonize with any scheme of decoration and furnishings. The surface has an attractive texture.

Thicknesses and Sizes: Full ½ inch thick. Sizes are 4 feet wide by 7, 8, 9, 10 and 12 feet long.

NU-WOOD TILE—KOLOR-FAST—STA-LITE

Description: Rectangular tile units with attractive textured surfaces are available in Tan, Variegated and Sta-Lite. All four edges are provided with tongue and groove joints. To obtain the proper matching of tongue and groove edges, a few tile patterns require units in both right and left hand bevels. To determine the bevel of a tile, hold long edge vertical with face up and tongue on top edge. A right hand bevel tile has tongue on right. A left hand bevel tile has tongue on left. Square tile may be used as either right or left hand units.

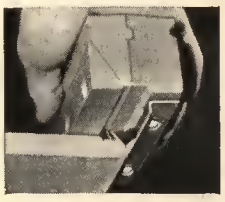
Thicknesses and Sizes: Full ½ inch thick. Sizes 12 x 12, 12 x 24, 16 x 16 and 16 inches x 32 inches.

KOLOR-TRIM MOLDINGS

Description: Kolor-Trim pre-decorated wood moldings are designed to bring out the full beauty and color harmony of Nu-Wood Interior Finish. Made of Ponderosa Pine, these moldings are finished in a semi-gloss enamel in three designs. Pattern No. 1 Cove, No. 2 Chair Rail, No. 4 Bead, in a variety of colors—see Fig. 8.

GROOVING AND BEVELING TOOL

Nu-Wood Board can be cut with an ordinary saw or it can be cut and grooved in interesting designs and molding treatments made on the job by carpenters with the aid of beveling planes made for this purpose. One type generally used is the All-Purpose Bevil Devil (an inexpensive set of three tools). One tool in this set (see illustration) is designed specifically for rabbeting or recessing the edge of Nu-Wood Board to receive Kolor-Trim Bead as a joint treatment.



NU-WOOD CLIP

The Nu-Wood Clip is recommended for invisible application of ½ inch Nu-Wood Kolor-Fast and Sta-Lite Tile and Plank to a nailing base. It is made of heavy electro-galvanized steel and is designed to fit either the tongue or the groove edge of the unit. The Clip is packaged 1,000 to a carton and is available from Nu-Wood dealers. Complete application information is contained in each package.

ADHESIVE

Adhestik, a special adhesive, is recommended for applying Nu-Wood Interior Finish to a solid, clean and true surface. Covering capacity is approximately 80 square feet per gallon. It is available from Nu-Wood dealers in one gallon cans and five gallon drums.

For additional information on Nu-Wood Application, write for Form No. 716; for special Clip information, Form No. 731

Fig. 8—Kolor-Trim Moldings and Bead corner treatments.

Fig. 10—Nu-Wood Clips for concealed nailing of Tile and Plank.

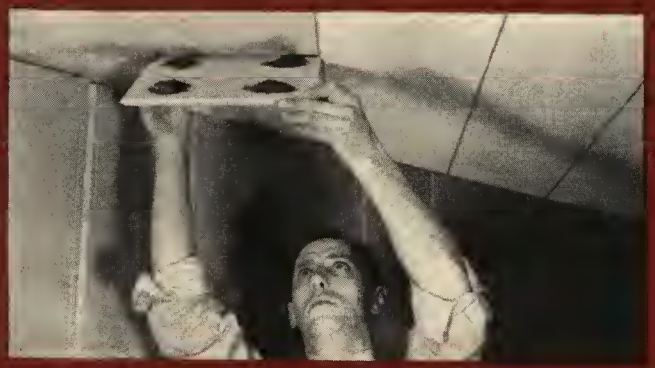


Fig. 9—Nu-Wood may be applied with Adhestik to sound, clean surfaces. Adhestik is applied in dabs on Tile.

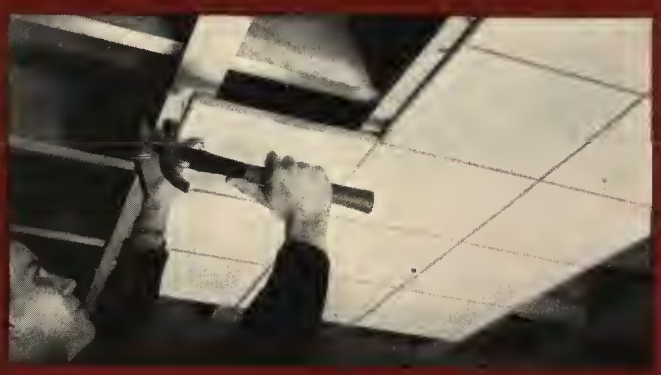


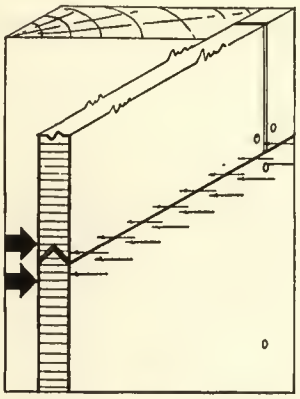
Fig. 11—Nu-Wood may be nailed to any sound, true base which affords sufficient nail holding power.

Nu-Wood structural insulation

NU-WOOD INSULATING LATH

Description: Nu-Wood Lath is made from standard Nu-Wood Board, cut to convenient, easy to handle units 16 inches x 48 inches in size, in ½ inch thickness. Long edges interlock by means of a simple V-type tongue and groove. Ends are square cut. Nu-Wood Lath has a thermal conductivity of .324 B.t.u. per hour per square foot per inch of thickness per degree difference in temperature. Plaster forms a natural bond with Nu-Wood Lath which exceeds 600 pounds per square foot, or several times that of wood lath. Because of the special V groove no bothersome gadgets are necessary.

All types of Nu-Wood fulfill all the requirements of Federal Specifications LLL-F-321b for Insulating Fiber board. In order to meet these specifications, the product must have certain qualities with respect to conductivity, transverse strength, deflection, tensile strength, linear expansion and water absorption.



V-Type Tongue & Groove Resists Trowel Pressure Above and Below Joint Over Length of Lath

NU-WOOD INSULATING SHEATHING

Description: Nu-Wood Sheathing is made from Nu-Wood Board processed to meet requirements of a covering material for outside walls. Surfaces are treated with a special waterproofing agent to seal against moisture and vapor penetration. It makes a stronger, more comfortable home. Workmen find it a time saver and easy to handle on the job.

The thermal conductivity of Nu-Wood, expressed in B.t.u. per hour per square foot per inch of thickness per degree F difference in temperature is .324.

Nu-Wood Sheathing is available in ½ inch thickness, 4 feet wide and 8, 9, and 10 feet long with square edges.

NU-WOOD ROOF INSULATION

Description: Nu-Wood Roof Insulation is furnished in thicknesses of ½ inch, 1 inch, and multiples of ½ inch in any other practical thickness. The size of the units is 23½ x 47 inches. Thickness of 1 inch or more are laminated—the ½ inch layers are bonded together with a continuous coating of asphalt.

Nu-Wood Roof Insulation laminated with a continuous coating of asphalt is available with flush edges.

Nu-Wood Roof Insulation may be applied over wood, concrete, gypsum and steel roof decks. Application specifications vary slightly but in all cases a seal course and water cut-offs are recommended to protect the insulation from moisture.

For additional information on Nu-Wood Lath, write for Form No. 717; for Sheathing, Form No. 718; for Roof Insulation, Form No. 719

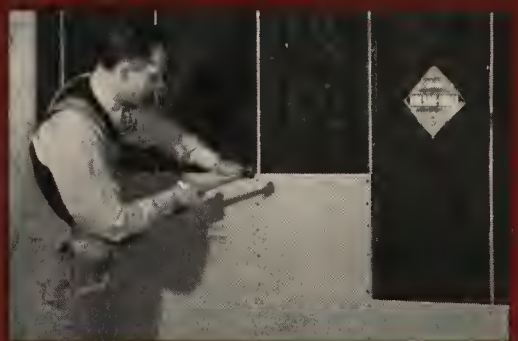
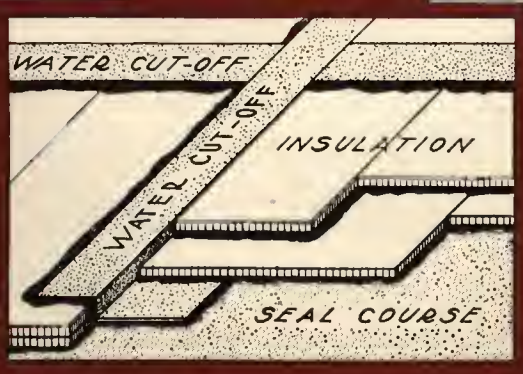


Fig. 12—Nu-Wood Lath is easily applied. The special V-joint (Illustrated above) assures continuous insulation with no openings between joints to allow heat leakage, as well as a more rigid base to resist trowel pressure in application of plaster.

Fig. 13 — Detail shows the Seal Course, Nu-Wood Roof Insulation and water cut-off, recommended in Nu-Wood Roof Insulation Specification.

Fig. 14—Photo illustrates application of 1" Nu-Wood Roof Insulation. Nu-Wood has a thermal conductivity of .324 Btu per hour per square foot per inch of thickness per degree in temperature, and fulfills all requirements of Federal Specifications LLL-F-321b for Insulating Fiber Board.



Tufflex sill sealer

GENERAL DESCRIPTION

Tufflex Sill Sealer is especially designed to effectively insulate the joint between the sill and foundation. Tufflex Sill Sealer is a flexible wood-fiber mat with high thermal efficiency, asphalted to a strong kraft paper liner on both sides. The mat is made with a moisture-resistant binder, processed to resist both mold and vermin. The soft, resilient blanket completely fills in all the irregularities of the top of the wall and seals and caulks the joint, forming a tightly compressed "gasket" against heat loss and wind penetration.

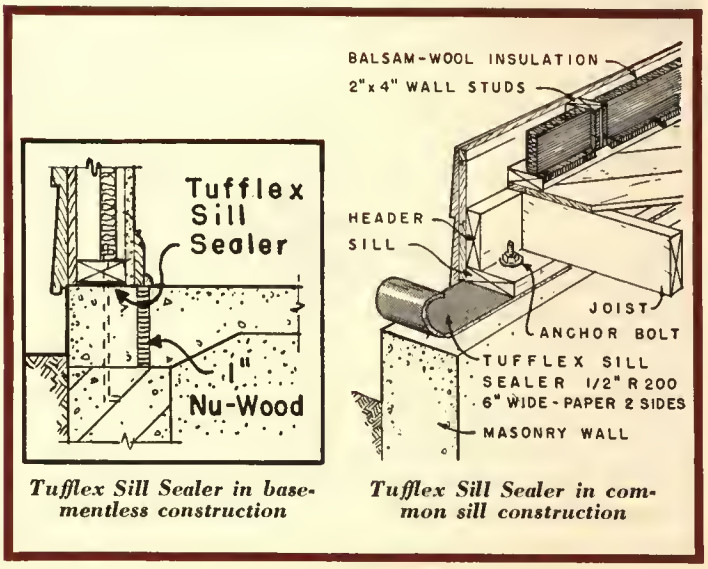
Tufflex is both non-abrasive and non-irritating, is easy to handle on the job. It comes in rolls 6 inches wide, ½ inch thick, 100 lineal feet per roll.

APPLICATION DETAILS

In "common sill construction" the Tufflex Sill Sealer is laid directly on top of the foundation wall with anchor bolts projecting through the blanket. These bolts hold the Tufflex in the proper position and prevent the wind blowing it off the wall during application. Ends of the blanket should be carefully butted together—not lapped. The sill is placed over the Tufflex Sill Sealer and held tight with anchor bolts.

In modern basementless construction, where wall plates are laid directly on floor slabs or foundation walls, Tufflex Sill Sealer is just as effective in providing a tight sealed joint. The plate, however, is usually two by four inches, therefore the six-inch wide blanket may be cut in two, to make strips three inches wide. These are applied over the foundation wall or floor slab, with the anchor bolts extending through the blanket.

Note the suggested use of asphalt-coated Nu-Wood Insulating Board between the concrete slab and the outside wall, to reduce heat loss.



Tufflex Sill Sealer in basementless construction

Tufflex Sill Sealer in common sill construction

Balsam-Wool application data sheets..

Carefully detailed and authoritative information on insulation application, technical information and research data may be found in these data sheets. Ventilation, principals of condensation, calculation of heat transmission coefficients, application and other subjects are discussed. A portfolio of over 30 sheets, in A.I.A. file folder, is available to architects, contractors, and builders. Write for your set today.

BALSAM-WOOL

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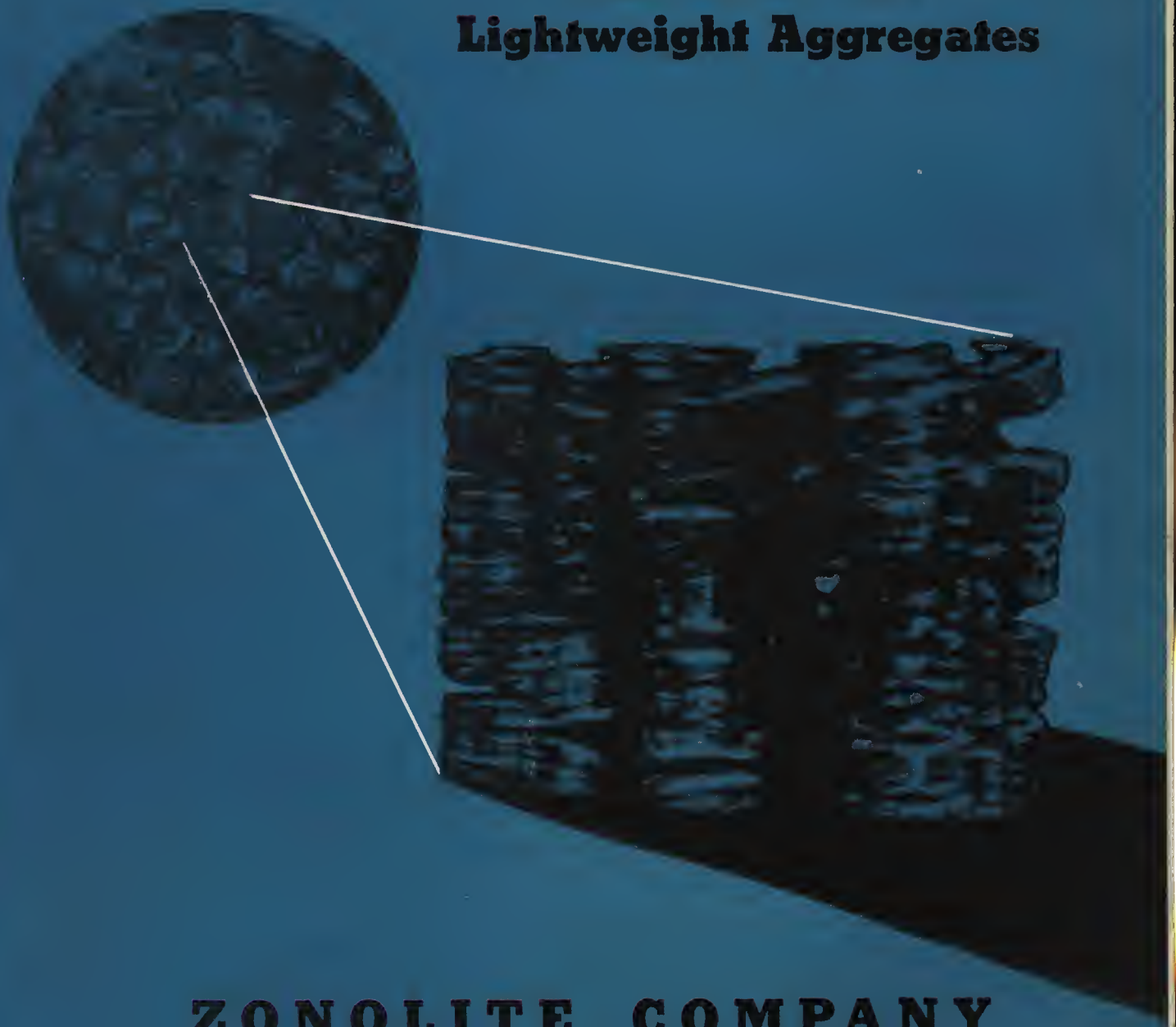
ZONOLITE

TRADE MARK REG. U. S. PAT. OFF.

BRAND

VERMICULITE

Insulation and Lightweight Aggregates



ZONOLITE COMPANY

135 South La Salle Street, Chicago 3, Illinois

The story of ZONOLITE BRAND VERMICULITE

The story of Zonolite is the story of a new concept in building that affords architects and builders new freedom in design and construction. Two of the age old problems in building have been excessive weight and fire hazards. An amazing mineral discovered during World War I — Zonolite brand vermiculite — has been developed into a new industry that is on the threshold of revolutionizing building by greatly minimizing these problems.

A featherweight mineral that can be used either alone, or mixed as an aggregate with gypsum or portland cement, Zonolite brand vermiculite makes possible the reduction by millions of pounds the dead load in buildings, and at the same time greatly increases the fire safety. It is desirable for use in any type structure, whether for fireproofing steel columns in a giant skyscraper, or as a warm, dry, insulating concrete floor in an Iowa poultry house. Zonolite cannot possibly be burned. It is processed at 2000 degrees.

Zonolite brand vermiculite is a member of the mica family, but, unlike ordinary mica, it will expand when heated. It is the ability to expand when heated that makes Zonolite unique. The expanded material weighs from 5 to 8 pounds per cubic foot, and contains millions of tiny dead air cells that are natural insulators against the passage of heat. The raw material is mined principally at a huge vermiculite mine in Montana and from a somewhat smaller one in South Carolina. At the mines the crude ore is refined, cleaned and graded; then shipped to Zonolite factories in various parts of the United States and foreign countries, where it is processed.

Zonolite is graded to different sizes for specific uses. The standard grades are: (1) Insulating Fill; (2) Concrete Aggregate and (3) Plaster Aggregate. The physical characteristics of all grades are exactly the same — they combine light weight, fire safety, permanence and versatility.

Fill Type Insulation

A free-flowing, easy to apply, loose-fill insulation, Zonolite brand vermiculite is ideal for homes, commercial and industrial buildings, and cold storage plants. See Page 3 for further information.

Insulating Concrete Aggregate

Properly graded and treated, Zonolite concrete aggregate is mixed with portland cement to make a remarkably light and highly efficient insulating concrete. Some of the applications of this material are shown on Pages 4 and 5.

Insulating Plaster Aggregate

Weighing only 216 pounds per cubic yard, as compared to 2700 pounds for sand, Zonolite Plaster Aggregate mixed with gypsum is widely used for conventional plastering or fireproofing. Crack resistance and ease of application are added advantages. See Pages 6 and 7.

Zonolite Acoustical Plastic

Is a ready-mixed, fire safe acoustical plaster, combining incombustibility and high sound-absorbing qualities at low cost. See Page 6.

Zonolite insulation in attic of home. Lightweight — easy for worker to handle bag.

Pouring Zonolite Fill in loft of huge cold storage plant. Free flowing — rapidly installed.

Above plant—completing installation. See how Zonolite insulation fits snugly against joists.

Field Building, Chicago. Insulated with thousands of bags of Zonolite Insulating Fill.

Zonolite insulation • fill type

General — Zonolite Granular Fill Insulation is a lightweight, free-flowing material. It is usually installed in the attic right above the ceiling and in the side walls. Every space is uniformly filled, without seam or joint, to the proper density. Each granule consists of laminations containing millions of tiny dead air cells that resist passage of heat. Golden color reflects heat. Weighs about eight pounds per cubic foot.

Easy Installation — Simply pour from bag and level off to even thickness. No special equipment or masons required. Will not harm or irritate skin. So simple to install anybody can do it.

Fireproof — Rotproof — Odorless — 100% fireproof. Not treated. Can't possibly burn. Absolutely rotproof, vermin proof and a non conductor of electricity. Virtually unaffected by moisture. In case of high humidities or unusual moisture conditions, material will not be harmed or lose original characteristics.

Efficient — Because space in attics or sidewalls is uniformly filled, there are no voids, seams or cracks to cause "heat leaks". In attics it forms a blanket. Highly desirable for residential, industrial and cold storage installations.

Twin Houses Prove Efficiency — A. Lee Kahn, prominent architect, designed two houses "proving ground" for Zonolite Insulating Fill. The houses, identical in every detail except that Twin A was not insulated and Twin B was completely insulated in ceiling and sidewalls with Zonolite Insulating Fill, were constructed side by side in Detroit.

Not only was Twin B far more comfortable to live in but it actually accomplished fuel savings of $66.52 in a single heating season. (Present day fuel costs considerably higher — savings proportionately greater.) The cost of the Zonolite was $210.45. The following table shows the amazing annual return on that $210.45 investment:

	Gallons Oil Used	Oil Cost 7¢ Per Gallon
Twin A (Uninsulated)	2536	$190.20
Twin B (Insulated with Zonolite)	1649	123.67
Annual Fuel Savings		66.53
Cost of Zonolite		210.45
Annual Return on Investment in Zonolite		31.6%

* Zonolite paid for itself in fuel savings in 3 years and 2 months.

The chart below shows the approximate area covered by one bag of Zonolite Granular Fill Insulation when installed at various thicknesses.

Thickness	2"	3"	3½"	4"	5"	5½"
Coverage per bag in sq. ft.	26	17	14	13	10½	9

Zonolite insulating concrete

General Characteristics

Zonolite Insulating Concrete is made by mixing Zonolite Stabilized Concrete Aggregate, a special grade of vermiculite, with portland cement and water. It is mixed in the same manner as ordinary concrete. The aggregate is treated chemically at time of manufacture to improve workability, bulk and lightness of the concrete, and at the same time impart a considerable degree of water repellency to the product.

Advantages

High Insulating Value—Zonolite Insulating Concrete has a high insulating value, one inch having a rate of heat transfer equal to 20" of ordinary concrete. It has sufficient crushing strength (from 5 to 20 tons per sq. ft., depending on the mix) to withstand all but the most unusual load conditions.

Lightweight—Zonolite Insulating Concrete weighs 1/7 as much as ordinary concrete or less than 2 pounds per square foot 1 inch thick.

Incombustible—Zonolite Concrete Aggregate is processed at 2000 . It cannot burn. Tests by the Underwriters' Laboratory on a floor construction incorporating Zonolite Insulating Concrete is given a four hour fire rating. This effectively protects against passage of heat and flame in case of fire.

Economical—The first cost, which is comparable to other insulating materials, is the last cost because Zonolite Insulating Concrete is permanent.

Time Tested—Over 250 million board feet of Zonolite Insulating Concrete are giving satisfactory service throughout the world.

Rot Proof—Moisture has no effect whatsoever on the life of Zonolite Insulating Concrete. If, for any reason, it should become wet, it will dry out without warping or buckling, retaining its original high insulating efficiency.

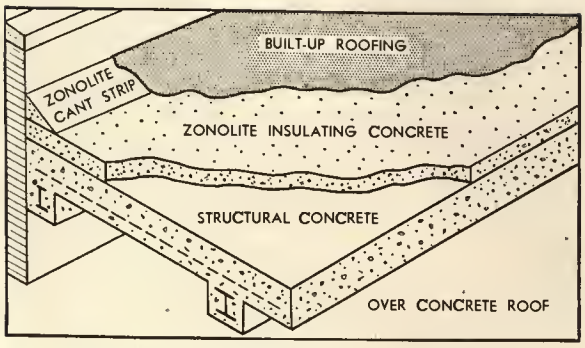
Vermin Proof—Zonolite Insulating Concrete provides no food or nesting material for vermin or termites, nor can they gnaw their way through it.

Permanent—Zonolite Insulating Concrete consists entirely of mineral or inorganic materials. It is not affected by destructive agents that limit its life or usefulness. Therefore, it need not be replaced during the life of the building.

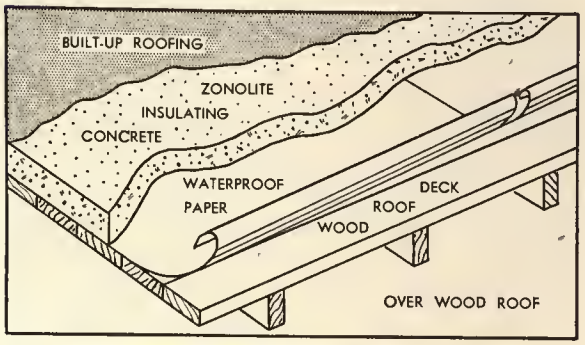
Physical Properties

	Mix	(1-4)	(1-8)
Proportions:	Portland Cement (bags)	1	1
	Zonolite Stabilized Concrete Aggregate (bags) (one bag contains approx. 4 cu. ft.)	1	2
	Water (gallons)	13	26
Density (lb. per cubic foot)		34	20
K (70) (BTU/hr/sq. ft., inch)		0.79	0.60
Crushing strength (lb./sq. inch)		240	70
Crushing strength (lb./sq. foot)		35,000	10,000

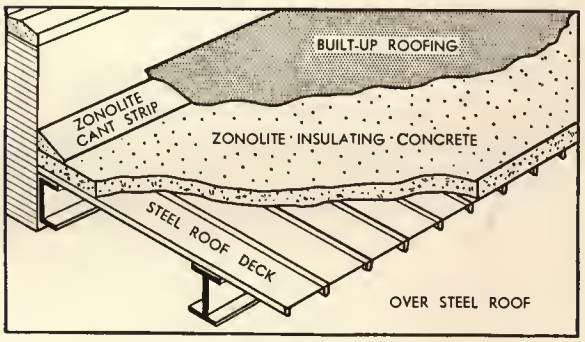
Zonolite Roof Insulation



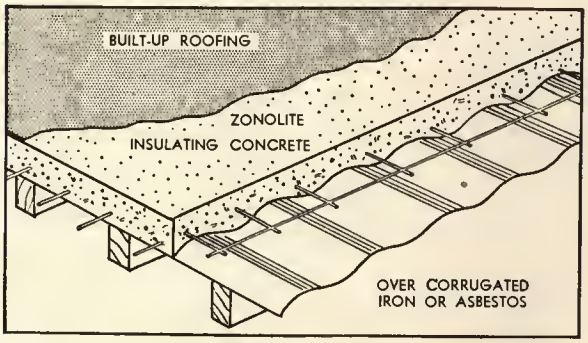
Zonolite Insulating Concrete over Concrete Roof



Zonolite Insulating Concrete over Wood Roof

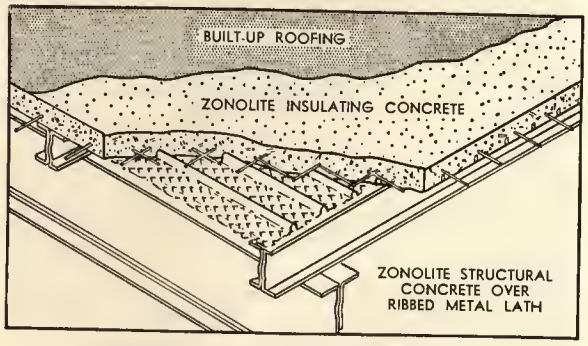


Zonolite Insulating Concrete over Steel Deck

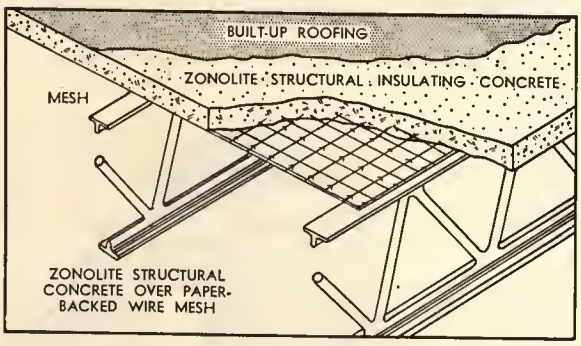


Zonolite Insulating Concrete over Corrugated Roof

Zonolite Short Span Structural Roof Deck

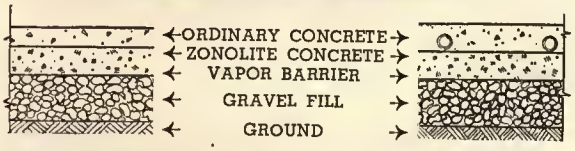


Zonolite Concrete over Ribbed Metal Lath



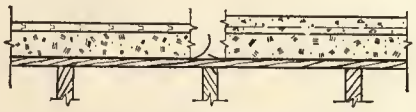
Zonolite Concrete over Paper-backed Wire Mesh

Zonolite Floor Insulation



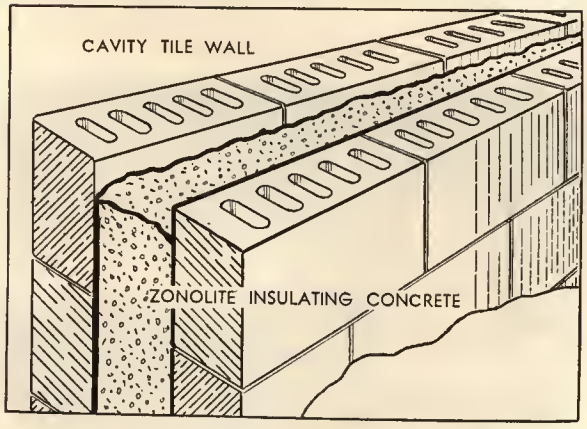
Zonolite Insulating Concrete Floor on Ground

Radiant Heat Pipes in Floor



Zonolite Insulating Concrete over Wood Floor

Zonolite Cavity Wall Insulation



Insulating Cavity Wall with Zonolite Concrete

Zonolite insulating concrete

Structural Roof Decks—Zonolite Insulating Concrete is widely used in Short Span Structural Roof Decks, in which the functions of insulation and structural strength are combined. Reinforcing steel, usually in the form of a welded wire mesh, is embedded in the insulating concrete. At the top, right, are shown the two most commonly used constructions, one using a paper-backed lath called "Steeltex" and the other with welded mesh and gypsum board forms. Hi-rib lath is also frequently used for supporting the insulating concrete. For this application, the usual proportions are 1 bag (4 cubic feet) of Zonolite Stabilized Concrete Aggregate to 1 bag of portland cement.* A BUILT-UP roofing is applied directly to the top of the Zonolite concrete.

For further information and specifications, write for folder CA-5.

Roof Insulation—Zonolite Insulating Concrete— because of its lightness, insulating value and permanence is the ideal material for roof insulation on structural decks of other materials such as concrete, wood, steel, gypsum, etc. It is simply poured to the required depth (never less than two inches) over the existing structural deck and when cured, a built-up roof or other roofing material is applied according to customary practice.

This permanent insulating material has sufficient strength to withstand normal traffic on roofs, combined with flexibility and resiliency to resist cracking due to temperature changes. The chemical pre-treatment of the aggregate imparts a considerable degree of water resistance to the concrete.

CANTS, CRICKETS and SADDLES may be poured monolithically with the roof insulation. By varying the thickness of the Zonolite Concrete, proper slopes for roof drainage can be easily obtained.

For details and specifications, write for folder CA 2.

Floor Insulation—Warm, dry, grade level floors (with or without radiant heat) result whenever Zonolite Insulating Concrete is used as a base for the wearing surface. Heat losses into the ground are reduced to a minimum, saving fuel costs and greatly increasing comfort. On hot, humid days, condensation on floor surfaces can usually be avoided because of the low heat capacity of Zonolite Insulating Concrete. A topping, or wearing surface, must be used over Zonolite Insulating Concrete floors to prevent damage from traffic or heavy loads.

The figures at the right show how Zonolite Concrete is used in ordinary grade-level floors, and where radiant heat pipes are placed in the floor. Also shown are typical examples of how Zonolite can be used to insulate above-grade floors.

For details and specifications, write for folder CA-4.

Cavity Wall Insulation—Zonolite Insulating Concrete is finding increasing application as an insulating material in cavity walls constructed of brick, clay, tile or concrete block. Very lean mixes, having the maximum insulating value, are generally used.

*The physical properties of this mix are shown at the bottom of Page 4.

Zonolite insulating plaster

Zonolite Plaster Aggregate—weighing only 8 pounds per cubic foot, as compared to 100 pounds for sand—is rapidly replacing sand in gypsum plaster. It is graded to the standard sizes specified for sand aggregates and is approved by both the American Standards Association and the American Society For Testing Materials. It is used in the same manner and proportions (volume) as sand. No special precautions are necessary. Ease of handling and elimination of dead load usually makes Zonolite Plaster cost less.

All three: architect—plasterer—owner—benefit when Zonolite Plaster is specified. Architects prefer Zonolite Plaster because of the weight reduction and fire protection it offers. (See Page 7). The plasterers like it because it is light in weight and easy to mix and apply. It comes in clean paper bags, eliminating contamination, and the trouble of frozen sand in the winter. Can be mixed indoors. Simplifies cleaning up after the job is finished. And the owner prefers it because of its crack resistance and the additional insulation afforded by its use. Zonolite Plaster has nearly four times the insulating value of sand plaster. Because the weight of the building is reduced, settlement cracks are frequently eliminated.

For details, send for Plaster literature.

Zonolite acoustical plastic

Zonolite Acoustical Plastic is a factory mixed material, requiring only the addition of water before being applied by ordinary plastering procedures. Filling a long felt need for an incombustible, low cost, sound deadening material, it is widely used in churches, restaurants, theatres, offices, bowling alleys class rooms, homes—wherever quiet is particularly desired. It will stick to any clean, firm, water resistant surface. "When applied to combustible surfaces it will reduce the flame spread, contribution of fuel and production of smoke."*

The high sound absorption characteristics of Zonolite Acoustical Plastic, even after several coats of water-base paint, are shown in the table below. (For specifications for mixing and applying write for folder PA-5.)

*Underwriters' Laboratory Retardant 2850, April 30, 1946, Page 18.

Sound Absorption Test

Coefficient of sound absorption recorded for Zonolite Acoustical Plastic ½" thick after being painted with 2 and 4 coats of Kem Tone.

FREQUENCY (cycles per second)	COEFFICIENTS* 2 coats	COEFFICIENTS* 4 coats
128	.31	.30
256	.32	.37
512	.52	.59
1024	.81	.84
2048	88	.74
4096	.84	.65
Noise Reduction Coefficient	65	.65

*As determined by a Nationally known laboratory.

Meets Federal Specifications SS-A-111, Acoustic Materials, Type II, Classes 1 and FF.

Trusses fireproofed with Zonolite plaster. Tons of dead load eliminated by this method.

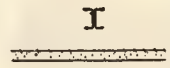
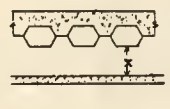
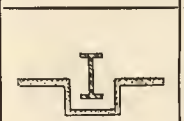
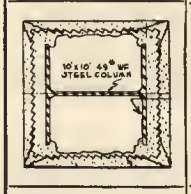
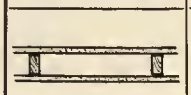
Plastering team at work on interior of home. Easy workability and light weight of Zonolite Plaster decreases fatigue and increases efficiency.

Picture nails will not chip or crack Zonolite plaster. Cracking virtually eliminated.

Schoolroom sound conditioned with 100% fireproof — "fire-safe"—Zonolite Acoustical Plastic.

Fireproofing steel column with Zonolite brand vermiculite plaster aggregate and gypsum.

Summary of Fire Tests

Construction	Description	Rating	Authority
	Steel Plate Floor Assembly. 2" vermiculite concrete topping. Suspended ceiling 1" vermiculite plaster on metal lath.	4 hrs.	Underwriters' Lab. Ret. No. 2773—9/12/44
	Suspended ceiling of 1 inch vermiculite plaster, on metal lath as protection for steel construction. Incombustible construction above ceiling.	4 hrs.	Underwriters' Lab. Ret. No. 2773—1/20/47
	2½" sand concrete topping. Ceiling of 1" vermiculite plaster on metal lath.	4 hrs.	U. S. Bureau of Standards BMS92 Table 44
	As above, except ¾" vermiculite plaster.	3 hrs.	
	Minimum of 2" cinder concrete fill. Suspended ceilng of ⅞" vermiculite plaster on metal lath.	4 hrs.	Underwriters' Lab. Ret. No. 2689-12/18/39
	2½" *sand concrete fill 1" vermiculite plaster on metal lath.	4 hrs.	U.S. Bureau of Standards BMS92 - Table 43 *True average thickness of the concrete fill ¼" greater than shown due to sag in forms.
	2½" *sand concrete fill ¾" vermiculite plaster on metal lath.	3 hrs.	
	Steel "I" Beam Protection. Suspended protection of 1" vermiculite plaster on metal lath. Incombustible construction above ceiling.	4 hrs.	Underwriters' Lab. Ret. No. 2773—1/20/47
	Column protected with 1" vermiculite plaster on metal lath. Lath spaced 1¼" from column flange. Space behind lath on flange faces filled with plaster as shown.	3 hrs.	Underwriters' Lab. Ret. No. 2851—1/7/47
	Load bearing wood stud partition. Metal lath with ¾" vermiculite plaster both sides.	1 hr.	Underwriters' Lab. Ret. No. 2773—8/31/44

Fireproofing structural steel

With Zonolite Plaster

General

The outstanding property of Zonolite Insulating Plaster is its ability to stop the passage of heat and flame. Like many other materials of construction, Zonolite Plaster will not burn. However, due to its unusually high insulating value, heat passes through Zonolite Plaster very slowly—so slowly, in fact, that one inch of this lightweight material is given a four hour rating for the protection of structural members.

See typical fire ratings for various applications at the left.

Weight Reduction

The possibilities of weight reduction offered by Zonolite Plaster, when used for fireproofing in the place of concrete and allied materials, are unusual. When stone concrete is used to obtain a four hour rating as protection for structural steel beams, the concrete weighs approximately 190 pounds per linear foot for a 15" I beam. This same beam may be protected with one inch of Zonolite Plaster on metal lath, in which case the plaster and lath will weigh about 19 pounds, giving a 90 percent reduction in weight for the protection material.

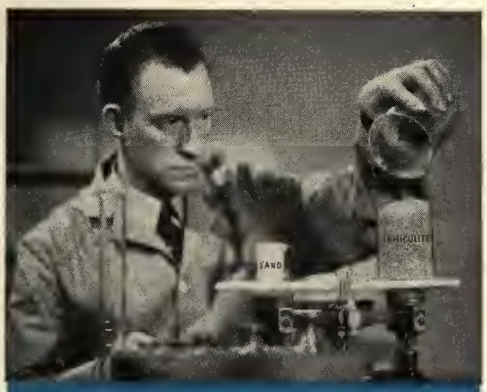
In one large 35-story office building recently constructed, the weight of concrete fireproofing for the steel frame had initially been estimated at 15 million pounds. Redesigning for Zonolite Plaster on metal lath, the total weight of plaster required was 855,000 pounds, or a reduction of over 14 million pounds (94 percent).

This saving, coupled with an equally large saving in weight due to the use of Zonolite protection for the cellular steel floor system, resulted in a saving of 1880 tons of structural steel in the entire building, or a 30 percent reduction in the amount of steel originally called for.

Additional Savings

Zonolite fireproofing plaster provides both the finished surface, as well as the needed fire protection. Ordinarily, where appearance is important, a plaster finish is necessary on concrete protected construction. The very substantial saving possible with Zonolite is self-evident. The total cost, materials and labor for fireproofing by this method about equal the cost of forming alone for poured concrete. Fireproofing with Zonolite Plaster eliminates the cost of the concrete, reinforcing, labor of placing, dismantling forms and providing an additional plaster finish.

In the adjoining column, a summary of fire tests is shown. Complete reports are available for any of these tests.



Comparing volume of Zonolite brand vermiculite to sand at equal weights. Zonolite vermiculite weighs 4 to 8 lbs. per cu. ft. depending on grade sand 100 lbs. per cu. ft.

Fire-proofing

Steel columns and floor fireproofed with Zonolite brand vermiculite. Dead load reduced 15,634 tons. Mercantile Bank, Dallas, Texas.

Acoustical

Luggage Store, Rochester, N. Y.

Zonolite Acoustical Plastic sound conditioning. Esquire Theater, Sacramento

Floors

Radiant heat pipes being installed over Zonolite insulating concrete. Arella Photo Studios, Dearborn, Mich.

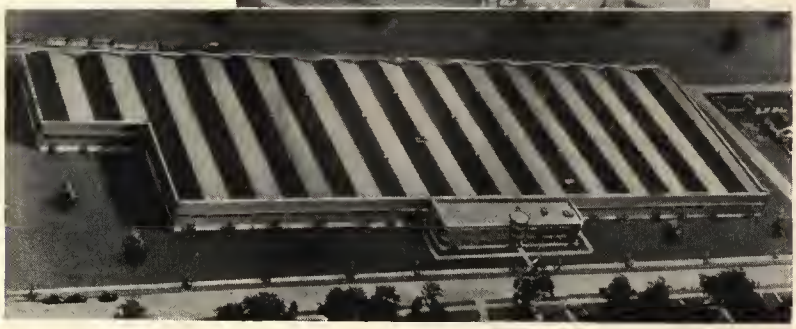
Covering radiant heat pipes with ordinary concrete — pipes resting on Zonolite insulating concrete. Bowling Green State University, Bowling Green, Ohio.

Roofs

Zonolite insulating concrete poured over paper-backed wire mesh to form structural roof deck. Omaha, Neb.

Installing structural roof deck — pouring Zonolite insulating concrete over reinforced metal lath. Atlanta, Ga.

Zonolite insulating concrete over steel deck — 4 acres of roof area. Lily Tulip Cup Co., Augusta, Ga.



ZONOLITE COMPANY

135 South La Salle Street, Chicago 3, Illinois

ARMSTRONG'S INDUSTRIAL INSULATIONS

- ✓ CORKBOARD
- ✓ CORK COVERING
- ✓ MINERAL WOOL BOARD
- ✓ FOAMGLAS*
- ✓ HEAT INSULATION MATERIALS
- ✓ INSULATING REFRACTORIES

ARMSTRONG CORK COMPANY

BUILDING MATERIALS DIVISION

LANCASTER • PENNSYLVANIA

© PC Corp.

ARMSTRONG'S INDUSTRIAL INSULATIONS AND COMPLETE CONTRACT SERVICE FOR TEMPERATURES FROM —300° TO 2800° F.

The efficiency and dependability of every insulation job are determined by three factors.

The first is **quality of materials,** for without quality, maximum insulating efficiency and long-range dependability cannot be attained.

The second is **excellent workmanship,** for the best insulation cannot perform efficiently or give long service unless it is properly installed.

The third is **correctly engineered specifications** to assure that both materials and methods of installation are suited to the conditions of the job.

All three of these vitally necessary factors are provided by Armstrong's Insulation Contract Service.

1. Insulation materials of proved efficiency

The trend toward the use of extremely high or low temperatures in modern industrial processing and power generation, and the use of lower temperatures in the preservation and handling of food, demands insulations that offer a maximum of dependable service and thermal efficiency.

The following insulating products cover the industrial temperature range from 300° below zero to 2800° F. By establishing long and satisfactory performance records on the job, these insulations have proved their ability to stand up in any practical application.

For temperatures from 300° F. below zero to 50° F. above.	Armstrong's Cork Covering Armstrong's Corkboard Armstrong's Mineral Wool Board Foamglas
For various temperatures from 50° F. to 1900° F.	85% Magnesia Pipe Covering and Block Diatomaceous Earth Pipe Covering and Block Mineral Wool Insulations Laminated Asbestos Paper Pipe Covering, Sheets, and Blocks Cellular Asbestos Pipe Covering and Block Wool Felt and Hair Felt Pipe Covering
For temperatures from 1600° to 2800° F.	Armstrong's Insulating Fire Brick

2. Skilled Workmanship

The efficiency of an insulation in service depends greatly upon the skill with which it is installed. Skilled superintendents and crews of experienced mechanics capable of installing correctly outdoor and indoor work, high or ground level jobs, large or small installations, are maintained in Armstrong offices in leading industrial areas.

3. Engineering Service

Costly delays and improper application of insulation can be eliminated by competent job planning and engineering "know-how." Armstrong engineers have a background of practical experience acquired during almost 50 years of specifying insulation to control conditions ranging from special low-temperature processing equipment to the heat treating of steel. As a result, these men are fully qualified to solve insulation problems involving any temperature condition. Feel free to ask any Armstrong office or distributor for aid in developing your plans.

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ARMSTRONG'S LOW-TEMPERATURE INSULATIONS

	CORKBOARD*	MINERAL WOOL BOARD	FOAMGLAS
Composition	Made entirely of granules of pure cork compressed and baked into board form. Cork's structure is cellular and its minute air-filled cells effectively resist the passage of heat.	This insulation is mineral wool with a waterproof binding agent, is processed to form a strong homogeneous board and cut to accurate size.	Glass made in cellular form and cut into accurately sized blocks. Each cell is closed and impervious to air or water. Foamglas is fireproof and permanent.
insuloting Efficiency	Thermal coefficient is 0.27 Btu at 60° F.	Thermal coefficient is 0.33 Btu at 75° F.	Thermal coefficient is 0.40 Btu at 50° F.
Moisture Resistonce	Cork's cellular structure provides lasting resistance to moisture.	Both the mineral wool and the binding agent are waterproof and will not absorb water.	Permanently vaporproof. Absorbs no water.
Weight	0.65 lb. per board ft.	Approximately 1.25 lbs. per board ft.	10 to 11 lbs. per cubic foot. (.833 to .95 lb. per board ft.)
Structurol Strength	Strong and tough and will not settle, sag, shrink, swell, or warp. Self-supporting to a height of 14'.	Self-supporting to a height of 11' and will stay in place without sagging, settling, shrinking, swelling, or warping.	Block is rigid and wall insulation will support insulated ceiling construction. Average compressive strength 150 psi.
Workobility	Easily cut and worked with a wood saw and other ordinary tools. Readily shaped to fit curved surfaces.	Readily handled and erected with ordinary tools. Can be shaped to curved surfaces.	May be cut with a saw or knife and is easily shaped.
Odor	Free from any objectionable or contaminating odor.	Free from any objectionable or contaminating odor.	Odorless cxcept when being cut for installation. (Dissipates immediately.)
Bond with Finishing Materiais	Portland cement plaster and asphalt emulsion plastics bond securely.	Portland cement plaster and asphalt emulsion plastics bond securely. Do not use portland cement plaster on ceilings.	Secure bond with asphalt emulsion plastics. Do not use portland cement plaster.
Sizes	12" x 36", 18" x 36", 24" x 36", 36" x 36". Thicknesses 1", 1½", 2", 3", 4", 6". Regranulated cork available for filling irregularly shaped spaces.	12" x 36". Thicknesses 1", 1½", 2", 3", 4". Regranulated mineral wool available for filling irregularly shaped spaces.	12" x 18". Thicknesses 2", 3", 4", 5"
Foctory Finish	Standard Corkboard . . . no finish Super-Service Corkboard . . . asphaltic coating, both sides. Mastic Finish Corkboard . . . ⅛" asphalt mastic finish, one side.	No finish.	No finish.
Federoi Specification	Conforms to HH-C-561b.	Conforms to HH-M-371.	No specification.
Other Qualities	Fire resistant Resists decay Will not harbor vermin	Fire resistant No tendency to rot, mold, or harbor vermin	Fireproof Verminproof Not affected by temperature, moisture, or age.

*Armstrong's Cork Covering has essentially the same characteristics as corkboard. See details on page 17.

**Data supplied by Pittsburgh Corning Corporation.

ADDITIONAL PROPERTIES OF FOAMGLAS**

Coefficient of Expansion (°F.)	.0000045 in
Specific Heat	.200 Btu per lb.
Average Crushing Strength	150 lbs./sq.in.
Modulus of Rupture	130 lbs./sq.in.
Absorption (Water)	0
Impact Strength	66 ft. lbs.
Air Infiltration or Permeability	0
Capillarity	0

FACTORS IN SELECTING INSULATION

Choice of low-temperature insulation material will depend, in part, on such factors as:

Local Cost for Refrigeration
Type of Construction
Local Climatic Conditions
Temperature Range to Be Controlled
Weight Requirements
Rigidity or Flexibility Requirements
Fire Resistance
Moisture Resistance
Structural Strength

Armstrong's line of insulations—Corkboard, Cork Covering, Mineral Wool Board, and Foamglas—makes possible the selection of a material that exactly meets the requirements of each job. Armstrong's Corkboard and Cork Covering have established such a long record of efficient service that they are today the standard of comparison for materials in their field. Mineral Wool Board and Foamglas are more recent additions to the Armstrong Line, with distinctive features that make them specially useful under certain conditions. All are efficient, dependable, and backed by the Armstrong reputation for quality and satisfaction.

DESIGN STANDARDS FOR LOW-TEMPERATURE WORK

Where insulation is a barrier between two temperatures, an unbalanced condition exists. Natural forces struggle constantly to restore normal balance by means of a heat flow from the hot to the cold side of the barrier.

Adequate and efficient insulation, more than any other factor, will determine the final economy of a cold room or refrigerated building. Cold storage rooms may be located in any part of the building and may be built as single or multiple units. Multiple rooms are more flexible in use and generally more economical in operation. Such rooms should be built in one block, if possible, for greatest economy of space, piping, refrigeration, and insulation. Partitions and ceilings between sharp freezers and other higher-temperature rooms should be heavily insulated. Freezers should not be located in a basement or under a cooler. Coolers may be located under a freezer.

CONSTRUCTION

Structural walls, floors, and ceilings should be of solid construction. Monolithic concrete or solid brick with flush joints is recommended wall construction. Avoid air spaces such as occur in hollow tile, cinder or concrete block, and sheathed studs or joists. If such spaces are unavoidable, as in an existing building, they should be left as open as possible for free air circulation. Where building walls are not used as a base for the insulation, self-sustaining or solid insulation walls are recommended for partitions and interior walls. When the ceiling height is greater than that needed for the cold room, a dropped ceiling is recommended to conserve refrigeration.

DOORS

The doorway of a refrigerated room is the point where the greatest loss due to infiltration occurs. It is true economy to use a well-built door made by a reputable manufacturer specializing in this field. Doors of many types are designed to meet the many different requirements of both temperature and service.

AIRPROOFING

The problem of air infiltration requires attention in all refrigerated constructions. This is always present to a certain extent and the resultant vapor condensation is harmful whether it occurs in the building structure or in the insulation. Solid concrete or masonry construction aids airproofing. If brick are used they should be hard and dense. All masonry walls, except smooth-finished concrete, should receive a ½" coat of portland cement plaster, and all surfaces should be additionally airproofed with Armstrong's No. 3 Asphaltic Paint. This priming paint seals against vapor passage and provides a strong bond for the asphalt used in erecting the insulation. It has a high film strength, does not flow at maximum wall temperatures, penetrates into the pores of the walls, is easily applied, and its desirable weatherproofing qualities improve with age.

FINISHES

Insulation should receive a finish which will give long service under the temperature and moisture conditions common to cold storage rooms. The finish should bond securely to the insulation and be reasonably resistant to bumps and abrasion. Cost, good appearance, and availability should also be considered. These requirements are best met by asphalt emulsion finishes or portland cement plaster. In areas where insulation is subjected to excessive bumping or abrasion, the finish should be protected with wainscoting or bump rails.

GUIDE TO INSULATION THICKNESS

In insulating a refrigerated room, the first consideration in determining what thickness to use is the temperature at which the room will operate. In addition, other design factors must be considered and the final insulation thickness selected accordingly. For example:

Ripening rooms for bananas, tomatoes, etc., are usually operated at 56 to 60 degrees Fahrenheit with 90 to 95% humidity, and require extra insulation because of the humidity and the accurate control required.

Extra insulation should be used on ceilings which form the roofs of buildings where summer temperatures are high or long periods of hot weather prevail. Depending upon whether the room is on or below grade or suspended above grade, different insulation thickness may be used on the floor than on the walls and ceiling.

Partitions and ceilings between freezers and higher temperature rooms should be heavily insulated. Without special provisions, freezers should not be located on or below grade. Freezers should not be located under coolers. Coolers may be located under freezers.

The table at the right lists thicknesses of insulation generally considered to be good practice for normal conditions in most sections of the country. Since the factors outlined above can effect either an increase or decrease in these suggested thicknesses, the nearest Armstrong office should be consulted for a recommendation.

		Corkboard	Mineral Wool Board	Combination Foamglas and Corkboard	Foamglas
Coolers	50° F.	2	2	3″ Foamglas	5″
	45° F.	3	3	1″ Corkboard	
	40° F.	4	4	3″ Foamglas 2″ Corkboard	6″
	30° F.	4	5	3″ Foamglas 2″ Corkboard	6″
Freezers	20° F.	5	6	3″ Foamglas 3″ Corkboard	8″
	10° F.	5	6	3″ Foamglas 3″ Corkboard	8″
	5° F.	6	7	3″ Foamglas 4″ Corkboard	9″
	0° F.	6	7	3″ Foamglas 4″ Corkboard	9″
Sharp Freezers	—5° F.	7	9	3″ Foamglas 5″ Corkboard	11″
	—10° F.	7	9	3″ Foamglas 5″ Corkboard	11″
	—15° F.	7	9	3″ Foamglas 5″ Corkboard	11″
Super Freezers	—20° F.	8	10	3″ Foamglas 6″ Corkboard	12″
	—25° F.	9	11	3″ Foamglas 7″ Corkboard	14″
	—30° F.	10	12	3″ Foamglas 8″ Corkboard	15″
	—35° F.	10	12	3″ Foamglas 8″ Corkboard	15″

RECOMMENDED COLD ROOM TEMPERATURES

Product	Recommended Temp. °F.
Apples	30 to 32
Asparagus	32
Avocados	40 " 55
Bananas (holding)	56
Beef (fresh)	32 " 34
Beer (barrels)	45
Berries (fresh, 10 days)	31 " 32
Butter (short carry)	35
Butter (long carry)	—10 " 0
Cabbage	32
Cantaloupes	32 " 34
Carrots	32
Celery	31 " 32
Cheese	approx. 34
Chocolate (dipping room)	65
Cream (short carry)	20 " 25
Cream (long carry)	0 " 20
Eggs	30 " 35
Fish (fresh)	33 to 40
Fruits (dried)	32 " 50
Furs (dressed)	25 " 35
Grapes	30 " 32
Hams (not brined)	20 " 35
Honey	36 " 45
Ice	28
Ice Cream	15
Lard	32 " 33
Lemons	55 " 58
Livers	20 " 30
Maple Syrup and Sugar	40 " 45
Meats (canned)	30 " 40
Meats (brined)	35 " 43
Meats (fresh)	33 " 35
Melons	35 " 40
Milk	32 " 38
Nursery Stock	30
Nuts (in shells)	30 " 40
Oleomargarine	—10 to 0
Onions	32
Oranges	32 " 34
Oysters (tubs)	25 " 35
Oysters (shells)	33 " 43
Peaches	31 " 32
Pears	29 " 31
Pork (fresh)	32 " 34
Potatoes	38 " 50
Quick-frozen foods—to freeze	—15 " —40
Quick-frozen foods—to store	—10 " 0
Raisins	40 " 45
Salt Meat—Curing Room	32
Sauerkraut	35 " 38
Sausage Casings	40 " 45
Scallops (frozen)	16
Tobacco	35 " 42
Wines	40 " 50
Woolens	25 " 28

The following applications are the ones most generally used in the construction of small cold storage rooms. Engineering cooperation in the solution of special problems is freely offered by the Armstrong Cork Company.

BACK PLASTER—Where the corkboard insulation is to be applied against masonry walls in asphalt, the walls must be made true and even, if necessary, with portland cement mortar, mixed: 1 part portland cement, 3 parts clean, sharp sand. Immediately preceding the application of the plaster, wet the walls evenly with clean water. Apply the plaster in one or more coats to ¼" minimum thickness on all high points, straighten with a straightedge, and bring to a smooth float finish.

Where necessary, to ensure a good bond, the existing wall surfaces must be roughened or hacked before applying the plaster.

ASPHALTIC PRIMING PAINT—All brick, concrete, or plastered surfaces to which the corkboard insulation is to be applied in hot asphalt must be primed with Armstrong's No. 3 Asphaltic Paint, applied with either brush or spray. The surfaces must be thoroughly dry before the priming paint is applied, and the paint must be allowed to dry before erection of the insulation.

JOINTS—All joints shall be tight and lapped in successive layers in order to minimize air infiltration.

NAILS AND SKEWERS—Use special galvanized nails 1" longer than the thickness of the first layer of corkboard to nail it against wood wall, column, and ceiling surfaces. Use nails 7½" long to toenail in solid corkboard partitions.

Use treated hardwood skewers to additionally secure the second and succeeding layers of corkboard on walls, columns, or ceilings.

Drive skewers at an angle. Their length shall be approximately twice the thickness of the corkboard being applied. For each layer two nails or skewers per square foot shall be used on all walls and columns; three nails or skewers per square foot shall be used on all ceilings, beams, and solid corkboard partitions.

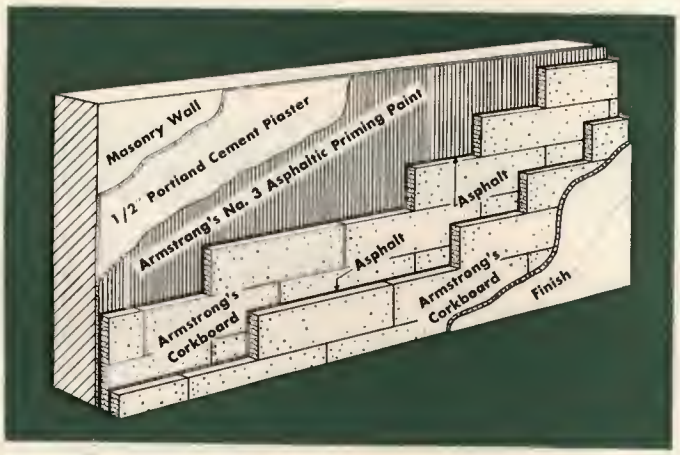
WALLS

MASONRY WALLS—Two Layers of Corkboard—Both in Hot Asphalt—All masonry wall surfaces must be thoroughly cleaned of dirt, dust, loose mortar, etc., and, where necessary, be made true and even as described under "Back Plaster." After the plaster has dried, prime the wall with Armstrong's No. 3 Asphaltic Priming Paint, as described under "Asphaltic Priming Paint."

Apply the first layer of Armstrong's Corkboard directly to this surface in hot asphalt.* Apply the second layer in hot asphalt and additionally secure it to the first layer with treated hardwood skewers. Finish the exposed cork surfaces as described under "Finishes" on page 11.

NOTE: *Where only one layer of corkboard is used, apply as described above for the first layer.*

*½" portland cement mortar, mixed 1 part portland cement and 3 parts clean, sharp sand may be used in place of the "Back Plaster" and asphalt for erecting the first layers of corkboard.

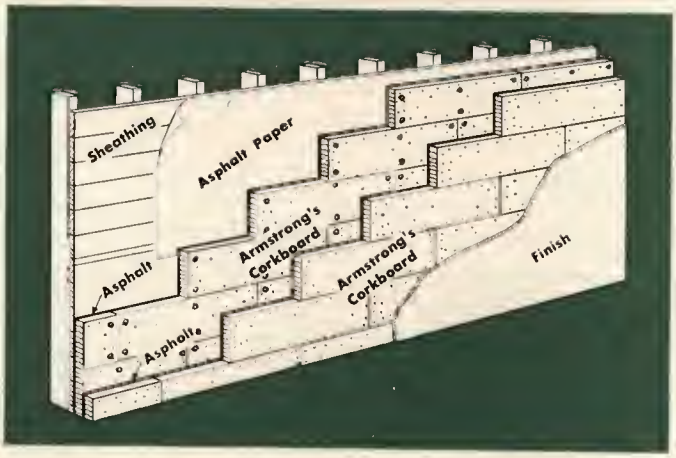


WOOD WALLS—Two Layers of Corkboard—Both in Hot Asphalt—Directly against the sheathing of the wood walls tack one layer of heavy asphalt paper lapped not less than 3" at all edges.

Apply the first layer of Armstrong's Corkboard in hot asphalt and secure it to the wood wall with special galvanized nails. Apply the second layer in hot asphalt and additionally secure it to the first layer with treated hardwood skewers.

Finish the exposed cork surfaces as described under "Finishes."

NOTE: *Where only one layer of corkboard is used, apply as described above for the first layer.*



SOLID CORKBOARD WALLS—Two Layers of Corkboard—Asphalt or Cement Core—Erect temporary 2 x 4 studs on 18" centers in alignment as a guide for self-supporting solid corkboard walls. Erect first layer of Armstrong's Corkboard against temporary studs.

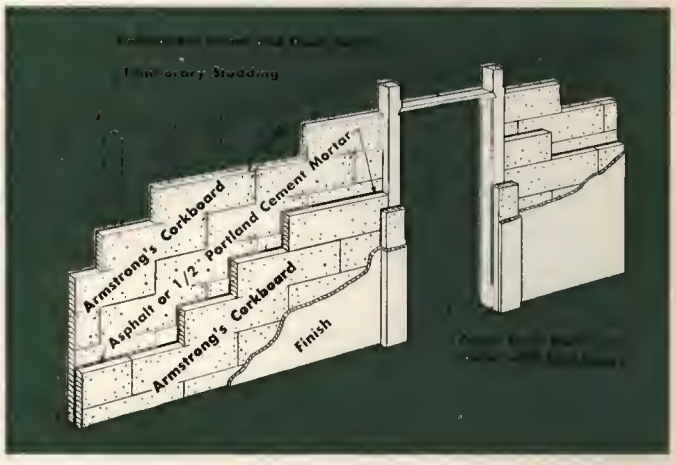
Toenail each piece of corkboard to abutting ones, and where possible to walls, floor, and ceiling with special galvanized nails.

(a)—Erect the second layer against the first in hot asphalt and secure it to the first layer with treated hardwood skewers; or—

(b)—Erect the second layer against the first one in ½" of portland cement mortar, mixed 1 part portland cement and 3 parts clean, sharp sand, and additionally secure it to the first layer with treated hardwood skewers.

Finish the exposed cork surfaces as described under "Finishes." Do not remove the temporary studs until the finish on opposite face of the wall has set.

NOTE: *Where only one layer of corkboard is used, apply as described above for the first layer.*



CEILINGS

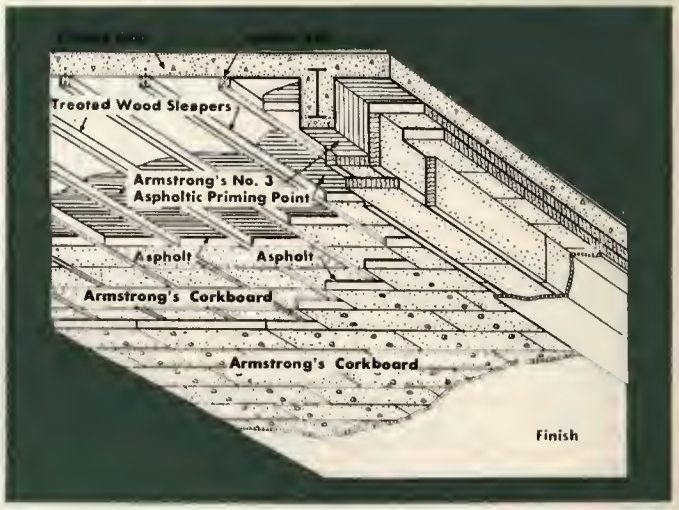
CONCRETE—Two Layers of Corkboard—Both In Hot Asphalt—Fasten to the underside of the concrete ceiling slab 1⅝" x — (*thickness of the first layer of corkboard*) sleepers with suitable anchors. The anchors and sleepers must be spaced so that the corkboard will fit tightly between, but not more than 18" apart. The concrete ceiling slab must be thoroughly cleaned of all dirt, dust, loose plaster, etc., and be primed as described under "Asphaltic Priming Paint."

Apply the first layer of Armstrong's Corkboard in hot asphalt, between the sleepers, and toenail it to the sleepers with special galvanized nails.* Apply the second layer at right angles to first layer in hot asphalt and additionally secure it to the first layer with treated hardwood skewers. Where the second layer crosses the sleepers, nail it with special galvanized nails at each sleeper.

Finish the exposed cork surfaces as described under "Finishes."

NOTE: *Where only one layer of corkboard is used, apply it as described above for the first layer.*

*½" portland cement mortar, mixed 1 part portland cement and 3 parts clean, sharp sand, may be used in place of the above method for applying the first layer of corkboard. The corkboard must then be propped in place until securely bonded to the concrete ceiling slab.

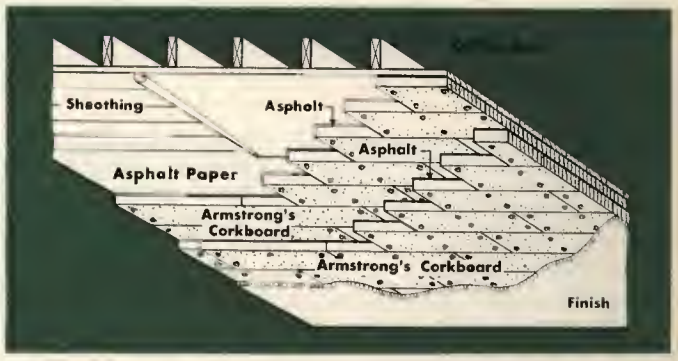


WOOD CEILING (Insulation Underneath)—Two Layers of Corkboard—Both In Hot Asphalt—Directly against the underside of the wood ceiling, tack one layer of heavy asphalt paper with edges lapped not less than 3".

Apply the first layer of Armstrong's Corkboard in hot asphalt and secure it to the wood ceiling with special galvanized nails. Apply the second layer in hot asphalt and additionally secure it to the first layer with treated hardwood skewers.

Finish the exposed cork surfaces as described under "Finishes."

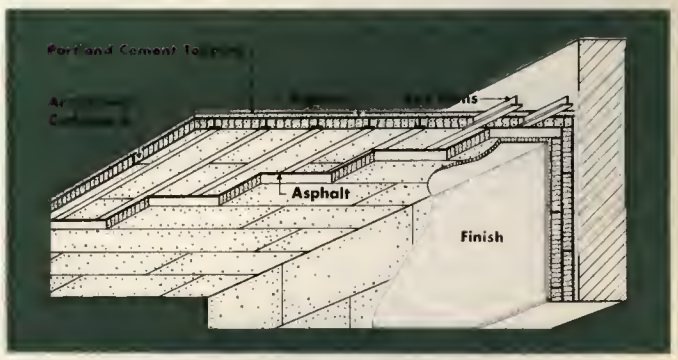
NOTE: *Where only one layer of corkboard is used, apply it as described above for the first layer.*



TEE-IRON CEILING—Two Layers of Corkboard—First Layer Fitted Between Tees; Second Layer Beneath In Hot Asphalt—Space the tee-irons 12" or 18" apart. Place the first layer of Armstrong's Corkboard between the tee-irons, notching the edges to fit snugly the flanges of the tee-irons. Flood the top surface with a heavy coat of hot asphalt and apply 1" of portland cement topping mixed 1 part portland cement and 3 parts clean, sharp sand.

Apply the second layer against the underside and at right angles to the first layer in hot asphalt and additionally secure it to the first layer with treated hardwood skewers.

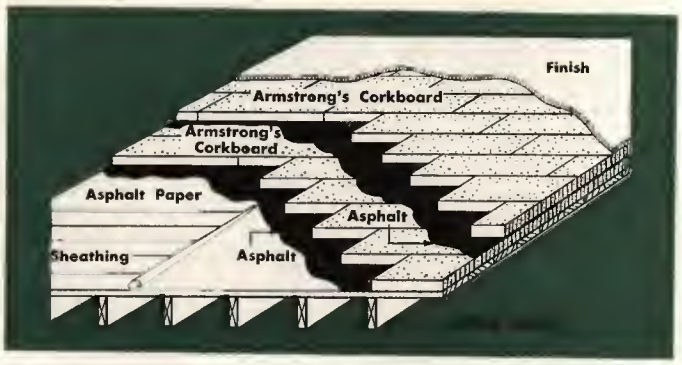
Finish the exposed cork surfaces as described under "Finishes."



WOOD CEILING OR ROOF (Insulotion on Top)—Two Loyers of Corkboord—Both in Hot Aspholt—Provide slot one inch (1″) wider than the thickness of the wall insulation along all walls so that the wall and ceiling insulation will join.

On top of wood deck, tack layer of heavy asphalt paper lapped 3″. Apply the first layer of corkboard in hot asphalt. Apply the second layer of corkboard in hot asphalt. Flood the top surface of the insulation with a heavy coat of hot asphalt or mop the top surface with hot asphalt and lay one layer of fifteen (15) pound saturated roofing felt in hot asphalt with all edges lapped and sealed. Tightly seal this membrane along all walls.

NOTE: *Where only one layer of corkboard is used, apply it as described above for the first layer and flood the top surface with a heavy coat of hot asphalt.*



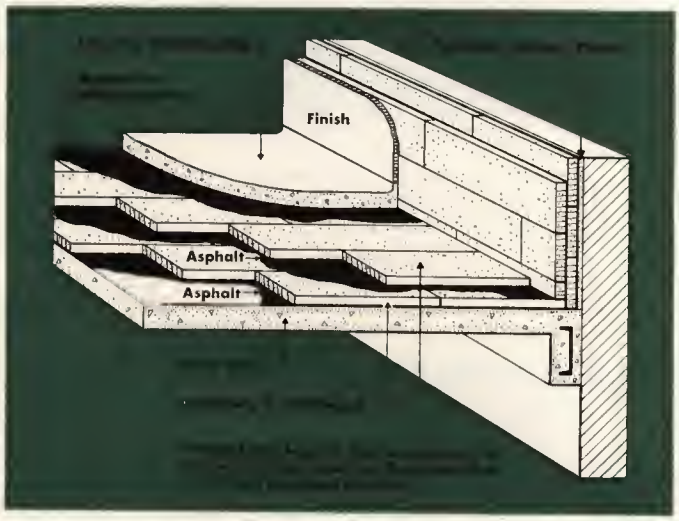
FLOORS

CONCRETE FLOOR—Two Loyers of Corkboord—Both in Hot Aspholt—The concrete base or floor on which the insulation is to be laid must be dry and reasonably smooth and level. Apply the first layer of Armstrong's Corkboard in hot asphalt. Apply the second layer in hot asphalt.

Flood the top surface heavily with hot asphalt or apply a waterproofing membrane consisting of two layers of fifteen (15) pound saturated roofing felt, each layer being mopped in place with hot asphalt. Flash this membrane up nine (9) inches high and seal it along all walls and around all columns. On top of this insulation install a wearing floor as described under "Concrete Wearing Floors" on page 12.

WOOD FLOOR—Two Layers of Corkboord—Both in Hot Asphalt—On top of the wood floor apply one layer of heavy asphalt paper with all edges lapped not less than 3″ and sealed with hot asphalt.

Proceed from this point as specified under "Concrete Floor."



COLUMNS

SQUARE CONCRETE COLUMNS—Prime columns with Armstrong's No. 3 Asphaltic Priming Paint. Apply Armstrong's Corkboard in hot asphalt. Apply second layer in hot asphalt and secure to first layer with treated hardwood skewers.

Finish the exposed cork surfaces as described under "Finishes."

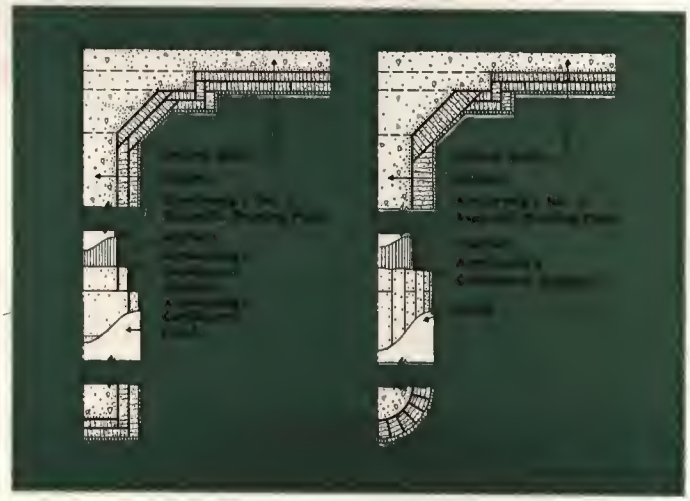
ROUND CONCRETE COLUMNS—Prime columns with Armstrong's No. 3 Asphaltic Priming Paint. Apply cork lagging, properly beveled to fit the column, in hot asphalt and toenail to abutting lags with treated hardwood skewers.

Finish the exposed cork surfaces as described under "Finishes."

SQUARE WOOD COLUMNS—Prime columns with Armstrong's No. 3 Asphaltic Priming Paint. Apply Armstrong's Corkboard in hot asphalt and secure it to the wood columns with galvanized nails of proper length, 3 per square foot. Apply second layer in hot asphalt and secure to first layer with treated hardwood skewers.

Finish the exposed surfaces as described under "Finishes."

STEEL COLUMNS—Remove all dirt and rust. Apply Armstrong's Corkboard in waterproof cement, propping in place until cement has set. Apply second layer in hot asphalt and secure to first layer with treated hardwood skewers.



NOTE: *All vertical corners shall be protected with suitable angle corner guards, securely fastened to the column before the finish is applied. Round columns shall have sheet metal guards.*

Methods of Installing Mineral Wool Board

Because Armstrong's Mineral Wool Board is strong and rigid, it can be handled in most instances in the same manner as Armstrong's Corkboard. Consequently, specifications for the erection of corkboard can be used in erecting mineral wool board, with the exception of the specifications which are noted on this page.

WALLS

MASONRY WALLS—Same specification as for corkboard.

WOOD WALLS—Same specification as for corkboard.

SOLID MINERAL WOOL BOARD WALLS—Same specification as for solid corkboard walls.

CEILINGS

CONCRETE—Two Layers of Mineral Wool Board—Both Applied In Hot Asphalt—Fasten to the underside of the concrete ceiling slab 1⅝" x — (*thickness of first layer of mineral wool board*) sleepers with suitable anchors. The anchors and sleepers must be spaced so that the mineral wool board will fit tightly between, but not more than 18" apart. The concrete ceiling slab must be thoroughly cleaned of all dust, dirt, loose plaster, etc., and be primed as described under "Asphaltic Priming Paint."

Apply the first layer of Armstrong's Mineral Wool Board in hot asphalt between the sleepers and toenail it to the sleepers with special galvanized nails. Apply the second layer at right angles to the first layer and in hot asphalt. Where the second layer crosses the sleepers, nail it with special galvanized nails and caps at each sleeper. Finish as described under "Finishes" on page 12.

NOTE: *Where only one layer of mineral wool board is used, apply it as described above for the first layer.*

WOOD DECK—Same specification as for corkboard.

WOOD—(Insulation Underneath)—Two Layers of Mineral Wool Board—Both In Hot Asphalt—Directly against the underside of the wood ceiling, tack a layer of heavy asphalt paper with edges lapped not less than 3".

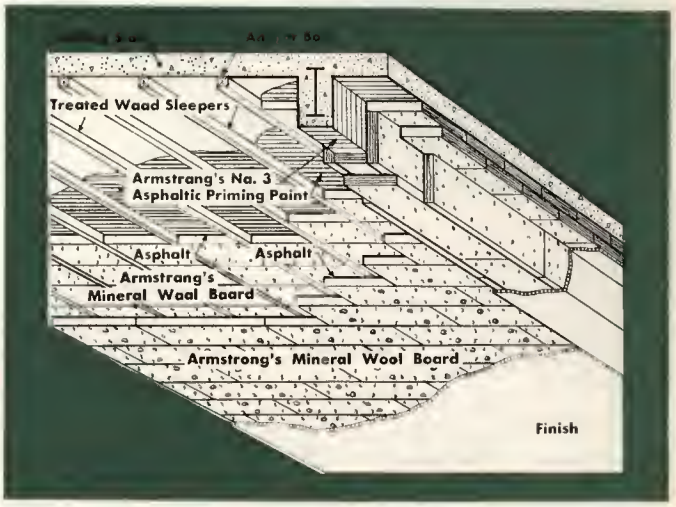
Apply the first layer of Armstrong's Mineral Wool Board in hot asphalt and secure it to the wood ceiling with special galvanized nails and caps. Apply the second layer in hot asphalt and secure it with nails and caps, the nails being at least ¾" longer than the combined thickness of the two layers. Finish as described under "Finishes" on page 12.

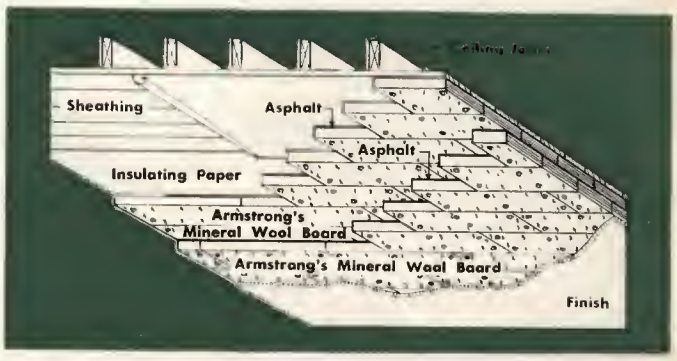
NOTE: *Where only one layer of mineral wool board is used, apply it as described above for the first layer.*

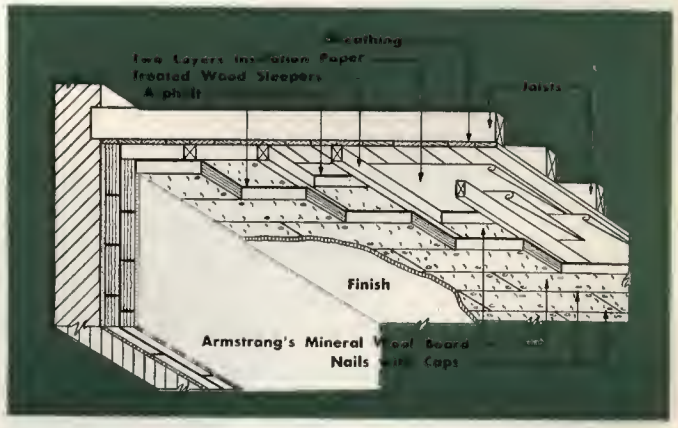
WOOD—(Insulation Underneath)—Two Layers of Mineral Wool Board—Both In Hot Asphalt—Freezer Room—Applies to Mineral Wool Board Only—Directly against the underside of the wood ceiling, tack two layers of waterproof insulating paper with edges lapped not less than 3". Fasten to the underside of the wood ceiling 1⅝" x — (thickness of the first layer of mineral wool board) wood sleepers with suitable anchors, spaced either 12" or 18" apart.

Apply the first layer of mineral wool board in hot asphalt and secure it to the wood ceiling with special galvanized nails and caps face nailed to the wood sheathing and toenailed to the wood sleepers. Apply the second layer in hot asphalt, prop to insure a good bond, and additionally secure it with treated wood skewers and nails and caps face nailed to the wood sleepers, the nails being at least ¾" longer than the second layer of insulation. Finish the exposed mineral wool board surfaces as described under "Finishes" on page 12.

For thicknesses requiring three layers of insulation, where the total thickness of the second and third layers will not permit face nailing a minimum of ¾" into the wood sleepers, additional wood sleepers must be erected in the same manner in the second layer running in opposite directions to those in the first layer and anchored to them.







FLOORS—Same specification as for corkboard.

COLUMNS—Same specification as for corkboard.

To provide positive protection against damaging vapor penetration, Armstrong engineers have developed a new insulation construction combining layers of Armstrong's Corkboard on the interior of the insulated area with a layer of Foamglas insulation as the outer shell.

This construction utilizes the best properties of both materials to their full extent. The outer shell of Foamglas performs a sealing function and provides high insulating value. Since this material is glass in cellular form, with each minute cell completely sealed and isolated from adjoining cells, it is absolutely moistureproof, vaporproof, and fireproof. The use of Foamglas in this construction thus fortifies the natural moisture resistance of corkboard and supplements its recognized high thermal efficiency, making one of the best insulation constructions yet devised. (See physical data table on page 3.)

RECOMMENDED THICKNESSES—COMBINATION

Temperature Range	*Foamglas plus Corkboard*		*Total*
Rooms 45° F. and above	3″	1″	4″
Rooms 35° to 45° F.	3″	1″	4″
Ripening Rooms	3″	2″	5″
Rooms 20° to 35° F.	3″	2″	5″
Rooms 5° to 20° F.	3″	3″	6″
Rooms —5° to 5° F.	3″	4″	7″
Rooms —15° to —5° F.	3″	5″	8″
Rooms —25° to —15° F.	3″	6″	9″

WALLS

MASONRY WALLS—Combination Foamglas and Corkboard—Both Materials Applied in Hot Asphalt

All masonry wall surfaces shall be thoroughly cleaned of dirt, dust, loose mortar, etc. Where necessary, wall surfaces shall be made true and even as described under "Back Plaster." After the plaster has dried, prime the wall as described under "Asphaltic Priming Paint" on page 6.

Apply the first layer of Foamglas directly to this surface in hot asphalt. The additional layer or layers of corkboard shall be applied by dipping in hot asphalt. Finish the exposed corkboard surface as described under "Finishes" on page 11.

NOTE: *It is not necessary to back plaster masonry walls of rooms to be held at temperatures above freezing.* (CAUTION: *In northern regions where extremely low outside temperatures are experienced for sustained periods, it is advisable to back plaster all masonry surfaces.*)

WOOD WALLS—Combination Foamglas and Corkboard—Both Materials in Hot Asphalt

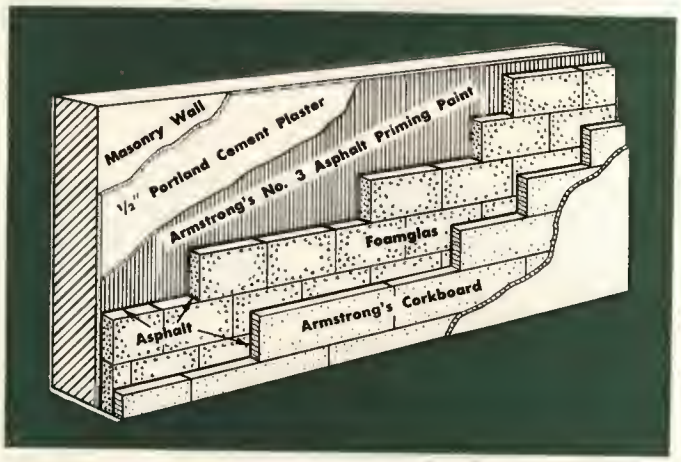
Although it is not necessary to support these with wood wall construction, the following specifications hold when they are to be applied to wood sheathed walls.

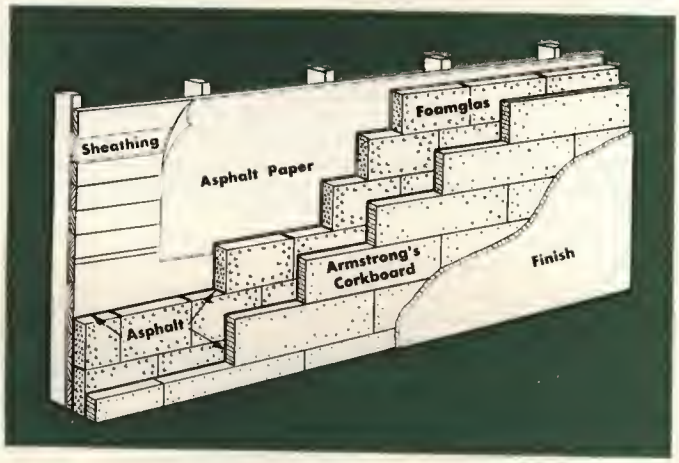
Directly against the wood sheathed walls tack one layer of heavy asphalt paper, with edges lapped not less than 3″. Apply the first layer of Foamglas directly to this paper in hot asphalt. The additional layer or layers of corkboard shall be applied in hot asphalt. Finish the exposed corkboard surface as described under "Finishes."

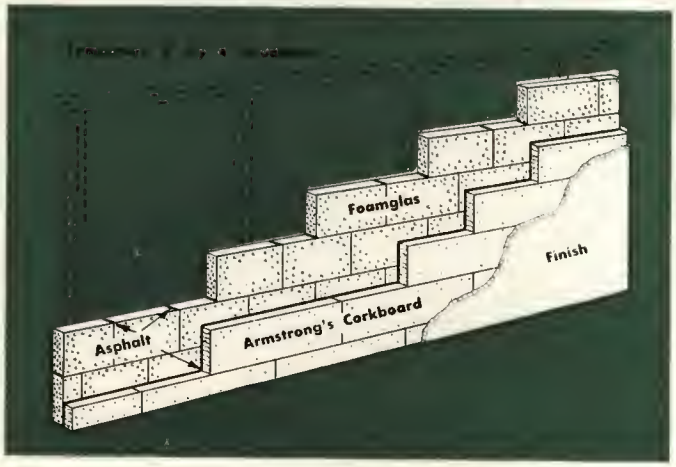
SOLID WALLS—Combination Foamglas and Corkboard—Both Materials in Hot Asphalt

Erect temporary 2″ x 4″ studs on 4′ to 6′ centers in alignment as a guide for the self-supporting solid partition or wall.

Erect the first layer of Foamglas on edge against the temporary studs, dipping the bottom and vertical edge in hot asphalt. The additional layer or layers of corkboard shall be applied in hot asphalt. Finish the exposed corkboard surface as described under "Finishes" on page 11.







CEILINGS

TEE-IRON CEILINGS—Two Layers of Foamglas—First Layer Fitted Between Tees; Second Layer on Top in Hot Asphalt

Space the tee-irons on 12″ or 18″ centers.

Before fitting the first layer of Foamglas, the tee-irons shall be given one good coat of Armstrong's No. 3 Asphaltic Priming Paint. Shape the blocks of Foamglas for the first layer so that they will snugly fit the tee-iron flanges. This can be accomplished by rubbing the blocks between two tee-iron sections (12″ or 18″ centers) securely spiked on a plank. Roughen surfaces of the tee-iron sections with a cold chisel to facilitate the cutting and forming of the Foamglas blocks.

Place the first layer of Foamglas between the tee-irons, dipping edges only in hot asphalt and fitting joints snugly. Apply the second layer directly on top of the first layer in hot asphalt. Flood the top surface with a heavy coat of hot asphalt.

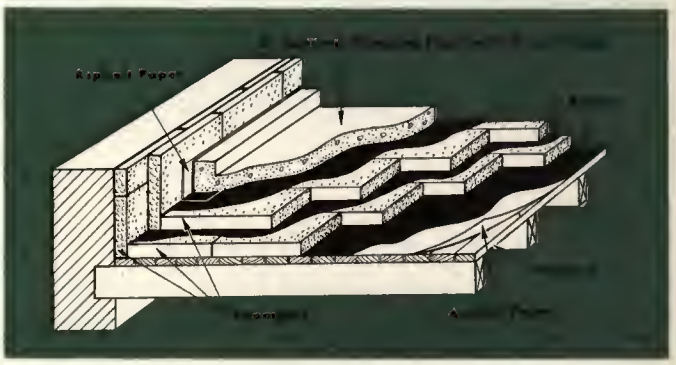
Finish the exposed under surface of Foamglas and tee-irons as described under "Finishes for Foamglas" on page 12.

FLOORS

WOOD FLOOR—Two Layers of Foamglas—Both in Hot Asphalt

Directly on top of the wood base floor apply one layer of heavy asphalt paper, securely tacked in place with all edges lapped not less than 3″ and sealed with asphalt.

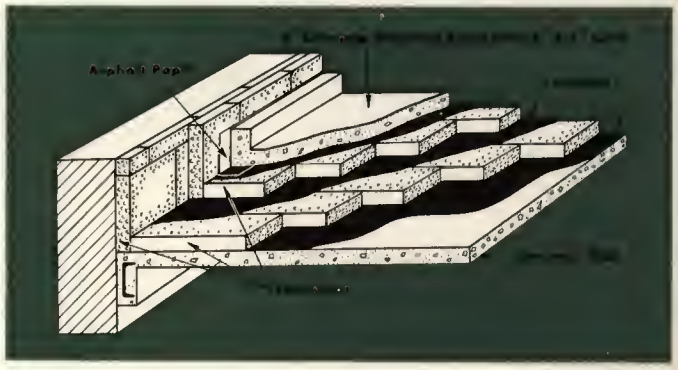
Flood or mop the surface of this paper with hot asphalt and lay the first layer of Foamglas in the asphalt. Flood the surface of the insulation with hot asphalt and lay the second layer in the asphalt. Flood the top surface with a heavy coat of hot asphalt. Install on top of the insulation a wearing floor with a 4″ x 4″ curb as described under "Concrete Wearing Floors."



CONCRETE FLOOR—Two Layers of Foamglas—Both in Hot Asphalt

The concrete floor on which the insulation is to be laid shall be reasonably smooth and level.

Flood or mop the concrete surface with hot asphalt and place the first layer of Foamglas in the asphalt. Flood the surface of the insulation with hot asphalt and place the second layer in the asphalt. Flood the top surface with a heavy coat of hot asphalt. Install on top of the insulation a wearing floor with a 4″ x 4″ curb as described under "Concrete Wearing Floors."



FINISHES FOR ARMSTRONG'S CORKBOARD

ASPHALT EMULSION FINISH—Finish the exposed corkboard surfaces with Armstrong's Asphalt Emulsion Finish, mixed 50 gals. Armstrong's Asphalt Emulsion, 115 lbs. asbestos floats, 275 lbs. (2¾ cu. ft.) dry, screened sand, and 15 gals. clean water. Apply directly to the corkboard surfaces in two coats, each approximately ⅛″ thick. Before applying first coat, point up all open joints, voids, or broken corners with this mixture. Do not apply second coat until first coat is hand dry. Trowel second coat smooth. Final thickness will be approximately ⅛″.

ARMSTRONG'S S. P. EMULSION FINISH (READY MIXED)—(Smooth finish) Apply Armstrong's S. P. Emulsion directly to the surface of the corkboard and trowel smooth.

(Sand finish) Apply to the exposed corkboard surfaces Armstrong's Asphalt Emulsion, mixed 50 gals. S. P. Emulsion, 175 lbs. (1¾ cu. ft.) dry, screened sand, and a small amount of water. Apply as described under "Armstrong's Asphalt Emulsion Finish."

ARMSTRONG'S MASTIC FINISH—This finish, approximately ⅛" thick, is ironed on Armstrong's Corkboard at the factory. Fill and seal all joints with mastic seam filler. Finish all convex corners with Armstrong's Mastic Finish Quarter Round.

NOTE: *Do not apply any emulsion finishes when the temperature is below 40° F. In cold weather, provide heat in areas where the finish is being applied.*

NOTE: *Asphalt Emulsion finishes should not be used where they are subject to temperatures lower than 25° F. below zero.*

PORTLAND CEMENT FINISH—Use portland cement plaster mixed 1 part portland cement, 3 parts clean, screened sand, and 5% hydrated lime. Apply in two coats each approx. ¼" thick. Key first coat thoroughly to insulation and scratch. After first coat is dry, apply second coat and bring to even surface with straightedge and trowel or float smooth. Minimize cracking by scoring in 4' squares, with score marks which penetrate to first coat. Protect outside corners with metal corner beads. Note: *The finish can be strengthened, and cracking further minimized by use of galvanized metal lath or wire netting securely fastened to surface of insulation with 1¼" galvanized staples or short, large-headed nails.*

FINISHES FOR ARMSTRONG'S MINERAL WOOL BOARD

ASPHALT EMULSION FINISHES—Apply to mineral wool board walls or ceilings in the same manner as described under "Finishes for Armstrong's Corkboard." Before applying brush mineral wool board lightly to remove loose particles and dust.

PORTLAND CEMENT FINISH—(For use on mineral wool board walls and columns, NEVER ON CEILINGS) Prime the mineral wool board surfaces with a cement wash consisting of equal parts of portland cement and water. Follow immediately with the first coat of portland cement finish mixed and applied as described above under "Finishes for Armstrong's Corkboard."

FINISHES FOR FOAMGLAS

NOTE: *Do not use portland cement plaster on Foamglas surfaces.*

ASPHALT EMULSION FINISH—Finish the exposed Foamglas surfaces with Armstrong's Asphalt Emulsion Finish, mixed 50 gals. Armstrong's Asphalt Emulsion, 115 lbs. asbestos floats, and 15 gals. clean water. Apply directly to the Foamglas surfaces in two coats, each approximately ⅛" thick. Before applying the first coat, point up all open joints, voids, or broken corners with this mixture. Apply second coat when first coat is hand dry. Trowel second coat smooth. Final thickness will be approximately ⅛".

ARMSTRONG'S S. P. EMULSION FINISH (READY MIXED)—Smooth Finish—Apply Armstrong's S. P. Emulsion directly to the exposed Foamglas surfaces in two coats, each approximately ⅛" thick, and trowel smooth.

NOTE: *Do not apply any asphalt emulsion finish when the temperature is below 40° F. In cold weather, provide heat in the area where the finish is being applied.*

NOTE: *Asphalt Emulsion finishes should not be used where they are subject to temperatures lower than 25° F. below zero.*

PAINTING

The finish (emulsion or portland cement plaster) should be thoroughly dry and clean of dirt, grease, loose mortar, etc., before painting. This dirt can usually be removed by brushing.

ARMSTRONG'S ALUMINUM PAINT—Apply in two coats, flowing on each coat. Allow the first coat to dry before the second coat is applied. To prevent the aluminum paint from going out of solution it should not be mixed until it is to be used.

CONCRETE WEARING FLOORS

CONCRETE WEARING FLOOR—Over the insulation install a monolithic concrete wearing floor 3" thick at the low point (unless otherwise specified) sloped 1" in 10' 0". (Slope should be increased for floors subject to extreme moisture conditions, as in milk rooms, ice cream plants, etc.)
The concrete shall be mixed 1 part portland cement, 2 parts clean, sharp sand, 3 parts crushed stone. The concrete shall be floated and troweled to a smooth surface and slightly coved at all vertical surfaces to form easily cleaned corners.

INDUSTRIAL

Factory and mill roofs are commonly insulated (1) to maintain the exact conditions of temperature and humidity which are necessary in the processing of many materials, and (2) to prevent the damage to goods, structure, and machinery caused by condensation and the resultant drip which occurs when moist warm air comes in contact with a cold ceiling.

The amount of heat loss through ordinary roof construction is considerable and can be greatly reduced by application of roof insulation. For example:

> Transmission per sq. ft. for 70° F. difference in temperature through 4″ concrete slab deck covered with standard roofing, per hour .....50.4 Btu.
>
> Transmission for the same construction and conditions with the addition of 2″ of Armstrong's Corkboard on the roof, per hour .....8.4 Btu.

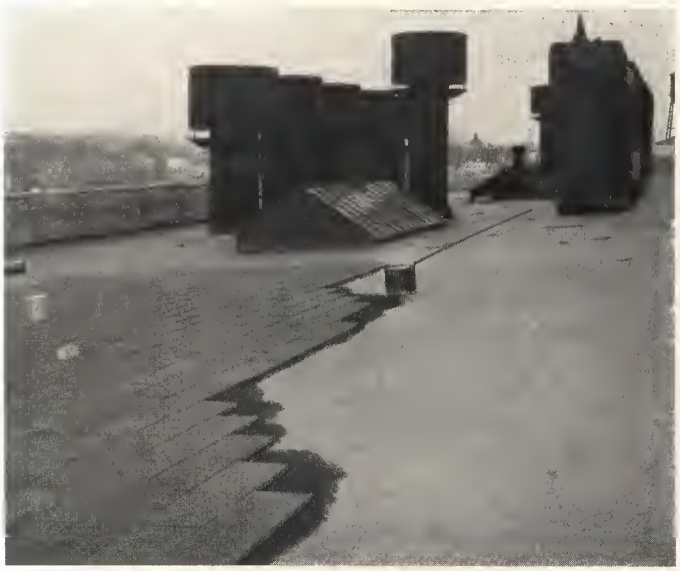
In this case, the heat flow was reduced 83% with the addition of 2″ of Armstrong's Corkboard. This means the ceiling can be kept at or very near room temperature, and condensation is overcome.

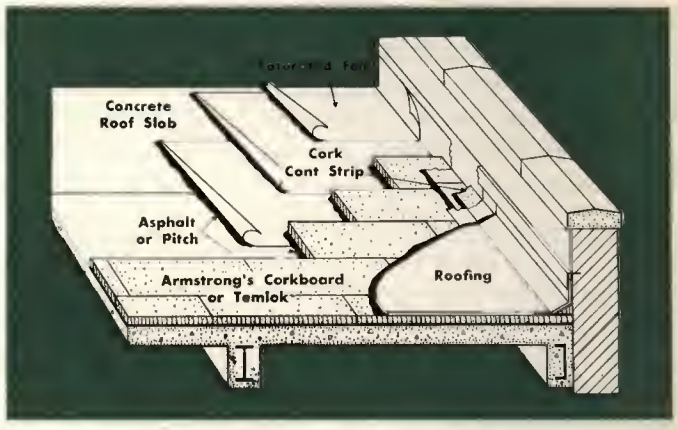
Large temperature differentials and high humidity in industrial installations make necessary an exceptionally durable, highly moisture-resistant insulating material. Armstrong's Corkboard is recommended for such applications because it offers maximum insulating efficiency, resistance to moisture, and structural stability.

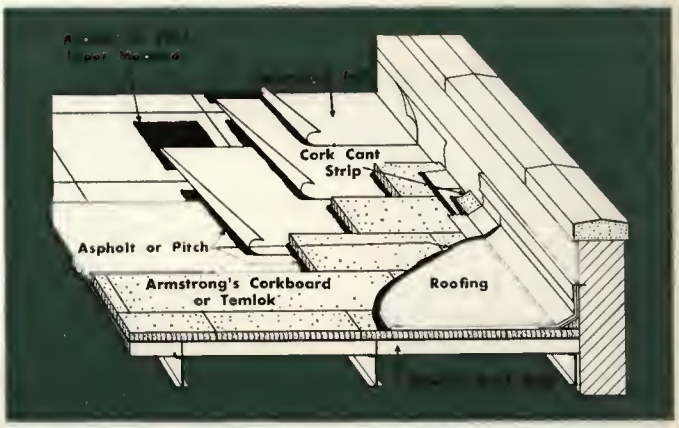
COMFORT

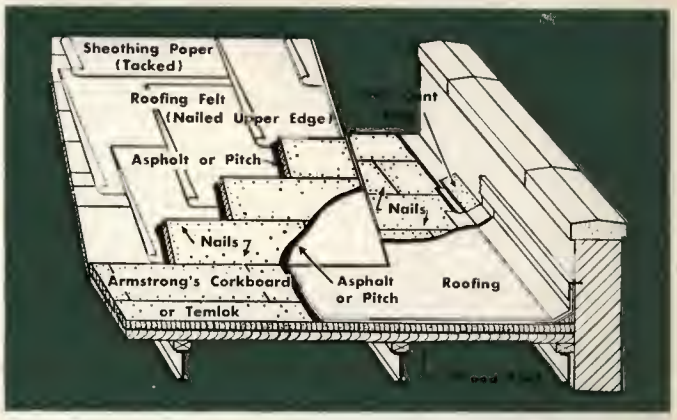
Roofs of office buildings, apartments, commercial structures, and homes are insulated (1) to increase the comfort of tenants and patrons by making the structure cooler in summer, warmer in winter, and (2) to save fuel in winter, and lower the cost of operating air-conditioning systems in summer.

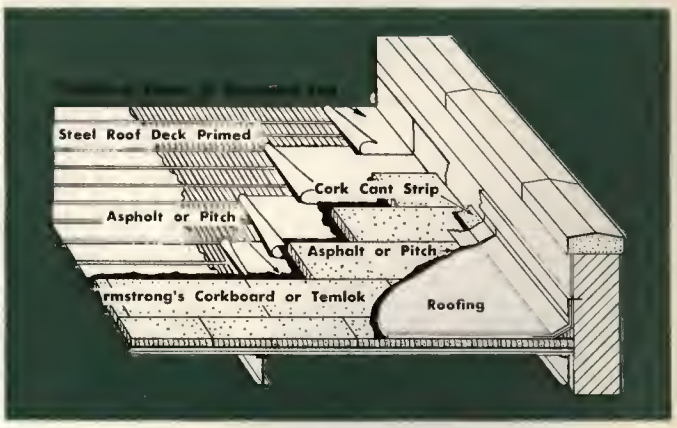
For this type of job, where normal conditions of moisture are encountered, Armstrong's Temlok fiberboard insulation is highly satisfactory. Made of long-leaf Southern pine, this material is highly efficient and has natural moisture resistance.











The air-conditioning system, if it is to operate satisfactorily, must be able to deliver its conditioned air with a minimum of heat or refrigeration loss through the duct walls. Such loss causes a variation in delivered air temperature at different points in the system—a factor of great importance.

Armstrong's Corkboard insulation properly applied to ducts and other air-conditioning apparatus, such as air washers and fan housings, will greatly improve the overall thermal efficiency and the operating characteristics of the system. It will also prevent moisture condensation and consequent drip from air-conditioning duct and equipment surfaces.

GENERAL RECOMMENDATIONS

The engineer who designs an air-conditioning system can best specify the thickness of insulation which will assure efficient performance of the equipment.

Apply corkboard insulation in one layer. For moderate temperature differences and short ducts, use 1-in. corkboard on supply ducts, leaving return ducts bare.

For heavy duty, and on long ducts or on fans and dehumidifiers, use 1½-in. or 2-in. corkboard with 1-in thickness on return ducts. Where ducts are constructed with standing seams, use a thickness of corkboard which will cover the seams.

ARMSTRONG'S CORKBOARD

DI Corkboard—12″ x 36″ x ½″. Coated on one side with a moisture-resistant asphalt plastic film. It is used for the insulation of air-conditioning ducts where the main purpose is to prevent damaging condensation.

Standard Corkboard—12″ x 36″, 18″ x 36″, and 24″ x 36″ sizes, and 1″, 1½″, and 2″ thicknesses are most commonly used to minimize heat losses as well as prevent damaging condensation in air-conditioning equipment.

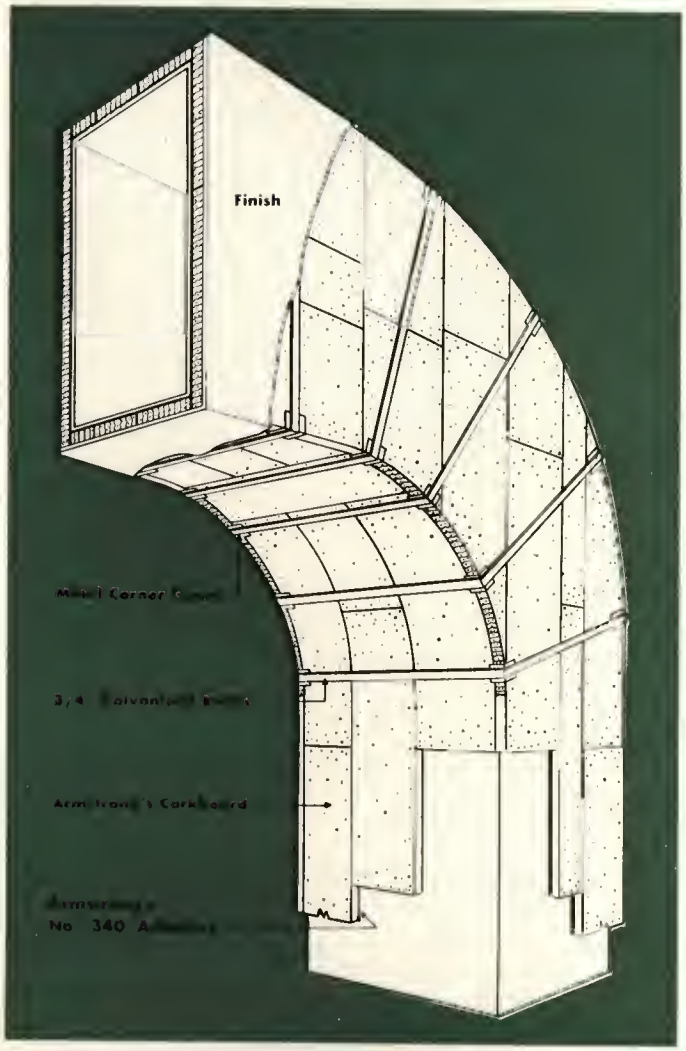
APPLICATION

Adhesive Method—Surfaces must be clean and free from dust, dirt, grease, and moisture. Spread Armstrong's No. 340 Adhesive over entire face of corkboard approximately 1/16″ thick and apply corkboard to metal surface. Additionally secure corkboard with metal bands or copper-clad wire ties 12″ on center, using metal corner guards. Point all joints with asphalt plastic.

Mechanical Method—Duct surfaces shall be clean and free from dust, dirt, grease, and moisture. Apply suitable metal fasteners beforehand directly to the duct, using proper erection adhesive. Apply corkboard directly to duct and secure fasteners through corkboard.

Hot Asphalt Method—Surfaces must be clean and free from dust, dirt, grease, and moisture. Apply Armstrong's No. 4 Asphaltic Paint to metal surfaces. Dip corkboard in hot asphalt and apply to duct. Additionally support corkboard with metal bands or copper-clad wire ties 12″ on center, using metal corner guards. Point all joints with asphalt plastic.

NOTE: *This method may prove impractical in cramped quarters or where fumes and smoke from the heating kettle are objectionable, as in an occupied building.*



FINISHES FOR INDOOR DUCTS

Exposed Indoor Ducts and Equipment

Plaster Finish—Cover insulated surfaces with 2″ mesh galvanized wire mesh stapled and laced in place. All exposed corners of the insulation shall be fitted with metal corner beads. Apply asbestos cement plaster in 2 coats not to exceed ½″ in thickness. (Mix ⅓ portland cement, ⅔ asbestos cement.) When dry, paint if desired.

Canvas Finish—Over two thicknesses of rosin-sized paper apply 8-oz. canvas with blind-sewed seams. Size canvas and paint with lead and oil paint, if desired.

Asphalt Emulsion Finish—Apply 2 coats of Armstrong's Asphalt Emulsion Finish to a total thickness of not more than ¼″. When dry, paint if desired, using aluminum for first coat.

Concealed Indoor Ducts—No finish required.

OUTDOOR DUCTS

Surfaces must be clean and free from dust, dirt, grease, and moisture. Apply Armstrong's Corkboard either by the hot asphalt or adhesive method, as described under "Application," at left. Finish as described under "Finishes, Outdoor Equipment," on page 16.

Tanks and vessels operating at moderate or low temperatures require insulation to minimize refrigeration costs, to permit accurate control of processing temperatures, to prevent condensation of moisture on the outside or inside tank surfaces, or, as is usually the case, for a combination of these reasons. Vessels of any size or shape can be insulated with cork lagging and corkboard applied in a thickness to meet any temperature requirement.

NOTE: *Any brackets, supports, or attachments on the vessels shall be insulated where possible for a distance of 3' from the outside of insulation on vessels. Insulation shall be of same thickness and finish as on equipment.*

Recommended Thicknesses of Cork Logging ond Corkboord Insuiotion

Temperoture	Thickness
−40° to −25° F.	9″
−25° to −10° F.	8″
−10° to + 5° F.	6″
5° to 20° F.	5″
20° to 35° F.	4″
35° to 50° F.	3″
50° to 65° F.	2″

EQUIPMENT OVER 54″ IN DIAMETER

Cylindrical tanks, towers, vessels, and equipment over 54″ in diameter shall be insulated with multiple layers of corkboard, scored and bent to fit the contour of the vessel. After the surface of the vessel has been primed with Armstrong's No. 4 Asphaltic Paint, each layer of corkboard shall be applied in hot asphalt or waterproof cement, or adhesive. The first layer (2″ thick corkboard) shall be banded immediately after erection with ¾″ wide x 25 gauge galvanized bands spaced on 12″ centers, drawn tight, and securely locked in place with at least two clips per band.

Successive layers of insulation shall be applied as described for the first layer and held firmly in place with treated hardwood skewers. Band for each layer as described for the first layer.

On vessels without flanges, corkboard shall conform to the contours of the heads, and at the intersection of the heads and the shell the insulation shall have interlocking joints and shall be cut to form neat rounded corners, with a thickness of insulation equal to the thickness on the shell.

FINISHES (INDOOR EQUIPMENT)

Asphoit Emulsion Finish—After the insulation has been applied to the required thickness, it should be finished with Armstrong's Asphalt Emulsion Finish applied in two coats. First point up all joints and cracks of the insulation with Armstrong's SP Emulsion. Then apply a coat of Armstrong's SP Emulsion approximately ⅛″ thick directly to the insulation and allow to dry thoroughly. Then apply a second coat of Armstrong's SP Emulsion approximately ⅛″ thick and trowel smooth.

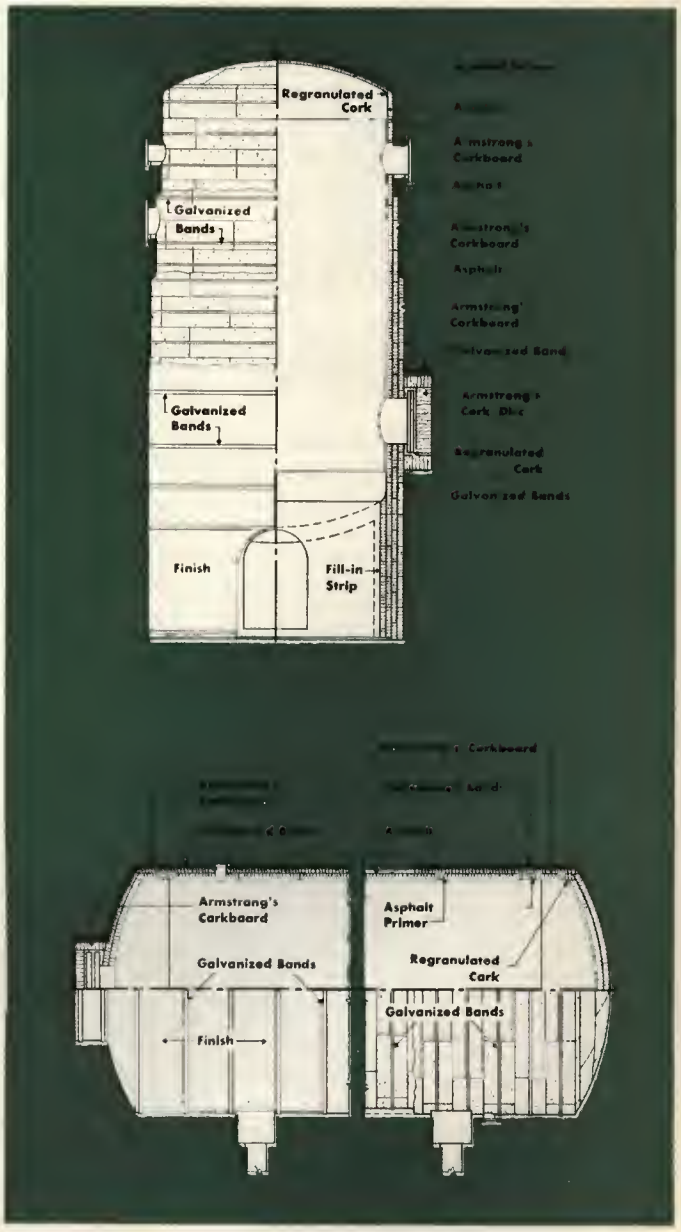
Alternote—First point up all joints and cracks in the insulation with Armstrong's SP Emulsion. Over the insulation apply 1″ hexagonal wire mesh drawn tight and laced at all laps. Then apply ½″ of asbestos cement plaster in two coats. The first coat shall be keyed through the wire mesh, scratched, and allowed to dry before the second coat is applied. The mortar for both coats shall be mixed ⅓ portland cement and ⅔ asbestos cement. The finish coat shall be trowcled smooth.

NOTE: *Where equipment is located outdoors, finish to be as specified on following page.*

EQUIPMENT UNDER 54″ IN DIAMETER

Cylindrical coolers, accumulators, and similar vessels and tanks under 54″ in diameter shall be insulated with a single thickness of cork lagging and discs cut to fit the diameter of the vessel. Lags shall be applied with Armstrong's Waterproof Cement on all joints and erected with joints staggered.

Lags on body or over flanges shall extend beyond the body or flange heads sufficiently to enclose the cork discs which cover the



heads of the vessel. All spaces between the equipment and the insulation shall be filled with brine putty or regranulated cork to eliminate all voids.

FINISH (INDOOR EQUIPMENT)—Finish shall be asphalt mastic ironed on both inner and outer surfaces of the insulation at the factory. Cork lags shall be securely held in place with 1¼" x 18 ga. galvanized bands drawn tight with angle clips and bolts riveted to the bands and spaced approximately on 12" centers. All joints and chipped edges shall be filled and sealed with Armstrong's Seam Filler, and the entire surface shall be given a heavy coat of Armstrong's Asphalt Paint.

NOTE: *Where equipment is located outdoors, finish to be as specified below.*

MANHOLES

Manholes shall be insulated with cork lagging and discs and in same manner as described for the insulation of "Equipment Under 54" in Diameter." Where manholes and flanged heads are to be removable, the cork lags and discs shall be assembled and installed in half sections. Such insulation shall be protected with sheet metal covers and the covers shall be so designed as to be removable.

FINISHES FOR OUTDOOR EQUIPMENT

All insulated equipment located outdoors must be protected against the weather. Wherever 1¼" x 18 ga. galvanized bands with angle clips and bolts have been specified, omit them and substitute ¾" x 25 ga. galvanized bands and clips on 9" centers.

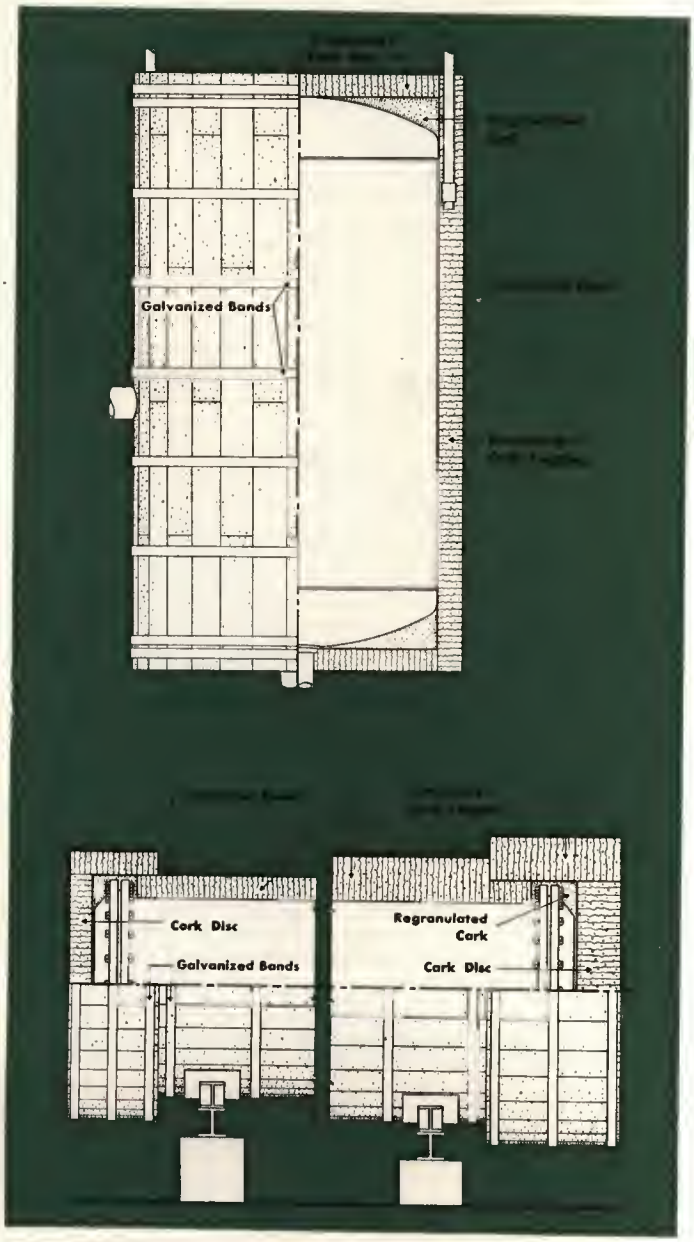
Armstrong's Weatherproof Plastic Finish—The weatherproof finish shall be Armstrong's Weatherproof Plastic approximately ⅛" thick reinforced with Armstrong's Saturated Membrane.

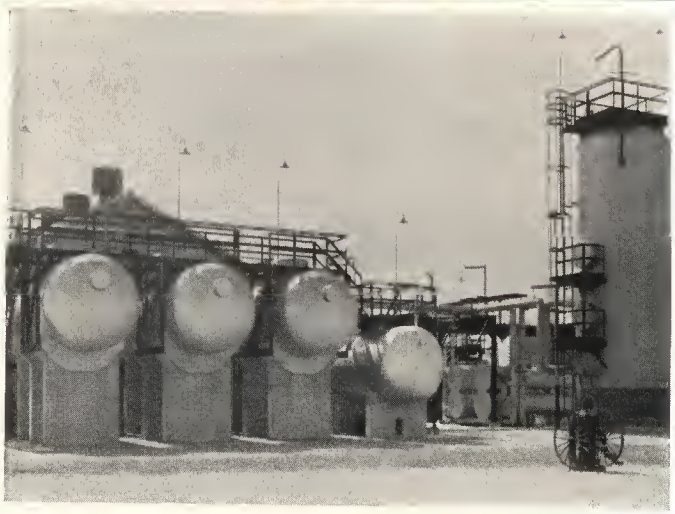
After the insulation has been applied to the required thickness, a coat of Armstrong's Weatherproof Plastic Finish 1/16" thick shall be applied directly to the insulation, and while it is still tacky a layer of Armstrong's Saturated Membrane shall be pressed into the plastic with a trowel. After the solvent has evaporated from the first coat, a second coat approximately 1/16" thick shall be applied to fill the voids and entirely cover the fabric surface.

Alternate—After the cork insulation has been applied to the required thickness, coat the outside surface with a heavy mopping of hot asphalt. Then apply in hot asphalt a layer of heavy asphalt roofing paper properly lapped and sealed in all joints. (For high vertical equipment substitute Armstrong's Insulmastic, see below.) Paper shall be wiped clean of all dust and primed on the tank side with asphaltic paint before erection. The paper shall be held in place with 1¼" x 18 ga. galvanized bands equipped with necessary clips. Clips for tanks over 54" in diameter shall be galvanized Tecktonius clips, and for tanks under 54" in diameter angle clips with take-up bolts shall be used. Bands shall be placed not more than 12" on centers on vertical and horizontal tanks.

Armstrong's Insulmastic Finish—Where a fire-resistant finish is desired, apply Armstrong's Insulmastic in two coats, each approximately ⅛" thick. Dries to a final thickness of ⅛".

On high towers, spherical and cylindrical vessels, elevated lines, etc., 1" galvanized wire mesh should be secured directly to the insulation before Insulmastic is applied.

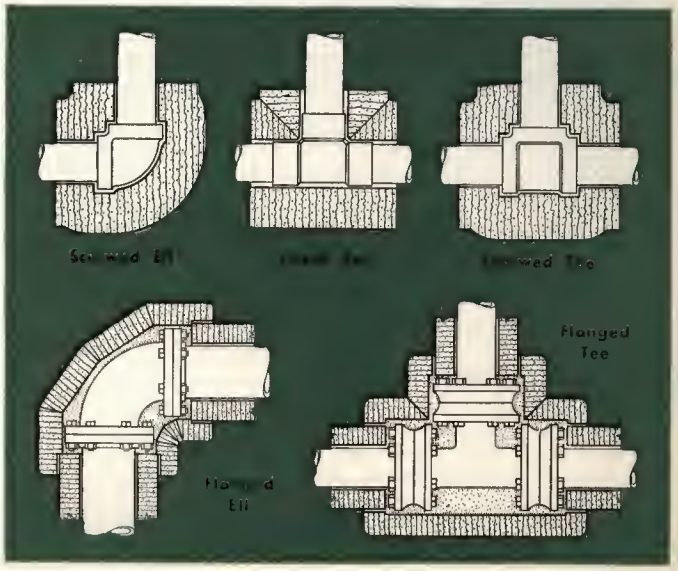




Armstrong's Cork Covering is made from clean granules of cork compressed and baked in molds. After baking, pipe and fitting covers are machined to accurate size and finished with a heavy mastic coating which provides a seal against air and moisture penetration. The use of Armstrong's Cork Covering on cold lines prevents from 80 to more than 90% of the refrigeration loss occurring when lines are left uninsulated and as a result will pay for itself in a few years. It also eliminates condensation and drip with consequent rusting and depreciation of the pipe on lines which operate at above-freezing temperatures and are located in warm areas.

ADVANTAGES OF ARMSTRONG'S CORK COVERING

1—High insulating efficiency.
2—High moisture resistance.
3—Made in exact sizes for easy application to pipes and fittings leaving no space between the cold surfaces and the insulation where frost could accumulate.
4—Provides the same lasting and efficient protection for fittings as on straight pipe runs.
5—Pipe covering sections and fitting covers are rigid and will not sag, allowing space for frost accumulation between insulation and pipe or fitting.
6—Fire resistant.
7—Neat finished appearance.
8—Reasonable cost of material and application.



THICKNESSES

Armstrong's Cork Covering is manufactured in three regular thicknesses and in special thicknesses to meet different service conditions. As is shown below, the actual thickness varies with the pipe size between the minimum and maximum given in each case. All thicknesses are made to fit any size of standard pipe and copper tubing from ¼" up and are furnished in 36" lengths.

1—Heavy Duty Thickness (formerly Special Thick Brine)—2.63 to 4.00 inches thick, for cold lines from 0 to −25° F., or where the surrounding temperatures are unusually high, as in boiler rooms or adjacent to steam lines, or in tunnels or pipe shafts.

2—Standard Thickness (formerly Brine Thickness)—1.70 to 3.00 inches thick, for brine, ammonia, carbon dioxide, or low-temperature gas or liquid lines from 0 to 35° F., or where the maximum temperature difference between refrigerant and surrounding air is less than 100° F.

3—Light Duty Thickness (formerly Ice Water Thickness)—1.20 to 1.93 inches thick, for use on refrigerated drinking water or other cold lines, and for general application where accurate temperatures of 35° and upward are to be maintained.

FITTING COVERS

Fitting covers are made in the same thicknesses as pipe covering and are designed for all types of ells, tees, valves, flanges, unions, etc. These fitting covers are rigid and will not sag. They are made to join accurately with the pipe coverings, thus providing the same dependable protection for fittings that straight lengths of covering provide for all other parts of the line.

VALVES AND FLANGED FITTINGS

The insulation on valves must not cover the stuffing box. This may require cutting the bonnet insulation.

Voids between fittings and covering are filled with molten paraffin and granulated cork (Fitting Filler) poured through 1¼" holes several inches apart on the high side of the cover. After filling, the holes are plugged with corks provided for the purpose.

Close Fittings—Where fittings are installed with close nipples or flange-to-flange, the fitting covers must be cut. Do not make entire cut on one fitting cover but cut equally on both. In the case of flanged fittings, provide a bearing for the two cut ends by placing a ring of covering over the flanges where the fitting covers join.

WELDED FITTINGS

Sectional covering is provided for all sizes of weld ells up to 6" pipe size. This includes both 45° and 90° ells. Sectional covering is also fabricated at the factory for weld tees, although these are usually made on the job from pipe covering.

PIPE BENDS

Pipe bends are insulated by mitering regular sectional covering to fit the bend, using pieces small enough to give approximately straightline contact between the pipe and the covering.

HANGERS

Hangers must be on the outside of the covering and not in contact with the pipe. Frost will collect around the supporting rod of a hanger attached directly to the pipe and will eventually work under and split off the covering at that point. Use a 12 to 18 gauge sheet iron shield between the hanger and covering. Two types of hangers are illustrated, at right: the strap hanger for single pipes and the trapeze hanger for two or more pipes.

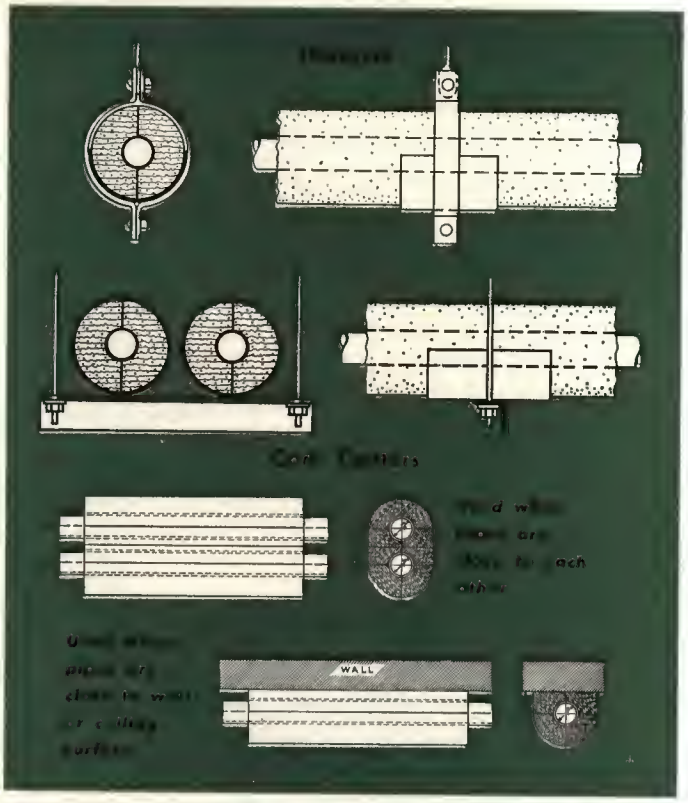
PIPE SPACING

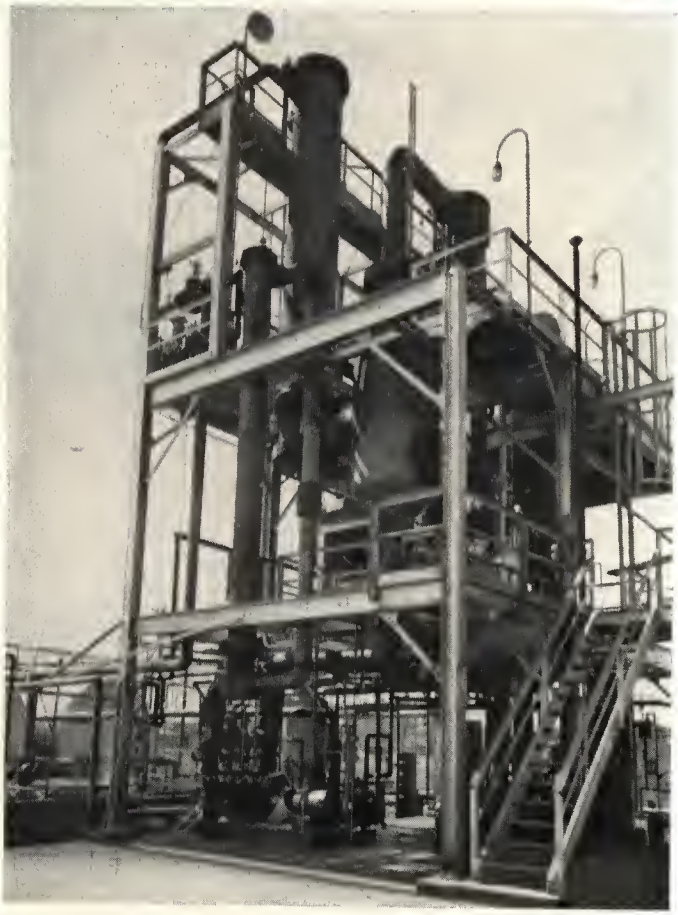
The table below gives the proper spacing of cold lines to allow necessary working space between them without cutting away any of the cork covering. Armstrong's Cork Centers should be used on pipes that are too close to each other or to adjacent wall or ceiling surfaces for the regular covering.

PIPE SPACING TABLE

Covering, Fitting Types, Pipe Sizes	Between Surfaces of Parallel Bare Pipes (inches)	Between Surfaces of Bare Pipe and Adjacent Surface (inches)
Heavy Duty Thickness:		
Screwed Fittings, 1/4" to 3" incl.	10	8
Screwed Fittings, over 3"	18	12
Flanged Fittings	18	12
Standard Thickness:		
Screwed Fittings, 1/4" to 6" incl.	8	6
Screwed Fittings, over 6"	14	8
Flanged Fittings	14	8
Light Duty Thickness:		
Screwed Fittings, 1/4" to 6" incl.	6	4
Screwed Fittings, over 6"	10	5
Flanged Fittings	10	5

Sufficient materials for the proper application of Armstrong's Cork Covering are furnished with the material at no extra charge. They include: Armstrong's Waterproof Cement, for cementing all joints; copper-clad steel wire, for holding the covering in place; galvanized bands and clips, frequently used instead of wire on the larger sizes of pipe covering; Armstrong's Seam Filler, for filling seams, chipped edges, raw ends of covering, etc.; Armstrong's Cork Covering Paint, for painting the outside of the covering; Armstrong's Fitting Filler (crude wax and cork particles), for filling voids between fittings and fitting covers; corks, for plugging the pouring holes in fitting covers.





SPECIFICATIONS FOR APPLICATION OF ARMSTRONG'S CORK COVERING

All lines must test tight. Select Armstrong's Cork Covering and Fitting Covers as outlined in the following schedule:

Below −25° F.	Special Thicknesses
−25 to 0° F.	Heavy Duty Thickness
0 to +35° F.	Standard Thickness
Above 35° F.	Light Duty Thickness

Pipes must be free from plaster, rust, and moisture before applying insulation. Sectional covering shall be applied with end joints broken by starting with one half and one full length piece and longitudinal joints shall be on top and bottom of pipe. Use Armstrong's Waterproof Cement on all joints and wire or band in place with at least six copper-clad wires or ½" galvanized bands per 36" section. All fitting covers are supplied ready for application. Use Armstrong's Waterproof Cement on all fitting cover joints and secure with not less than four copper-clad wires or galvanized bands on screwed fittings and not less than six wires or bands on flanged fittings. Fill all spaces between covers and fittings with Armstrong's Fitting Filler.

NOTE: *With screwed fittings apply fitting covers first; with flanged fittings apply straight pipe covering first.*

Fill all seams and chipped edges with Armstrong's Seam Filler. Apply one good coat of Armstrong's Cork Covering Paint.

Where Armstrong's Cork Lagging is to be applied instead of sectional covering or fitting covers, apply lagging with end joints broken by starting with alternate 18- and 36-inch lengths. Use Armstrong's Waterproof Cement on all joints and secure with copper-clad wires or galvanized bands spaced six inches or less.

NOTE 1: *When pipe passes through an insulated wall into a refrigerated room, the covering shall extend into the refrigerated room at least one inch beyond the wall.*

NOTE 2: *Wall and floor openings must be made large enough to allow for the installation of a full thickness of covering.*

FINISHES FOR ARMSTRONG'S CORK COVERING

Armstrong's Cork Covering Paint—Fill all joints and chipped edges and smooth raw edges of fitting covers with Armstrong's Seam Filler. Apply Armstrong's Cork Covering Paint over entire pipe covering for inside dry rooms.

Canvas Finish—Apply separately one or two layers of 25-lb. rosin-sized paper as specified, lapping edges one inch and staple in place. Stretch 8-oz. canvas tight and sew all seams, three stitches per inch, with four-cord linen sewing twine. All seams if possible to be on top and blind stitched where exposed. Size with good cold-water sizing. When the sizing is dry, apply two coats lead and oil paint of color specified.

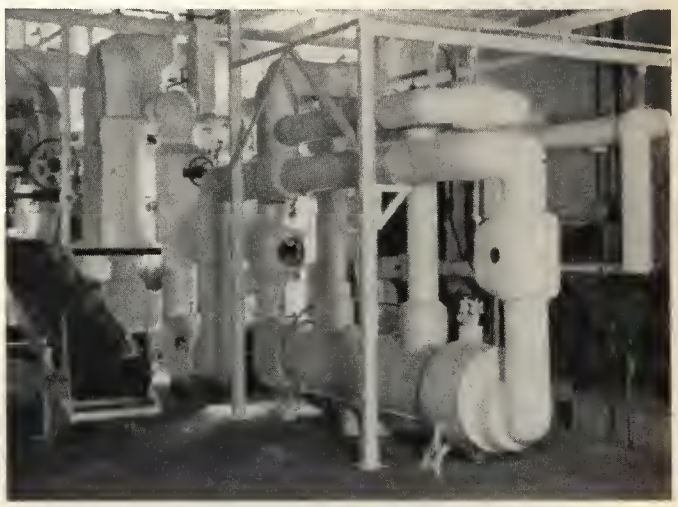
Tape Finish—Fill all joints and chipped edges and smooth raw edges of fitting covers with Armstrong's Seam Filler. Apply membrane tape to fitting covers, using combination of wrapping and stripping to cover all surfaces. Crimp tape over shoulders of fitting covers and fasten loose ends at junction of fitting cover and straight pipe covering by wrapping on straight pipe covering. Wrap tape spirally around straight pipe covering, lapping edges ½ in. and drawing tape tight as it is wrapped. Use 3- to 6-in. tape. Finish with one good coat of Armstrong's Cork Covering Paint.

The following finishes are recommended for lines exposed to weather, wet or humid atmospheres, or running through refrigerated rooms or pipe shafts.

Sectional Pipe Covering—Apply one layer of two-ply roofing paper, lapping at least 2 in. and butting the body of flanged fitting covers and extending over shoulders of screwed fitting covers. Make lap to form a watershed, seal, and secure with coppered staples. All longitudinal laps to be on the side. Wire weatherproofing in place with No. 14 copper-clad wire or ½" galvanized bands on 9-in. centers. Finish with one coat of Armstrong's Cork Covering Paint

Fitting Covers—Apply two coats of Armstrong's Weatherproofing Plastic each approx. 1/16" thick, reinforcing between coats with Armstrong's Saturated Membrane while first coat is still tacky. Bring plastic and reinforcing over edges of fitting covers to form a seal with straight pipe covering.

Should a specific problem arise which calls for the use of a finish other than those covered in the preceding paragraphs, it should be referred to the Armstrong Office serving your locality. Armstrong engineers will be glad to offer their assistance in recommending the proper finish to meet your requirements.



ARMSTRONG'S INSULATION SUNDRIES

The importance of using correct materials to erect, finish, and maintain Armstrong's insulations cannot be overstressed.

Efficient erection, thorough waterproofing and airproofing, lasting durability, and neatness in erecting Armstrong's Corkboard, Cork Covering and Lagging, Mineral Wool Board and Foamglas demand materials created for the purpose.

Armstrong's Insulation Sundries are the result of years of experiment and research in the most effective methods of installing insulation. Each product has been developed to meet a special need. Armstrong engineers are constantly striving to improve methods and materials for the erection and operation of cold rooms.

ERECTION MATERIALS

Armstrong's No. 3 Asphaltic Paint—Asphaltic primer for masonry, concrete, or portland cement plaster surfaces. Prevents air- and moisture-infiltration and provides strong bond when insulation is erected in hot asphalt. Unaffected by temperature changes and strengthens with age. Not a finish. Coverage—100 sq. ft./gal. sprayed (2 coats) or brushed (1 coat); 8½ lbs./gal. Containers: 1-, 5-, and 10-gal. pails and 30-gal. drums.

Armstrong's No. 4 Asphaltic Paint—Asphaltic primer for steel and other metallic surfaces prior to applying insulation in hot asphalt or waterproof adhesives; noncorrosive, rust inhibiting. Extremely impervious to moisture and resistant to acids, alkalies, and chemical fumes; used to protect masonry, concrete, steel, and other metals. Coverage—approx. 150 sq. ft./gal.; 9 lbs./gal. Containers: 1-, 5-, and 10-gal. pails; 30-gal. drums.

Armstrong's Erection Asphalt—Asphalt for erecting insulation in cold rooms; 180° to 200° F. melting point, odorless. Durable, chemically stable, minimum susceptibility to temperature change, and handles well. Provides strong, permanent air seal for floor, walls, and ceiling installations. Coverage—4/10 lb./sq. ft./layer. Containers: 450-lb. drums (8.6 cu. ft.).

Armstrong's Cold Erection Plastic — Use where hot asphalt is impractical; properties similar to Armstrong's Erection Asphalt except for stronger odor. Not a finish. Coverage—25 sq. ft./gal. in 1/10" coat; 11½ lbs./gal. Containers: 1-, 5-, and 10-gal. pails; 30- and 55-gal. drums.

Armstrong's Galvanized Nails—Hot-galvanized nails with ½" heads and thin shanks for first layer of insulation erection. Coverage—2/sq. ft. on walls and 3/sq. ft. on ceilings. Sizes: 1¾" x No. 10, 12,000 per 100-lb. keg; 2½" x No. 10, 9,000; 3" x No. 9, 6,000; 4" x No. 9, 4,500; 5½" x No. 8, 2,900; 7½" x No. 8, 2,000.

Armstrong's Wood Skewers — Hardwood skewers for application of second and succeeding layers of insulation. Specially treated against mold growth and dry rot. Coverage—2/sq. ft. on walls and 3/sq. ft. on ceilings and solid cork partitions. Sizes: 4" x ¼", 5 lbs./M; 5½" x ¼", 6½ lbs./M; 7" x ¼", 10 lbs./M.

Armstrong's No. 340 Waterproof Cement—Recommended for use in duct insulation suitable for use against metal, concrete, and plaster surfaces; medium bodied, high initial strength, supports weight of insulation without reinforcing, plastic when dry, moisture resistant, and shrinks but little during setting and drying. Must cover complete surface. Coverage—30 sq. ft./gal. when applied with notched trowel; 12½ lbs./gal. Containers: 1- and 5-gal. pails.

FINISHING MATERIALS

Armstrong's Asphalt Emulsion (Aquaseal)—A clay emulsion of finely dispersed, high-grade asphalt is the basic ingredient of Armstrong's Plastic Finish, an airproof and moistureproof plastic finish which can be mixed on the job and troweled directly to the insulation surface. Mix in the proportion of 50 gals. of Armstrong's Asphalt Emulsion with 112 lbs. asbestos fiber, 275 lbs. (2¾ cu. ft.) dry screened sand, and 15 gals. of water. For a sand finish, use this mixture for both first and second coats, trowel spreading to a final thickness of ⅛" when dry. Coverage—15 sq. ft./gal. of asphalt emulsion. Armstrong's Asphalt Finish is also supplied in ready mixed form as Armstrong's Plastic Emulsion.

Aquaseal is also recommended for sealing insulation in refrigerated display cases and equipment. Coverage—1½ to 2½ gals./100 sq. ft.; 9½ lbs./gal. Containers: 1-, 5-, and 10-gal. pails; 30- and 55-gal. drums.

Armstrong's Plastic Emulsion — Factory-mixed asphalt emulsion, asbestos fiber, sand, and water, ready for troweling directly on insulation surface in two coats to a total thickness of ⅛" when dry. Coverage—8 sq. ft./gal.; 11 lbs./gal. Containers: 5- and 10-gal. pails; 30-gal. drums.

Armstrong's S. P. Emulsion—Factory-mixed combination of Armstrong's Asphalt Emulsion and asbestos fiber, ready for trowel-

ing directly on insulation surface in two coats to a final thickness of 1/8" when dry. Coverage—8 sq. ft./gal.; 10 lbs./gal. Containers: 5- and 10-gal. pails; 30- and 55-gal. drums. S. P. Emulsion may be mixed with sand for sand finish, using 50 gals. S. P. Emulsion with 175 lbs. (1¾ cu. ft.) dry, screened sand and small amount of water for tempering. Troweled directly to insulation surface in two coats to final thickness of 1/8" when dry. Coverage—9 sq. ft./gal. of S. P. Emulsion.

Armstrong's Insulmastic — A weatherproof, fire-resistant material of heavy troweling consistency for fireproof finish on insulation in refineries and where fire hazards are highly objectionable; for protection of insulation on large tanks, outdoor pipe lines, smoking breechings, ducts, etc. Will not support combusion. Also recommended for high-temperature insulation. Factory-mixed combination of Armstrong's Asphalt Emulsion with special fibers and fillers, black, rubbery in appearance, forms a monolithic coating, unaffected by temperature changes, does not slip or sag at high temperatures, and does not crack or rupture under normal movement. Apply in two coats, each 1/8" thick. Coverage—2 lbs./sq. ft. for two-coat finish or 1 lb./sq. ft. for one coat 1/8" thick; 10 lbs./gal. Containers: 5- and 10-gal. pails; 30- and 55-gal. drums.

Armstrong's Weatherproof Plastic — A weatherproof protective finish for insulation subjected to weather exposure and where fire hazard is not a factor. A plastic mixture of special asphalts, fibers, and fillers, and solvent ready for application; does not slip or sag and is unaffected by temperature. Apply in two 1/16" coats reinforced with Armstrong's saturated membrane between coats. Coverage—1 lb./sq. ft. for two 1/16" coats; 9½ lbs./gal. Containers: 5- and 10-gal. pails; 30- and 55-gal. drums.

Armstrong's Aluminum Cold Storage Paint — Recommended for use over asphaltic surfaces only. Light-reflecting finish, does not discolor due to bleeding through of the asphalt, odorless when dry, does not crack at low temperatures. Coverage—250 sq. ft. (2 coats)/gal.; 10 lbs./gal. Containers: ½- and 1-gal. pails. Shipped as liquid and powder packaged separately to be mixed just before using.

Armstrong's No. 1 Asphaltic Paint—Glossy black finish for Armstrong's Cork Covering and other asphalt mastic and plastic finishes. Moisture resistant when not exposed to weather. Apply once yearly. Coverage—180 sq. ft. (1 brush coat)/gal.; 8½ lbs./gal. Containers: 1/16-, 1/8-, ½-, 1-, and 5-gal. pails.

MISCELLANEOUS

Armstrong's No. 20 Seam Filler—Odorless asphalt mastic for sealing pipe connections to refrigerated cabinets, cases, etc. Thermoplastic (softens in hot water) and does not become hard and brittle. Containers: ½-, 1-, 2-, and 30-lb. packages.

Armstrong's No. 27-B Seam Filler—An asphalt mastic compound for filling joints in Armstrong's Mastic Finish Corkboard and Armstrong's Cork Covering. For low-temperature use, 1 gal. is supplied with every 150 sq. ft. of Mastic Finish Corkboard, 13½ lbs./gal. Containers: ½-, 1-, and 5-gal. pails; 30-gal. drums.

Armstrong's Saturated Membrane—For reinforcing the two coats of Armstrong's Weatherproof Plastic, for waterproofing membrane, and for roof maintenance work. Asphalt saturated cotton, 24 x 26 threads per inch, 4 oz./yd. unsaturated; conforms to A.S.T.M. standards for waterproofing fabric. Supplied in 3-ft. rolls 50 yards long (50 sq. yds.); 47 lbs./roll.

Armstrong's Insulating Paper—Black allcor paper saturated and coated with pure asphalt for use in erection of corkboard in frame construction. Supplied in 500 sq. ft., 36" rolls; 38 lbs./roll.

Armstrong's Copper Clad Steel Wire—A special copper-jacketed steel wire which is drawn from a steel-cored copper billet. It combines the strength of steel with the corrosion resistance of copper. Its principal use is in the application of cork covering. The proper quantity of copper clad steel wire is included as a sundry with every shipment of cork covering. It is available in No. 14, No. 12, and No. 10 gauges. Steel strap is frequently substituted for wire at no extra cost with shipments of large-size covering and with shipments of lagging for cylindrical tanks and vessels and similar equipment in industrial plants. The strap and seals used are stripped and double electro-galvanized to provide high resistance to corrosion. Strap is ½" x .015 and ¾" x .020.

Armstrong's No. 299 Waterproof Cement—Alkali- and acid-resistant waterproof cement for applying cork covering and lagging. Quick setting and strong. Coverage—35 sq. ft./gal. for joint areas; 12 lbs./gal. Containers: 1/16-, 1/8-, ¼-, ½-gal. cans; 1- and 5-gal. pails.

Asbestos Fiber EX-25—A special grade of asbestos fiber for mixture with asphalt emulsion to make the asphalt plastic finish dense, tough, and hard and to keep it from cracking. Furnished in 100-lb. bags.

Armstrong's Fine Regranulated Cork—All cork granules that pass an 8-mesh screen. Packs approximately 5 lbs./cu. ft. Containers: 7-cu. ft. bags.

Armstrong's 8/14 Granulated Cork—Raw (unbaked) cork passing an 8-mesh screen and caught on a 14-mesh screen. Packs approximately 7 lbs. per cubic foot. Containers: 7-cubic ft. bags.

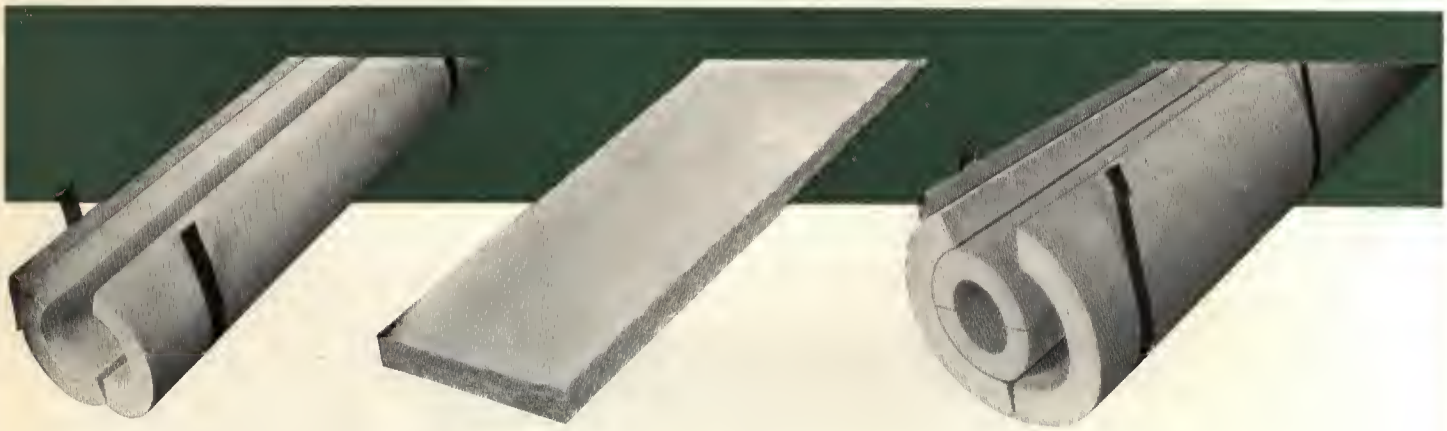
Armstrong's Regranulated Mineral Wool—Packs approximately 10 lbs. per cubic ft. Shipped in paper sacks, 50 lbs. each.

Other Grades—Granulated and regranulated cork is supplied in other grades for specific applications. Weights and other data will be supplied upon request. Write to Armstrong Cork Company, Building Materials Division, Lancaster, Pennsylvania.

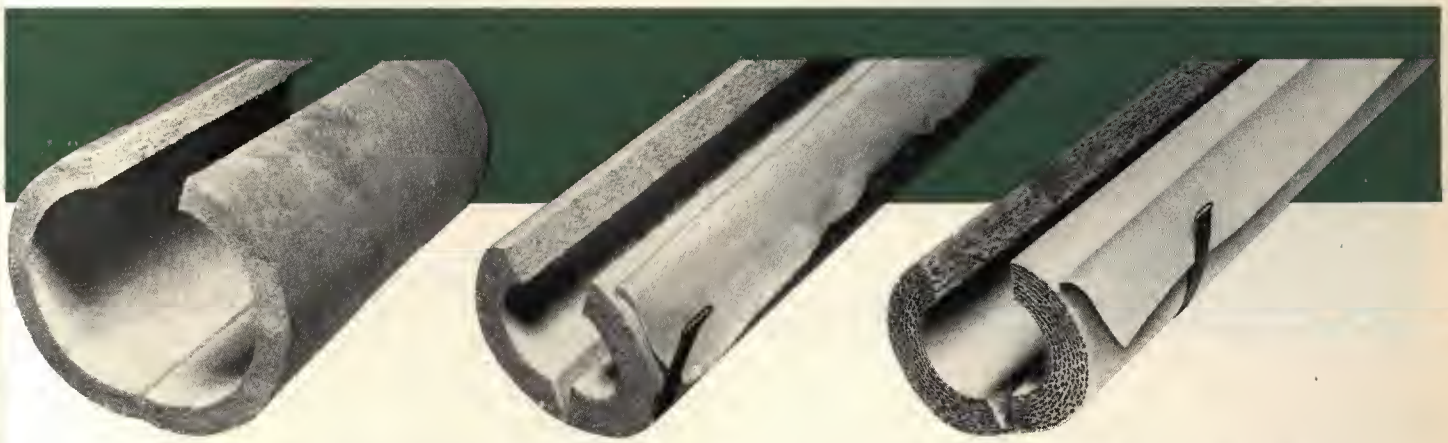
ARMSTRONG'S CONTRACT SERVICE FOR HEAT INSULATION

The Armstrong Cork Company has available for contract installation and direct sale in most of the nation's leading industrial areas the complete line of Keasbey and Mattison Pipe Coverings and other Heat Insulation Materials. The Keasbey and Mattison Company's line of insulations has been serving industry for more than sixty-five years and is constantly being improved and augmented to keep pace with the newest developments in heating, power generation, and industrial processing.

Armstrong's Contract Service is fully equipped to handle your heat insulation jobs with the same skill and efficiency that have made Armstrong outstanding in the low-temperature field. Our experienced organization takes full responsibility for every phase of planning, materials, supervision, and installation . . . brings you the advantage of Armstrong's wide engineering background, its materials of tested and proved efficiency, and the skillful workmanship of its mechanics. For complete information, contact your nearest Armstrong Office.



MATERIAL	85% MAGNESIA PIPE COVERING	85% MAGNESIA BLOCK	HY-TEMP. P/C AND BLOCK
Composition	Basic carbonate of magnesia combined with clean asbestos fibers.	Basic carbonate of magnesia combined with clean asbestos fibers.	Diatomaceous earth bonded together with asbestos fibers.
Temperature Range	Up to 600° F.	Up to 600° F.	Up to 1900° F. Used next to the hot surface when temperatures exceed 600° F. to reduce the temperature of the outer side of the Hy-Temp to within the limit of 85% Magnesia.
Sizes	3′ lengths, split horizontally and joined with pasted canvas flaps forming hinge and lap, with necessary bands for application. For pipe sizes up to and including 10″. On order, for 12″ pipe sizes. In 3′ segments for larger pipe.	3″, 6″, 9″, and 12″ wide. All widths are 36″ long.	3′ lengths in tubular half sections. For pipe sizes ½″ to 10″. In 3′ segments for larger pipe. Block sizes same as listed under "85% Magnesia Block."
Thicknesses	Standard, 1½″, 2″, Double Standard, and 3″.	1″ to 4″. Curved blocks 6″ wide in thicknesses from 1½″ to 2½″.	1″ to 3″.



MATERIAL	KAMATT PIPE COVERING	BESTFELT P/C AND BLOCK	AIR CELL P/C AND BLOCK
Composition	Molded asbestos insulation made from Amosite asbestos fibers and binder.	Built up layers of crimped asbestos paper. Approximately 33 laminations per inch.	Made in three grades. Special Fine Corrugated, Fine Corrugated, and Corrugated. Alternate flat and corrugated layers of asbestos paper.
Temperature Range	Up to 750° F.	Up to 700° F.	Up to 300° F.
Sizes	3′ length sectional covering for pipe sizes 12″ and over.	3′ lengths with canvas jacket and necessary bands. For pipe sizes from ½″ to 6″. Larger sizes on request. Blocks are 6″, 9″, 12″, 18″, and 36″ wide x 36″ long.	3′ lengths with canvas jacket and necessary bands. For pipe sizes from ½″ to 6″. Sheets and blocks are 6″, 9″, 12″, 18″, 36″, and 72″ long x 36″ wide.
Thicknesses	Solid thicknesses of 2″, 2½″, and 3″.	1″ Standard Thickness. Up to 2½″ thicknesses furnished in one layer construction. 3″ supplied in broken joint construction. Blocks are ½″ to 4″ thick.	Approximately ½″ to 1″. Blocks are ½″ to 4″ thick.

MATERIAL	DUPLEX PIPE COVERING	NON-SWEAT PIPE COVERING	NON-FROST PIPE COVERING
Composition	Layers of creped felt with a universal inner liner of specially treated waterproof saturated felt.	Combination of waterproofing and insulating felts. Used to prevent sweating of cold lines.	Layers of cattle hair felt surrounded by layers of paper felt. Used to prevent freezing.
Temperature Range	40° to 212° F.	Used to prevent sweating of cold water lines.	Used to retard freezing of cold water and drain pipes.
Sizes	3′ lengths, with canvas jacket and necessary bands. For ½″ to 3½″ pipe sizes.	3′ lengths with canvas jacket and necessary bands. For ½″ to 4″ pipe sizes.	3′ lengths with canvas jacket and necessary bands. For ½″ to 4″ pipe sizes.
Thicknesses	½″, ¾″, and 1″ in single layer construction. 1″, 1½″, and 2″ in double layer construction.	½″ and ¾″ in single layer construction. 1″, 1½″, and 2″ in double layer construction.	Approximately 1¼″.

MISCELLANEOUS HEAT INSULATIONS

Hair Felt—Conforms to U. S. Navy standards. Used to prevent freezing of cold water lines.

Asbestos Millboard—Used as a protection against fire and heat. It can be supplied with either a smooth or knurled surface. Asbestos Millboard can be readily cut with a saw or knife and can be fastened with nails or screws.

Asbestos Paper and Rollboard—Used for general fireproofing work or where insulation of minimum thickness is required. Composed of clean asbestos fibers combined with a binding material to produce a strong, flexible, and particularly white sheet. Will not disintegrate when wet and regains original strength and whiteness when dried.

High-Temperature Cement—Similar to high-temperature sectional and block insulations, except that it is used in plastic form on irregular surfaces that are difficult to insulate.

Range Boiler Jackets—Furnished in standard sizes to fit all types and sizes of range boilers.

Mineral Wool Insulating Cement—A plastic insulation used principally on boilers, furnaces, ovens, heaters, and steam traps and other irregular surfaces.

85% Magnesia Cement—Similar to 85% magnesia sectional and block insulations, except that it is used in plastic form on irregular surfaces that are difficult to insulate.

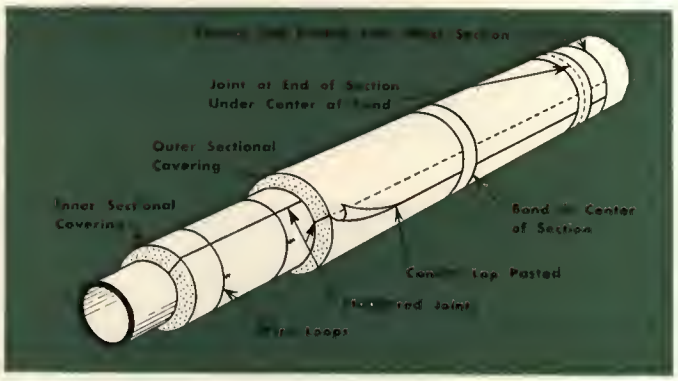
Asbestos Cement—Various types and grades of asbestos cement are furnished for finishes and other applications.

Fibrous Adhesive—A fibrous plastic material used as binding agent in healing insulation work.

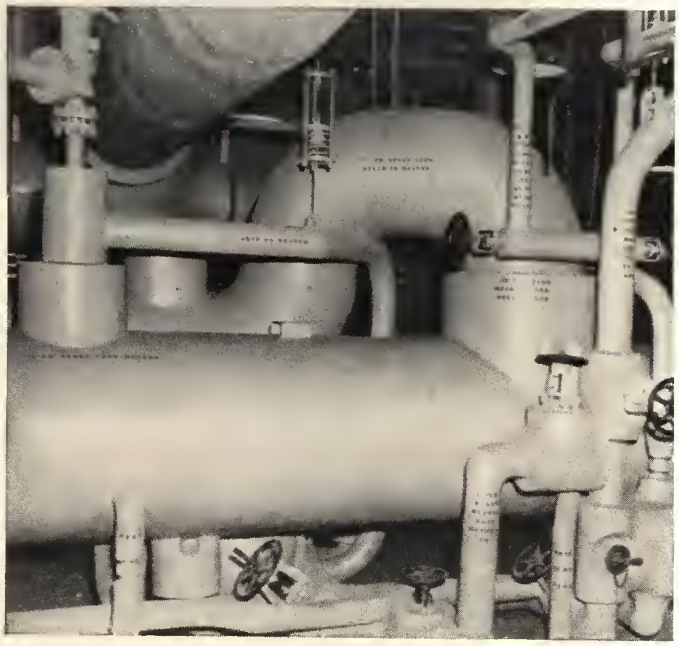
PIPE COVERINGS

Pasted and Banded Half Sections—Apply single layer pipe coverings carefully to the pipe with side and end joints tightly butted. Paste the canvas down smoothly, paying particular attention to the pasting of the lap of canvas over the adjoining section. Apply two metal bands to each section of covering, one band at the midpoint of the section, and one band centered over the end joint.

When applying double layer covering, secure the inner layer, which is not furnished with canvas jacket, to the pipe with not less than three separate loops of 16-gauge annealed iron wire on pipes up to and including 6", and not less than four loops on larger pipes. Twist the ends of all wire loops tightly together, bend them over and tap them into the insulation so that no projection remains. Apply the second layer which is furnished with canvas jacket over the first so that both circumferential and horizontal joints are broken. Paste the canvas down smoothly and apply the metal bands the same as described for single layer application.



Segmental Coverings—Apply segmental pipe covering in two equal layers to make up the thickness specified. Apply it in the same manner as sectional covering, but, as no canvas is attached to the outer surface, both layers should be wired on in the same manner as the inner layer of double layer sectional covering. Apply the proper finish in accordance with the specifications below.



FINISHES FOR PIPE COVERINGS

Sewed Canvas—To pipe covering indoors, apply 40-lb. rosin-sized paper; staple neatly in place to provide a smooth surface. Cover with an 8 oz. canvas jacket, sewed on, with all seams located where they will be least visible, and stitched not less than three stitches to the inch.

Pasted Canvas—Apply either special or factory-weight canvas jacket to provide a smooth surface. Paste down neatly over all laps.

Painting—To paint over canvas jacket, apply one coat of glue sizing before the paint is applied and then paint with two coats of first quality lead and oil paint in the desired color.

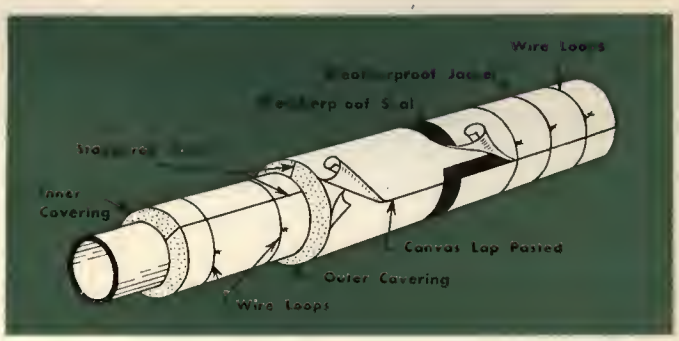
Cement—Apply asbestos cement finishes in two layers, totaling at least ½" in thickness. The last layer should be neatly troweled to form a surface that is smooth and hard.

Hard Finish Cement—Apply hard cement finish in the same manner as cement finish, except for the outer layer, which should be mixed with ⅓ by weight of portland cement.

Outdoor Piping—Cover the insulation with 45-lb. roofing felt, lapped 3". Lap should be turned down and sealed with Armstrong's Aquaseal. Wire in place with copper or galvanized wire on 4" centers. If a fire resistant finish is desired, apply 45-lb. asbestos base roofing paper lapped, sealed, and wired on in the same manner as roofing felt.

Cover fitting, valve, and flange insulation with a coating of cement and finish in the same manner as the adjacent piping.

On fittings on lines under 4" pipe size, an insulation consisting entirely of cement should be applied, in two or more coats, depending upon the total thickness desired. Permit each coat of cement to dry before applying the next coat.



FITTINGS, VALVES, AND FLANGES

Apply insulation on fittings, valves, and flanges to the same total thickness as specified for adjacent piping.

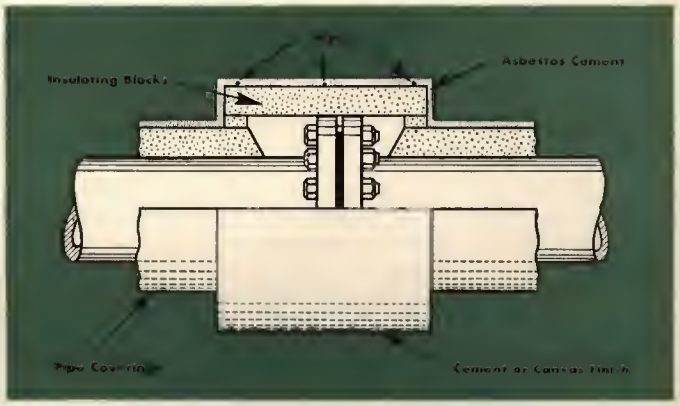
On pipe sized 4" and larger, carefully fit and wire on blocks of the same material as used on the adjacent piping. Allow for ½" coating of asbestos cement, which should be applied in two layers and trowelled to a smooth, hard finish.

For pipe sizes under 4", all cement insulation may be used. Apply asbestos cement, 85% magnesia cement, or high-temperature cement, depending on the operating temperature of the line.

Cement should be applied in two or more layers, depending on the total thickness required, and each layer should be dry before the next is applied.

When insulating flanges, pipe covering should be terminated and beveled far enough away from the flange to permit easy removal of bolts. The insulation on the flanges should extend about 2" over the adjacent pipe covering.

Pasted or sewed canvas finishes may be applied over the cement surface where specified. However, they should match the finish on the adjacent pipe covering.



BLOCK INSULATION

Secure block insulation in place by means of No. 16 gauge wire or ⅛" wire cables spaced at 12" intervals, wrapped around, or attached, to suitable anchorages.

Where two or more layers of block insulation are specified, apply the second and succeeding layers with all joints staggered.

After the block has been applied, stretch and securely fasten hexagonal mesh galvanized wire netting tightly over the entire surface and wire to supporting cables.

FINISHES FOR BLOCK INSULATION

Finish with two layers of asbestos cement of at least ¼" thickness each. If an extremely hard finish is desired, add to the outer layer ⅓ to ½ by weight of portland cement.

Where block insulation is located outdoors, or protection against excessive moisture is required, apply Armstrong's Insulmastic in two coats, each approximately ⅛" thick over the regular cement finish. The second layer of the cement finish should be left rough to provide a bond for the Insulmastic.

On high towers, spherical and cylindrical vessels, high elevated equipment, etc., 1" galvanized wire mesh should be secured directly to the cement finish before Insulmastic is applied.

ARMSTRONG'S INSULATING FIRE BRICK

Armstrong's complete line of insulating fire brick for temperatures from 1600° to 2800° F. permits maximum furnace efficiency. Heat loss can be reduced as much as 80% by incorporating insulating fire brick in refractory walls. Lightweight insulating fire brick also permit furnaces to be brought to operating temperatures in 80 to 90% less time than required for furnaces of heavy fire brick. By preventing heat loss through the walls, these brick insure more accurate furnace temperature control and reduce operating costs. Their light weight simplifies furnace design, and their high physical strength assures longer furnace life and fewer shutdowns.

USE OF INSULATING BRICK

These brick may be used directly exposed as furnace linings or directly behind the refractory as back-up insulation. All types can be used in direct exposure in equipment fired with gas, oil, or powdered fuel. However, insulating fire brick should not be used where they are exposed to molten metal and slags or severe mechanical abrasion. A layer of clay fire brick is recommended for these applications, with Armstrong's Insulating Fire Brick used behind them as back-up insulation.

REFRACTORY CEMENTS

Armstrong's C199 Cement—A newly developed, cold setting refractory cement for laying and facing all types of insulating fire brick and all types of clay fire brick, including super duty. Armstrong's C199 Cement offers exceptional workability and meets every essential engineering requirement. It has high bonding strength, high refractoriness, and low shrinkage characteristics and is easy to handle on the job. This cement will not harden in the drum, even after months of storage, and is ready for immediate use on the job without stirring.

Armstrong's No. 2500 Cement—Designed for laying all types of insulating fire brick for service up to 2500° F. It is a heat setting cement and will not form a ceramic bond, permitting unusually high salvage value of the brick.

Armstrong's No. 2600 Cement—For laying and facing Armstrong's A-23 and A-26 Insulating Fire Brick where a high degree of bond is not necessary. Sets moderately firm on drying and forms a ceramic bond when heated to 1800° F. For an exceptionally firm bond, Armstrong's C199 Cement is recommended.

PHYSICAL PROPERTIES OF ARMSTRONG'S INSULATING FIRE BRICK

Type	A-16	A-20	A-23	A-25	A-26	A-28
Moximum hot foce temperature	1600° F.	2000° F.	2300° F.	2500° F.	2600° F.	2800° F.
Flexural Strength (lbs./sq. in.) Test Method: A.S.T.M. C93-39T.	120	70	210	105	225	
Compressive Strength, minimum (Lbs./sq. in.) Test Method: A.S.T.M. C93-39T.	175	175	430	250	325	234
P. C. E. No., minimum Test Method: A.S.T.M. C24-35.	7	29	31	29	33	36
Corresponding Softening Point	2282° F.	2939° F.	3056° F.	2984° F.	3173° F.	3290° F.
Weight per 9-inch straight. Lbs. moximum	1.85	1.90	2.75	2.35	2.80	3.25
Weight, lbs. per cu. ft. moximum	31.6	32.4	47.0	40.2	47.8	55.15
Spolling Loss—Average per cent	0.25	3.0	5.0	9.0	5.0	15.0
Shrinkoge, Linear chonge per cent at moximum hot foce temperatures (moximum) Test Method: A.S.T.M. C93-39T, for 24-hour period.	0.5	1.10	1.75	2.00	2.00	2.00
Conductivity, Btu per sq. ft. per hr. per in. thickness at max. meon temperoture 400° F.	.890	.846	1.620	1.253	1.753	2.292
1200° F. Test Method: Guarded Hot Plate Method.	1.362	1.532	2.543	2.140	2.532	2.945

REQUIRED THICKNESSES OF INSULATION

This chart is a guide to assist in determining the type and thickness of insulation for industrial applications for temperatures from 300° below zero to 2800° F. Note that several types of insulation frequently are shown in one group. This does not mean that each insulation is equally suited for all applications. Since insulation materials vary in thermal efficiencies and service characteristics, selection of materials should not be made without careful consideration of all job conditions. Your nearest Armstrong office or Armstrong distributor will help you select those materials which are best suited to your specific job conditions or requirements.

Temp.	Lines ¼" Thru 1½"	Lines 2" Thru 7"	Lines 8" Thru 20"	Lines or Equipment 20" to 54"	Lines or Equipment 54" to 120"	Equipment Over 120" and Flat Surfaces
300° to 250°	6" to 8" Wall Thickness Cork Covering	9" to 11" Wall Thickness Cork Covering	12" to 14" Wall Thickness Cork Covering	14" to 16" Cork Lagging	16" to 18" Corkboard	22" Corkboard or 20" C.B. and 3" Foamglas
250° to 200°	5" to 7" Wall Thickness Cork Covering	8" to 10" Wall Thickness Cork Covering	11" to 13" Wall Thickness Cork Covering	13" to 15" Cork Lagging	15" to 17" Corkboard	18" Corkboard or 16" C.B. and 3" Foamglas
200° to 150°	5" to 6" Wall Thickness Cork Covering	7" to 8" Wall Thickness Cork Covering	9" to 11" Wall Thickness Cork Covering	11".to 12" Cork Lagging	12" to 15" Corkboard	15" Corkboard or 13" C.B. and 3" Foamglas
150° to 100°	4" to 5" Wall Thickness Cork Covering	6" to 7" Wall Thickness Cork Covering	8" to 9" Wall Thickness Cork Covering	9" to 10" Cork Lagging	10" to 12" Corkboard	12" Corkboard or 10" C.B. and 3" Foamglas
100° to 50°	H.D.T. Cork Covering To 4" Cork Covering	5" to 6" Wall Thickness Cork Covering	7" to 8" Wall Thickness Cork Covering	8" to 9" Cork Lagging	8" to 10" Corkboard	10" Corkboard or 8" C.B. and 3" Foamglas
50° to 20°	H.D.T. Cork Covering To 4" Cork Covering	4" to 5" Wall Thickness Cork Covering	5" to 6" Wall Thickness Cork Covering	6" to 7" Cork Lagging	7" to 9" Corkboard	10" Corkboard or 8" C.B. and 3" Foamglas
20° to 0°	H.D.T. Cork Covering	H.D.T. Cork Covering	H.D.T. Cork Covering To 5" Cork Covering	5" to 6" Cork Lagging	6" to 8" Corkboard	8" Corkboard or 10" Mineral Wool Board or 12" Foamglas or 6" C.B. and 3" Foamglas
0° to 20°	Standard Thickness Cork Covering	Standard to H.D.T. Cork Covering	H.D.T. Cork Covering	4" Cork Lagging	4" to 6" Corkboard	6" Corkboard or 7" Mineral Wool Board or 9" Foamglas or 4" C.B. and 3" Foamglas
20° to 50°	Light Duty to Standard Thickness Cork Covering	Standard Thickness Cork Covering	Standard Thickness Cork Covering	3" Cork Lagging	3" to 4" Corkboard	5" Corkboard or 6" Mineral Wool Board or 8" Foamglas or 3" C.B. and 3" Foamglas
50° to 100°	Light Duty Thickness Cork Covering or ½"–2" Hairfelt or ½"–2" Non-Sweat P.C. or ½"–2" Woolfelt P.C.	Light Duty Thickness Cork Covering or ½"–2" Hairfelt or ½"–2" Non-Sweat P.C. or ½"–2" Woolfelt P.C.	Light Duty Thickness Cork Covering or ½"–2" Hairfelt or ½"–2" Woolfelt P.C.	2" Cork Lagging or ½"—2" Hairfelt	2" Corkboard or ½"—2" Hairfelt	2" Corkboard or 3" Mineral Wool Board or 4" Foamglas
100° to 200°	1" Woolfelt P.C. or 1" Aircell P.C. or Std. Thick 85% Mag. P.C.	1" Woolfelt P.C. or 1" Aircell P.C. or Std. Thick 85% Mag. P.C.	1" Woolfelt P.C. or 1½" Aircell P.C. or Std. Thick 85% Mag. P.C.	1½" Aircell Block or 1" to 1½" 85% Mag. Block or 1" Mineral Wool Blanket	1½" Aircell Block or 1" to 1½" 85% Mag. Block or 1" Mineral Wool Blanket	1½" Aircell Block or 1" to 1½" 85% Mag. Block or 1" Mineral Wool Blanket
200° to 250°	1" Aircell P.C. or Std. Thick 85% Mag. P.C. or 1" Bestfelt P.C.	1" Aircell P.C. or Std. Thick 85% Mag. P.C. or 1" Bestfelt P.C.	1½" Aircell P.C. or Std. Thick 85% Mag. P.C. or 1½" Bestfelt P.C.	1½" Aircell Block or 1½" 85% Mag. Block or 1½" Bestfelt Block or 1½" Mineral Wool Blanket	1½" Aircell Block or 1½" 85% Mag. Block or 1½" Bestfelt Block or 1½" Mineral Wool Blanket	1½" Aircell Block or 1½" 85% Mag. Block or 1½" Bestfelt Block or 1½" Mineral Wool Blanket
250° to 300°	1" Aircell P.C. or Std. Thick 85% Mag. P.C. or 1" Bestfelt P.C.	1" Aircell P.C. or Std. Thick 85% Mag. P.C. or 1" Bestfelt P.C.	1½" Aircell P.C. or Std. Thick 85% Mag. P.C. or 1½" Bestfelt P.C.	1½" Aircell Block or 1½" 85% Mag. Block or 1½" Bestfelt Block or 1½" Mineral Wool Blanket	1½" Aircell Block or 1½" 85% Mag. Block or 1½" Bestfelt Block or 1½" Mineral Wool Blanket	1½" Aircell Block or 1½" 85% Mag. Block or 1½" Bestfelt Block or 1½" Mineral Wool Blanket
300° to 350°	Std. Thick 85% Mag. P.C. or 1" Bestfelt P.C.	Std. Thick to 1½" 85% Mag. P.C. or 1½" Bestfelt P.C.	1½" 85% Mag. P.C. or 1½"—2" Bestfelt P.C.	1½" 85% Mag. Block or 1½"—2" Bestfelt Block or 1½" Mineral Wool Blanket	1½" 85% Mag. Block or 1½"—2" Bestfelt Block or 1½" Mineral Wool Blanket	1½" 85% Mag. Block or 1½"—2" Bestfelt Block or 1½" Mineral Wool Blanket
350° to 400°	Std. Thick 85% Mag. P.C. or 1" Bestfelt P.C.	1½" to 2" 85% Mag. P.C. or 1½"—2" Bestfelt P.C.	2" 85% Mag. P.C. or 2" Bestfelt P.C.	2" 85% Mag Block or 2"—2½" Bestfelt Block or 2" Mineral Wool Blanket	2" 85% Mag. Block or 2"—2½" Bestfelt Block or 2" Mineral Wool Blanket	2" 85% Mag. Block or 2"—2½" Bestfelt Block or 2" Mineral Wool Blanket
400° to 500°	1½" 85% Mag. P.C. or 1½" Bestfelt P.C.	2" to Dbl. Std 85% Mag. P.C. or 2" Bestfelt P.C.	Dbl. Std. 85% Mag P.C. or 2½"—3" Bestfelt P.C.	3" 85% Mag Block or 3"—3½" Bestfelt Block or 2" Mineral Wool Blanket	3" 85% Mag. Block or 3"—3½" Bestfelt Block or 2" Mineral Wool Blanket	3" 85% Mag. Block or 3"—3½" Bestfelt Block or 2" Mineral Wool Blanket
500° to 600°	2" 85% Mag. P.C. or 2" Bestfelt P.C.	Dbl. Std. to 3" 85% Mag. P.C. or 2½" Bestfelt P.C	3" 85% Mag. P.C. or 3" Bestfelt P.C.	3" 85% Mag. Block or 3"—3½" Bestfelt Block or 2½" Mineral Wool Blanket	3" 85% Mag. Block or 3"—3½" Bestfelt Block or 2½" Mineral Wool Blanket	3" 85% Mag. Block or 3"—3½" Bestfelt Block or 2½" Mineral Wool Blanket
600° to 700°	2" Bestfelt P.C. or 2" Hy-Temp. P.C. Comb. 1½" Hy-Temp. and 1½" 85% Mag. P.C.	3" Bestfelt P.C. or Comb. 1½" (Nominal) Hy-Temp. and 1½" 85% Mag. P.C.	3½" Bestfelt P.C. Comb. 1½" Hy-Temp and 1½" 85% Mag. P.C.	4" Bestfelt Block Comb. 1½" Hy-Temp. and 2½" 85% Mag. Block or 2½" Mineral Wool Blanket	4" Bestfelt Block Comb. 1½" Hy-Temp. and 2½" 85% Mag. Block or 2½" Mineral Wool Blanket	4" Bestfelt Block or Comb. 1½" Hy-Temp. and 2½" 85% Mag. Block or 2½" Mineral Wool Blanket
700° to 800°	2" Hy-Temp. P.C or Comb. 1½" Hy-Temp. and 2" 85% Mag. P.C.	Comb. 1½" (Nominal) Hy-Temp. and 2" 85% Mag. P.C.	Comb. 1½" (Nominal) Hy-Temp and 2" 85% Mag. P.C	Comb. 2½" Hy-Temp and 2" 85% Mag. Block or 3" Mineral Wool Blanket	Comb. 2½" Hy-Temp. and 2" 85% Mag. Block or 3" Mineral Wool Blanket	Comb. 2½" Hy-Temp. and 2" 85% Mag. Block or 3" Mineral Wool Blanket
800° to 1000°	2" Hy-Temp. P.C. or Comb. 2" Hy-Temp. and 2" 85% Mag. P.C.	Comb. 2" Hy-Temp. and 2" 85% Mag. P.C.	Comb. 3" Hy-Temp. and 2" 85% Mag. P.C.	Comb. 3" Hy-Temp. and 2" 85% Mag. Block or 3" to 3½" Min. Wool Blanket	Comb. 3" Hy-Temp. and 2" 85% Mag. Block or 3" to 3½" Min. Wool Blanket	Comb. 3" Hy-Temp. and 2" 85% Mag. Block or 3" to 3½" Min. Wool Blanket
1000° to 1200°	2" Hy-Temp. P.C. or Comb. 2" (Nominal) Hy-Temp. and 2" 85% Mag. P.C.	Comb. 2" Hy-Temp. and 2" 85% Mag. P.C.	Comb. 3" Hy-Temp. and 2" 85% Mag. P.C.	Comb. 3½" Hy-Temp. and 1½" 85% Mag. Block or 4" Mineral Wool Blanket	Comb. 3½" Hy-Temp. and 1½" 85% Mag. Block or 4" Mineral Wool Blanket	Comb. 3½" Hy-Temp. and 1½" 85% Mag. Block or 4" Mineral Wool Blanket
1200° to 1400°				Comb. 5½" Hy-Temp. and 2" 85% Mag. Block or A-16 Insulating Fire Brick	Comb. 5½" Hy-Temp and 2" 85% Mag. Block or A-16 Insulating Fire Brick	Comb. 5½" Hy-Temp. and 2" 85% Mag. Block or A-16 Insulating Fire Brick
1400° to 1600°				Comb. 6" Hy-Temp. and 1½" 85% Mag. Block or A-16 Insulating Fire Brick	Comb. 6" Hy-Temp. and 1½" 85% Mag. Block or A-16 Insulating Fire Brick	Comb. 6" Hy-Temp. and 1½" 85% Mag. Block or A-16 Insulating Fire Brick
1600° to 1800°				6" Hy-Temp. Block or A-20 Insulating Fire Brick or Combination of Both	6" Hy-Temp. Block or A-20 Insulating Fire Brick or Combination of Both	6" Hy-Temp. Block or A-20 Insulating Fire Brick or Combination of Both
1800° to 2800°				A-20 Insulating Fire Brick (2000° Top Temp. Limit) A-23 Insulating Fire Brick (2300° Top Temp. Limit) A-25 Insulating Fire Brick (2500° Top Temp. Limit) A-26 Insulating Fire Brick (2600° Top Temp. Limit) A-28 Insulating Fire Brick (2800° Top Temp. Limit)		

SYMBOLS: H.D.T.—Heavy Duty Thickness; C.B.—Corkboard; P.C.—Pipe Covering; Comb.—Combination Covering; M.W.B.—Mineral Wool Board

ARMSTRONG'S BUILDING MATERIALS

Floors
Asphalt Tile
- Standard
- Industrial
- Greaseproof
- Canductive

Linatile® (Oil-Banded)
Rubber Tile
Cark Tile
Linaleum

Walls and Cellings
Manawall®
Temlok® De Luxe
Linawall®
Veas Wall Tile

Acoustical Materials
Arrestone®
Cushiontane®
Carkoustic®

Insulations
Low Temperature
- Carkbaard
- Cark Cavering
- Faamglas*
- Fiberglas**
- Mineral Waal Baard

Heat Insulatians
- 85% Magnesia
- Air Cell
- High Temperature
- Other Heat Insulatians

Insulating Refractories
Camfart Insulatians
Carkbaard and Temlak Raaf Insulation
Temlak Lath
Temseal® Sheathing

*® Pittsburgh Corning Corp.
**® Owens-Corning Fiberglas Corp.

Detailed informatian abaut any af these products and their applicatians may be obtoined pramptly fram Armstrang Cork Company, Building Materials Divisian, Architects' Service Bureau, Lancaster, Pennsylvania.

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Philadelphia
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Tulsa
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Charleston 23, W. Va.	Capital City Supply Co.
Eau Claire, Wis.	Harel-Gearge Co.
El Pasa, Texas	Case Industrial Service Company
Fart Wayne, Ind.	Midland Engineering Campany
Grand Rapids, Mich.	Tony Batenburg Insulatian Co.
Jamestawn, N. Y.	Laca Raafing & Asbestas Co.
Japlin, Mo.	Japlin Cement Co.
Little Rack, Ark.	Fischer Cement and Raofing Co.
Manitowac, Wis.	Northwestern Asbestas and Cark Insulatian Co.
Partland 4, Ore.	Asbestas Supply Co. af Oregon
San Antania, Texas	General Supply Co., Inc.
Seattle 4, Wash.	Asbestas Supply Co. af Seattle
Sauth Bend 23, Ind.	Midland Engineering Co.
Spokane 12, Wash.	Asbestas Supply Co. af Spakane
Springfield, Ma.	Sauthwestern Insulatian Co.
Tacama 2, Wash.	Asbestas Supply Co. af Tacama

For ather ARMSTRONG PRODUCTS please cansult File Index

11-F-49 A

Printed in United States of America

ARMSTRONG CORK COMPANY
BUILDING MATERIALS DIVISION • LANCASTER, PENNSYLVANIA

insulation for pipes • tanks • air conditioning • roofing • machinery isolation

10b
2

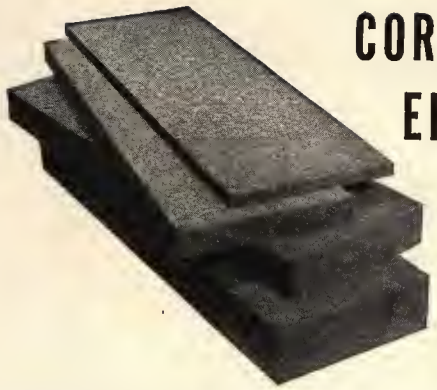
A NATIONWIDE SERVICE

Novoid and Stonewall insulating products are made easily available in all sections of the country through a closely-knit organization of carefully selected distributors, located in all principal cities of the United States and in Honolulu, T. H. These are financially responsible business firms, possessing a trained personnel and respected for the high standards maintained.

No two insulation jobs are alike. Each is affected by special features which should be considered in the selection of materials and their method of erection. Although the Cork Import catalog is comprehensive, containing separate sections on the primary products, roof insulation, locker storage plants, erection, and although copies will be sent gladly to those interested, there is no substitute for the personalized consultation service offered by distributors, who are practical builders and who have had extensive insulation experience. Our Engineering Department and the distributor nearest to you are always ready to co-operate in recommending a solution for your low temperature insulation problem.

CORK IMPORT CORPORATION

39 PARK PLACE
ENGLEWOOD,
NEW JERSEY



CORKBOARD ERECTION

THE INSULATION of refrigerated areas can be accomplished both efficiently and economically if sound engineering principles are followed in utilizing the unique features of cork insulation. To meet the wide range of conditions encountered, Novoid Corkboard Insulation is manufactured in several different forms, each designed for a particular purpose.

The severe conditions arising from cold temperatures require special "sundries" to be used with the cork insulation. In most cases, these are manufactured in our factories under laboratory control.

Seldom is it possible to present to the engineer or architect a specification which can be used successfully without adaptation to the particular conditions of the job under consideration. We recommend that full advantage be taken of the consultation service offered willingly and made readily available by our extensive organization. Our distributors, experienced in the requirements of low temperature insulation, know that Novoid Cork Products will retain indefinitely their original high efficiency, if certain fundamentals are incorporated in their erection:

1. By use of asphaltic materials, provide adequate protection against warm air infiltration and moisture.

2. Insist on straight cutting, neat fitting and proper handling to insure tight joints.

3. Eliminate voids or "dead" air spaces where condensation might develop.

4. Anchor door bucks of sufficient size securely to floor and ceiling.

5. Use only well seasoned lumber (spruce, fir or cypress, preferably treated).

6. Install doors of suitable size, type and construction.

7. Break joints on multiple course work.

8. Select sundry materials particularly adapted to service conditions.

9. Specify thicknesses of insulation corresponding to prevailing temperature differentials.

10. Erect materials under conditions which allow proper setting or drying.

Product Names And Descriptions

Novoid Standard Corkboard — For the construction of refrigerated rooms, trucks, cars, cabinets, the insulation of houses and roofs. Standard thicknesses: 1, 1½, 2, 3, 4 and 6 in. Sheet sizes: 12, 18, 24 and 36 in. wide by 36 in. long.

Novoid Mastic Finish (M.F.) Corkboard — Has a heavy mastic coating on one side as a moisture-proof finish. Seam filler included in cost. Standard thicknesses. Sheet size: 12 x 36 in.

Novoid Airtite Corkboard — With a thin mastic coating on one or both sides, offers increased resistance to air infiltration and is recommended for hard service conditions. Standard thicknesses. Sheet size: 12 x 36 in.

Novoid Hot Erection Asphalt — This asphalt, with which corkboard is coated previous to erection, constitutes a protection against air infiltration and a bond to asphalt primed surfaces.

Asphalt Saturated Membrane — Incorporated in hot asphalt mopping for water-proofing floor insulation.

Novoid Cold Erection Asphalt — For use where hot asphalt is not practical. Containing a naphtha solvent, it cannot be recommended unreservedly where odor of solvent might affect delicate foodstuffs.

Novoid Asphaltic Priming Paint — Primes masonry surfaces previous to installation of corkboard in hot asphalt.

Novoid Asphaltic (M.F.) Paint — Of heavy consistency, gives a glossy black finish to mastic and emulsion finishes.

Novoid White Sealer-Enamel — An odorless finish for asphaltic surfaces, particularly suited for refrigerated rooms.

Novoid C.B.H. Cement — For erecting corkboard to wood, plaster, steel and masonry surfaces.

Galvanized Wire Nails — 1¾, 2½, 3, 4, 5½, and 7½ in. lengths, having a special large head for nailing corkboard and mineral wool board to wood surfaces.

Impregnated Hardwood Skewers — 4, 5½ and 7 in. lengths for securing additional layers of corkboard and mineral wool board to the first layer.

Insulating Paper — Saturated and coated with asphalt for covering wood surfaces previous to erection of insulation in hot asphalt.

Stonewall (Light) Emulsion — Containing no sand or fiber, is a base for mixing emulsion finishes on the job and serves general dampproofing needs.

Stonewall (Heavy) Emulsion — For air-proofing and waterproofing corkboard in car, truck, case and cabinet construction, where conditions are unfavorable to the use of asphalt.

Asbestos Floats — A special type free from talc, lime and salt, for mixing emulsion finishes on the job.

Stonewall Fiber Emulsion Finish — Is applied as a factory-mixed asphaltic plaster for protecting surface of insulation from moisture and warm air infiltration. Contains fiber but no sand, and never hardens. Recommended particularly for ceilings.

Stonewall Sand Emulsion Finish — Similar to the Fiber, except that sand has been added to provide a semi-hard surface, suitable for walls.

Stonewall Weather Mastic — Weatherproofs corkboard insulation exposed to the weather.

Fine Regranulated Cork — Passes an 8-mesh screen. It is a loose fill type of insulation for temporary installations and for tanks.

AIR CONDITIONING

Corkboard insulated ducts before application of finish.

A properly designed air conditioning system will work at top efficiency when ducts are insulated with Novoid Corkboard and the piping covered with Novoid cork molded pipe covering and molded fitting jackets.

Corkboard is light in weight, easy to cut and handle, quickly secured with adhesive or with mechanical means. Where only a chilling function is performed, the steel ducts should first be primed with a proper asphaltic paint and then the corkboard erected in hot asphalt, unless metal screws or anchors are used.

For dual purpose systems, carrying warm air during the winter months, a waterproof adhesive is best for erecting the corkboard.

To prevent vapor penetration toward the cold duct, the exposed corkboard should be covered with asphalt emulsion or a factory-applied mastic. Where appearance is a consideration, either of these finishes can be treated with Novoid White Sealer-Enamel.

PRODUCTS

*** Novoid Standard Corkboard** — For the conservation of refrigeration and elimination of condensation.

Novoid Corkduc — With a thin mastic coating on one side, will prevent condensation, but will not conserve refrigeration to the extent that corkboard does. Sheet size: ½" thick x 12" wide x 36" long.

Novoid Asphaltic Steel Primer — Prepares steel surfaces of duct for hot asphalt erection.

*** Novoid Hot Erection Asphalt**

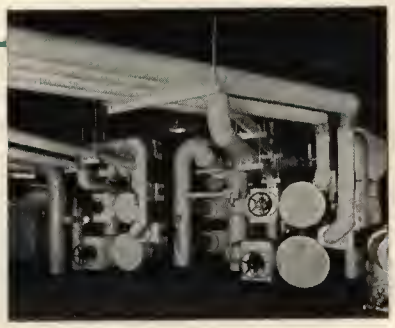
*** Novoid CBH Cement**

*** Stonewall Emulsion Finishes**

*** Novoid White Sealer-Enamel**

* See description on preceding page.

PIPE AND TANK INSULATION



A typical "Novoid" pipe covering job.

Novoid molded cork pipe covering and molded fitting jackets are manufactured in sectional form to assure quick, trouble-free installation. The sections are steam-baked, molded in the same manner as corkboard, then machined to fit accurately the pipe or fittings, given an asphaltic interior coating and an exterior heavy, ironed-on mastic coating.

As shipped from factory or warehouse, sundries in sufficient quantity and of the right type are included for proper erection. This procedure, developed from years of experience, should result, with reasonable care on the part of the erector, in a finished job characterized by:

1. Years of satisfactory service.
2. Minimum loss of refrigeration (high efficiency).
3. Integral structural strength (absence of sagging).
4. Custom-built for screwed, flanged, welding, or soldered fittings.
5. Uniform, pleasing appearance.
6. Low cost installation and operation.
7. Reduced maintenance and repairs.

Cylindrical tanks are best insulated by applying an envelope composed of tightly fitted and cemented corkboard lags and discs. Thicknesses up to and including 10 inches are furnished as a single layer. Corkboard collars cover protruding flanges. As in the case of pipe covering, the corkboard should be finished with Stonewall Emulsion and Asphaltic Paint to eliminate vapor penetration as much as possible.

Rectangular tanks can be insulated with corkboard and fine regranulated cork used separately or in combination.

PRODUCTS

Novoid Cork Pipe Covering

Light Duty Thickness — for water or refrigerant temperatures 35° Fahrenheit or higher.

Standard Thickness—for refrigerant temperatures 0° to 35° Fahrenheit.

Heavy Duty Thickness — for refrigerant temperatures 25° to 0°.

Wall Thicknesses of 4", 5", 6", 7" and 8" for special industrial applications where exceptionally low temperatures and severe conditions are encountered.

Sundries

Copper Clad Wire for securing sections together.

Brine Putty for filling large voids.

Waterproof Cement—An asphaltic base adhesive with high bonding strength, primarily developed for cork pipe covering.

Novoid Seam Filler — Sundry for mastic finishes. A soft, asphaltic putty which dries on the surface but retains a plastic core to seal effectively under expansion and contraction.

Wax and Dust — for filling small voids.

Acme Steel Bands.

Heavy steel bands with clips and bolts.

Novoid Corkboard Lags and Discs (Standard and Heavy Densities, mastic-coated on one or both sides).

* Stonewall Asphalt Emulsion Finishes.

* Novoid Asphaltic (M.F.) Paint.

* Novoid White Sealer-Enamel.

* See description on preceding page.

The following table may be considered a conservative guide for normal conditions:

Temperature Difference	Room Construction†		Tanks and Ducts	
	Corkboard	Minerol Wool Board	Corkboard	Minerol Wool Board
20° - 30°	1 in.	1½ in.	1 in.	1 in.
30° - 40°	1½ in.	2 in.	1 in.	1½ in.
40° - 50°	2 in.	2½ in.	1½ in.	2 in.
50° - 60°	3 in.	4 in.	2 in.	3 in.
60° - 70°	4 in.	5 in.	3 in.	4 in.
70° - 80°	5 in.	6 in.	4 in.	5 in.
80° - 90°	6 in.	8 in.	5 in.	6 in.
90° - 100°	7 in.	9 in.	6 in.	7 in.
100° - 110°	8 in.	10 in.	7 in.	8 in.
110° - 130°	10 in.	....	8 in.	....
Over 130°	12 in. or more	....	10 in. or more	....

† For rooms operating with high humidities, add 2 in. to the insulation recommended for normal conditions.

MINERAL WOOL BOARD

"Novoid Mineral Wool Board" is outstanding for its structural strength.

In 1940, when it could be foreseen that the demand for cork insulation needed for the war and reconversion programs would greatly exceed manufacturing capacities, our laboratories developed Novoid Mineral Wool Board. The results obtained in the field after extensive use, and the comments of those who have used competitive materials have been most complimentary. This justifies an unqualified recommendation for its use in the construction of refrigerated rooms and cabinets, insulation of air conditioning ducts and apparatus, and the insulation of rectangular and cylindrical tanks. In general, this product is not recommended for roof insulation, but it can be so used with good results when certain precautions are taken.

General Data

Sheet Size.....12 x 36 in.
Thicknesses .....1, 1½, 2, 3, and 4 in.
Conductivity .....Less than .33 BTU/inch thickness/square foot area/hour/degree Fahrenheit difference at a mean of 75 degrees.
Weight Less than 15 lbs. per cu. ft.
Meets Federal Specifications HH-M-371 for Type 1 materials.

Thickness Selection

* See table on preceding page.

ROOF INSULATION

Roof Chart Available — To prevent condensation, the roof structure must provide sufficient resistance to the transmission of heat that the heated atmosphere will not strike a colder surface of the ceiling at dewpoint conditions. Novoid Standard Corkboard of the proper thickness will provide the required resistance.

The Cork Import distributor or our office will furnish upon request a chart by which can be determined the resistance necessary to prevent condensation under given conditions of temperature and relative humidity.

The wide-spread use of corkboard roof insulation indicates a growing recognition on the part of engineers and architects that the reduction of winter heating costs, the increased comfort from repulsed summer heat, and the prevention of condensation are requisite to modern building construction. The incorporation of Novoid Standard Corkboard in plans and specifications will secure all three of these improvements without departing from established practices, and at a cost which will net an attractive return on the investment.

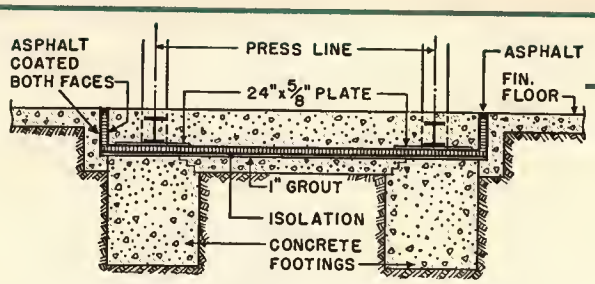
The installation is comparatively simple and should be included in the roofer's contract. The corkboard — in sheets 12, 18, 24, or 36 in. wide x 36 in. long — is light and flexible but structurally strong, easily handled, resistant to moisture permeation and readily bonded to roofing and deck. Approved erection methods include:

Beneath the Roof Deck

1. Laid in forms previous to pouring concrete deck.
2. Nailed to wood sleepers
   a. Mechanically secured to concrete deck.
   b. Incorporated in concrete deck.
3. Secured to ceiling with Novoid Waterproof Cement.
4. Nailed to wood stringers or between beams of wood deck.

Upon the Roof

1. Concrete — laid in hot asphalt or hot pitch directly upon the deck or upon a first course of felt, after which remaining courses are mopped onto the corkboard.
2. Wood — laid in hot asphalt or hot pitch upon a first course of felt and nailed. Subsequent courses of roofing mopped onto the corkboard.



TYPICAL FLOATING FOUNDATION FOR HEAVY PRESSES

MACHINERY ISOLATION

To minimize the amount of vibration and accompanying noise which might otherwise be communicated to a building structure, there are several effective methods. Each has its advantages according to the type of machine, its location and the frequency of vibration. Again, we urge consultation with our organization to secure best results.

Density	Weight Lb/Bd Ft		Loading Lb/Sq Ft	
	Minimum	Maximum	Minimum	Maximum
Light	.55	.65	400	2000
Standard	1.0	1.4	1500	4000
Heavy	1.4	1.7	3500	8500

Novoid Machinery Isolation is manufactured in sheets 12 x 36 inches, in 1, 2, 3, and 4 in. thicknesses, and in three densities to cover a load range from 400 to 8500 pounds to the square foot.

CORK IMPORT CORPORATION

39 PARK PLACE ENGLEWOOD, NEW JERSEY

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3

CORK INSULATION CO., INC.

CORK

CORINCO insulation products

Cork Insulation Company, Inc.

The Cork Insulation Company, Inc., maintains at Wilmington, Delaware, a most modern and efficient factory for the manufacture of Corinco Corkboard, Cork Covering, Cork Tile and all of our other products. At Wilmington we have complete facilities for unloading raw material purchased from the Mediterranean area by our own representatives, who have been long trained and who are thoroughly familiar with all sources of raw cork supply.

Over the years we have developed and added new and better equipment to insure the maintenance of an efficient plant, second to none, for the manufacture of cork products.

Engineering and erection service

Cork Insulation Company, Inc., has branches in principal cities throughout the country, staffed by trained and competent insulation engineers. The company also has a wide distribution and service coverage through insulation contractors who act as distributors in most of the important cities throughout the country. This combined organization is in a position to give complete engineering service, and stocks are carried by all of our branches and many of our distributors to insure prompt and efficient service regardless of geographical location.

Our own factory branches and our insulation contractor distributors are in position to offer complete technical service for the handling of insulation problems. They are capable of furnishing help and advice to insure the proper type, thickness and method of installation together with recommendations for the proper sundries which should be used for the application of Corinco products. Our organization can, of course, make surveys, furnish specifications, give estimates and quote prices on bills of material or complete erected jobs.

CORK

Unique cellular construction

The thick outer bark of the cork oak tree is not fibrous but is made up of millions of tiny cells. These tiny cells, which imprison small quantities of air, average approximately 1/1000 of an inch in diameter and are separated from each other by a microscopic strand of resinous gum.

It has been proven that, next to a complete vacuum, a minutely divided air space is one of the most effective barriers against the passage of heat and cold.

Cork, then, by its peculiar cellular structure, is a natural insulator.

Manufacturing processes

In the manufacture of cork insulation products the raw cork bark is ground into granules varying in size from 3/8 to 3/4 of an inch. These granules, without any added binder, are poured into ovens which serve as molds.

The granules are then baked with high pressure steam under complete automatic control both as to temperature and pressure, which insures material of uniformly high quality.

When the blocks are removed from the molds they are slowly cooled and then passed through sizing machines.

Uses

Corinco Insulation Products are extensively used where control of temperatures is desirable or essential, whether it be a small room or a complete building.

The piping, ducts and other equipment in connection with all types of temperature control and processing must necessarily be insulated, and again Corinco Cork Products have been proven the ideal material.

Special advantages of cork insulation board

1. Low thermal conductivity

Because of its low thermal conductivity, cork is generally recognized as the standard material in the low temperature insulating field. It is common parlance in the refrigerating and low temperature trades to speak of insulation materials in terms of "cork equivalent".

Although laboratory tests have indicated that a few materials show a lower conductivity than cork, *under actual operating conditions* cork has a K factor of .25 to .27. This fact, together with its other special characteristics, makes cork the best answer to low temperature insulation problems.

2. High resistance to moisture and capillarity

Low temperature insulation, to be satisfactory, must retain its operating efficiency over long periods and must be able to resist the deteriorating effects of moisture. Cork, being cellular rather than fibrous in nature, has a natural buoyancy and resistance to water.

This inherent resistance to water is further fortified by processing. This processing has two very important effects. First, it drives out any remaining sap or moisture in the air cells, thus increasing the amount of dry imprisoned air in the cork. Second, it heats up and melts the natural resinous gums surrounding the cells. This melted gum flows through the entire mass of granules and binds them together into a single air-tight and water-proof board.

3. Fire retardant

Many will undoubtedly remember charring a cork stopper to be used as "make-up" in childhood activities. The cork always ceased to burn as soon as it was removed from the flame.

Various laboratories have conducted fire tests on cork and other materials in accordance with the methods prescribed by the United States Bureau of Standards. In no instance did the flame break through the cork being tested. All other materials tested, however, were either completely consumed or the binder burned out, leaving an ash residue or a mass of inorganic material.

As soon as the flame was removed the cork ceased to burn and all smoldering stopped within one minute. The other materials continued to flame or smolder until completely consumed. The substitute materials were classed as "combustible" while cork was described as "fire retardant".

4. Structural strength and erecting advantages

Another outstanding advantage of cork over other insulating materials is its structural strength. Cork will stand tremendous loads up to many thousands of lbs. per sq. ft., and will retain its high insulating efficiencies under such loaded conditions.

From an erecting and applying standpoint, cork has numerous excellent qualities. It can be readily cut or sawed with ordinary tools, is furnished in sizes which are easily handled, is extremely resilient, quite flexible and, last but not least, it presents no hazards and contains no abrasive materials which might be harmful to workmen.

5. Sanitary, rot and vermin proof

Sanitation measures demand that an insulating material shall not harbor vermin or germs, that it shall be free from offensive odors, and that it shall not disintegrate. Cork has no natural odor, and, since no glue, pitch, or other artificial binder is used in its manufacture, cork can be applied with the knowledge that it will neither disintegrate nor be attacked by insects or vermin.

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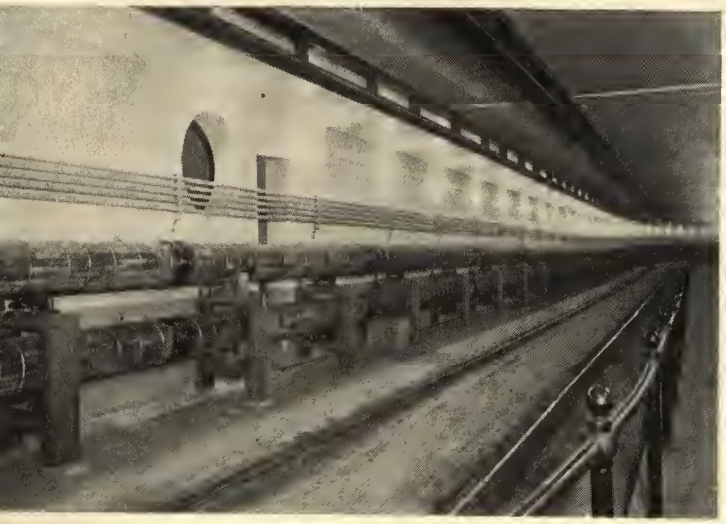
Application of two-layer insulation on large roof deck.

Exterior of low temperature room showing anteroom and overlapping type freezer door.



Long run of large size cork pipe covering in tunnelway.

Elevated cold storage room in process of construction, showing temporary wood studs on solid cork wall.

Cold storage room (above), showing completed solid cork walls with plaster finish.

Insulated wall showing application of scratch coat plaster over corkboard.

Typical Corinco installations

10b

CORINCO corkboard for cold storage insulation

Recommended storage temperatures (in degrees F)

Apples	31–33
Asporogus	32–35
Beons (dried)	32–45
Beef (fresh)	33–37
Beef (dried)	36–40
Beer (barrels)	32–38
Beer (bottles)	45
Berries (fresh, 10 doys)	35–40
Butter	10–32
Butter (to freeze)	20–22
Cabbage	31–35
Cantaloupes	40
Corrots	32–35
Celery	31–35
Cheese	28–35
Chocolate (dipping room)	65
Chocolate (to cool)	40
Cider	30–35
Cigors	35–42
Cronberries	32–40
Cream	33–35
Cucumbers	36–38
Dotes	45–55
Eggs	30–35
Fish (fresh)	20–30
Fish (fresh-woter frozen)	17–20
Fish (conned)	33–36
Fish (dried)	25–40
Flowers (cut)	36
Fruits (canned)	30–40
Fruits (dried)	35–40
Furs (undressed)	35
Furs (dressed)	25–35
Gropes	30–36
Homs (not brined)	20–35
Hogs	30–33
Honey	36–45
Hops	32–35
Ice	28
Ice Cream	15
Lard	33–40
Lemons	35–55
Maple Syrup and Sugar	40–45
Meats (canned)	30–40
Meats (brined)	35–43
Meats (fresh)	33–35
Melons	35–36
Milk	32–38
Nuts (in shells)	30–40
Nursery Stock	30
Oatmeal	38–42
Oleomargorine	20–35
Onions	32–36
Oranges	32–45
Oysters (tubs)	25–35
Oysters (shells)	33–43
Peoches	31–45
Peors	30–36
Pork	20–34
Potatoes	34–50
Poultry (frozen)	10–30
Poultry (to freeze)	0–22
Poultry (long carry)	10–30
Raisins	55
Salt Meat Curing Room	32
Sardines (canned)	35–40
Souerkraut	35–38
Sausoge Cosings	20–30
Scallops (frozen)	16
Syrup	35–45
Tobocco	35–42
Watermelons	34–40
Wines	40–50
Woolens	25–28

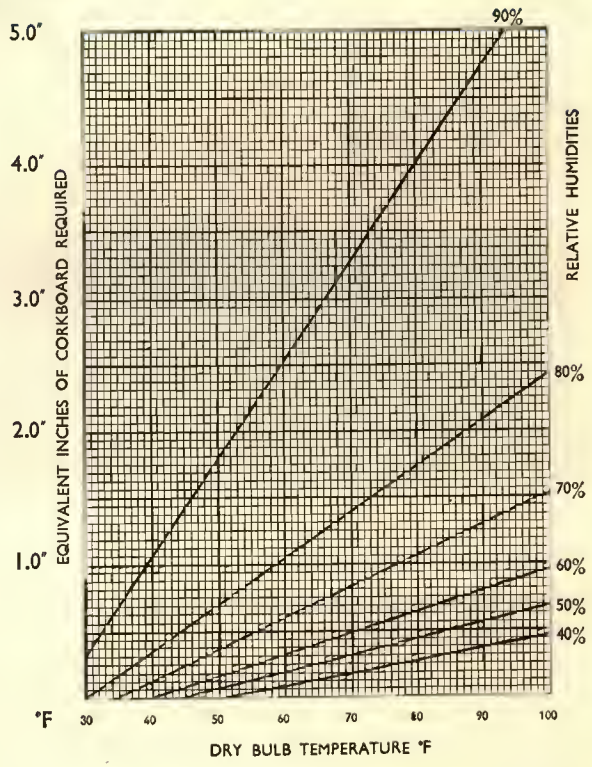
Thicknesses of insulation required for various temperatures

The table at right is a general guide for the thickness of insulation to be used at various temperatures. We suggest that your specific problem be presented to us in order that our engineers can make recommendations as to the proper thickness of insulation, method of application, etc.

Room temperature	Corkboard thickness
45° and above	2″
35° to 45°	3″
20° to 35°	4″
5° to 20°	5″
−5° to +5°	6″
−20° to −5°	8″
−50° to −20°	10″
−100° to −50°	12″

Chart to determine corkboard thickness to prevent condensation

Many industries have condensation problems. The chart below may be used as a guide to determine the proper thickness of corkboard which should be applied, based on outside temperatures in this country.



Deflection of Corinco corkboard under load

Tests based on 2 inch thick material one square foot in area.

Tests made by Smith-Emery Company, 920 Santee Street, Los Angeles, California (associated with Pittsburgh Testing Laboratory).

Total load	Deflection
900 lbs.	0.0625″
2300 lbs.	0.1250″
3200 lbs.	0.1875″
3600 lbs.	0.2500″
5000 lbs.	0.3250″

General recommendations for installing Corinco corkboard

Walls. Air tends to move through the walls of a cold storage space toward the low temperature side. When this occurs, the moisture in the air will be deposited if the dew point is reached. Should this condensation of moisture take place in the body of the insulation, its efficiency would be seriously impaired.

Theoretically the outer wall surface of the building is the ideal place to waterproof and vaporproof against infiltration. Unfortunately this is impossible in most cases and the only alternative is to treat the inside of the wall before erecting the insulation.

Although both cement mortar and hot asphalt are specified for erecting wall cork, asphalt is recommended as it provides protection against air infiltration.

On very high walls, it is advisable to provide additional supports for the cork by installing intermediate horizontal or vertical wood stays bolted to the walls.

Ceilings. The preferred method of insulating ceilings is to place the insulation on top of the floor above, connecting it with the wall insulation through slots around the floor. Where slots cannot be provided ribbands of cork should be installed on the ceiling below, adjacent to the wall, to eliminate heat loss through the ceiling structure at this point.

On new concrete structures where insulation must be placed on the underside of the ceiling slab, the cork should be placed in the forms before concreting rather than to apply to the insulation to the underside of the finished slab.

If this method is not feasible it is necessary to use one of the less desirable forms of installation, such as erection with cement mortar or hot asphalt. Where the cork is erected with cement mortar it is important to securely prop the cork—this method is not recommended for ceilings of any considerable size. Where hot asphalt is used, wood nailing strips should first be bolted to the concrete, and the cork securely nailed thereto.

Floors. Floor insulation is very important, as the laws of Nature direct cold air downward. Unless the floor is sufficiently insulated in comparison to the room temperature carried, the refrigeration loss over a period of time will be substantial and costly.

Roofs. Roof insulation is generally placed immediately on top of the structural roof and the membrane applied directly to the cork surface. This is the ideal method of preventing infiltration of air. Since the roof exposure is usually greater than that of any other exterior surface of the building, it is advisable to provide more insulation at that point.

SPECIFICATIONS

Notes: The following specifications are given to cover typical conditions which are commonly encountered. For special conditions, details of the most satisfactory type of installation and specifications will be gladly supplied by insulation engineers who are available at our main office, branch offices, and offices of our distributors.

The following specifications are based on two-layer construction. For single layer construction, apply as described for the first layer only.

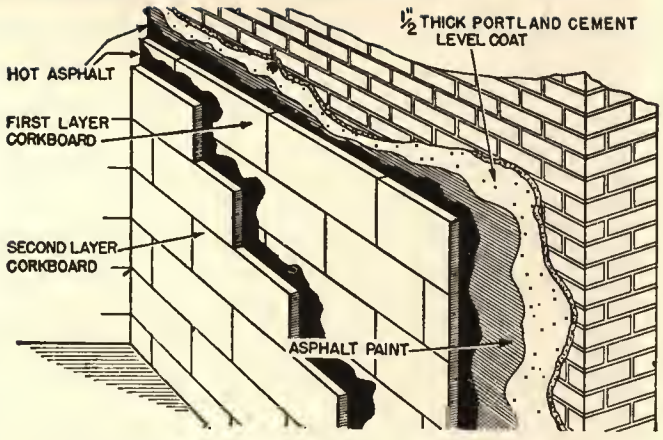
WALLS—masonry

(Two layers of Corkboard, both layers applied in hot asphalt.)

The surfaces of all masonry walls against which Corkboard is to be applied must be thoroughly cleaned of all dirt, dust, loose mortar, etc. Where necessary to permit 100% contact of Corkboard they shall be made true and level with Portland cement plaster, mixed in proportions of approximately one part Portland cement and three parts of clean, sharp sand. A small amount of hydrated lime may be added, not exceeding 5%. Wall surfaces against which this leveling coat is to be applied should first be roughened to insure a proper bond. The plaster shall be applied in one or more coats, and be of a thickness to cover all high points. It shall be straightened with a straightedge and floated to a smooth finish.

After the plaster has thoroughly dried, one good coat of Corinco Asphalt Priming Paint shall be applied. When the paint has dried sufficiently, the first layer of Corinco Corkboard shall then be applied in hot asphalt.

A second layer of Corinco Corkboard shall be applied in hot asphalt, and additionally secured to the first with wooden skewers.



All joints must be butted tight, proper care being exercised to keep all edges and ends clean. Vertical joints in the first layer must be broken, and all joints in the second layer broken with respect to those in the first.

The exposed surfaces of Corkboard shall be finished as described under "Finishes".

WALLS—wood sheathed

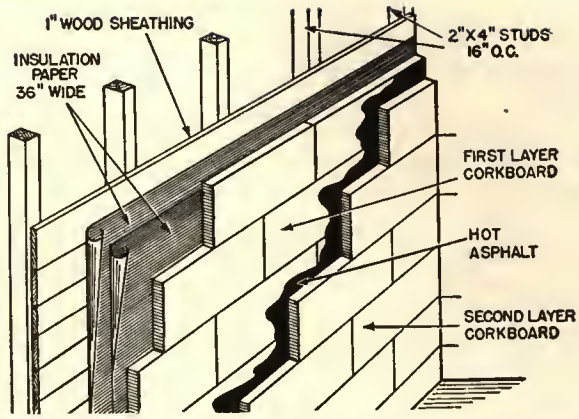
(Two layers of Corkboard, first layer nailed—second layer applied in hot asphalt.)

Directly against the wood sheathing two layers of waterproof insulating paper shall be applied, with edges well lapped.

The first layer of Corinco Corkboard shall be applied against the paper, and secured to the wood sheathing with special flat head galvanized wire nails of proper length.

The second layer of Corinco Corkboard shall be applied in hot asphalt, and additionally secured to the first layer with wooden skewers.

All joints must be butted tight, proper care being exercised to keep all edges and ends clean. Vertical joints in the first layer must be broken, and all joints in the second layer broken with respect to those in the first layer.



The exposed surfaces of Corkboard shall be finished as described under "Finishes."

PARTITIONS—cork—self-sustaining

(Two layers of Corkboard, asphalt or cement mortar between.)

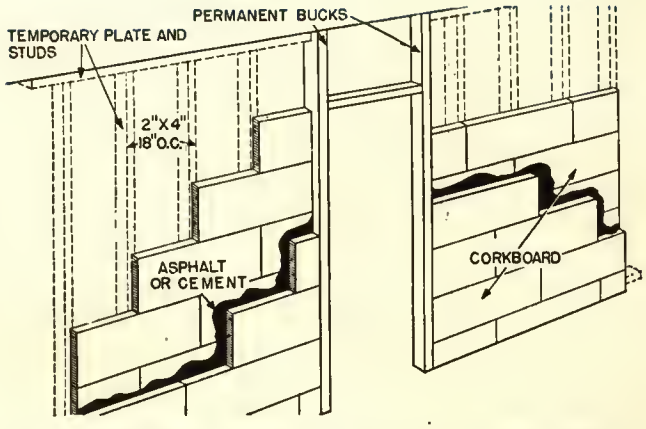
Temporary 2 x 4 studs shall be erected 18" on center on a line with one side of the partition. Care must be exercised to have the studding plumb and in perfect alignment. (Where doors are to be set in partitions, permanent wooden bucks shall be set with wooden lintel between. Door bucks shall be securely anchored to floor and ceiling to withstand any shock due to opening and closing of doors.)

The first layer of Corinco Corkboard shall be erected on edge against temporary studs. Each corkboard shall be securely toe-nailed to the abutting one, and likewise to walls, floor and ceiling, wherever possible, with wooden skewers.

All joints must be butted tight, and vertical ones broken.

A. Second layer in asphalt: A second layer of Corinco Corkboard shall be applied in hot asphalt, and additionally secured to the first with wooden skewers.

B. Second layer in Portland cement mortor: The surface of the first layer shall be rough scratched with Portland cement mortar approximately ¼" thick, mixed one part Portland cement, and two parts clean, sharp sand. After this coat has set, a second layer of Corinco Corkboard shall be applied in Portland cement mortar approximately ¼" thick mixed in same proportions as for scratch



coat, and additionally secured to the first with wooden skewers.

All joints in the second layer must be butted tight, proper care being exercised to keep all edges and ends clean and broken with respect to those in the first layer.

Each exposed side of Corkboard partition shall be finished as specified under "Finishes."

Before removing temporary studs, finish the opposite side of partition.

CEILINGS—concrete

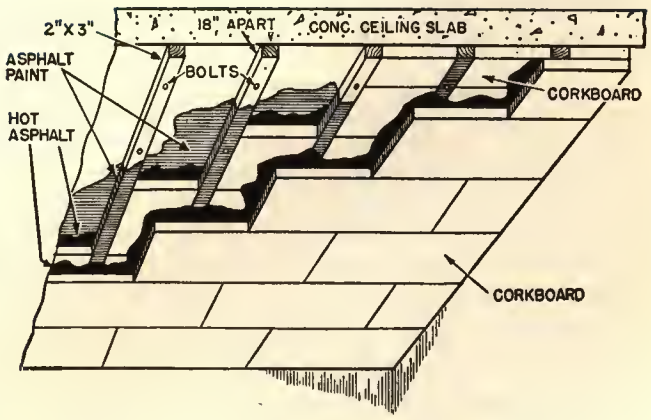
(Two layers of Corkboard, both layers applied in hot asphalt.)

The concrete ceiling slab must first be thoroughly cleaned of all dirt, dust, loose mortar, etc. Wooden nailing strips 2¾" wide x (thickness of first layer of corkboard) shall be affixed to the underside of the concrete ceiling with suitable anchors. Nailing strips shall be spaced 18" apart.

Both concrete slab and nailing strips shall then be given one good coat of Corinco Asphalt Priming Paint. When paint has dried, the first layer of Corinco Corkboard shall be applied in hot asphalt against the concrete slab, tightly fitted between nailing strips and toe-nailed to same with special head galvanized wire nails.

A second layer of Corinco Corkboard shall be applied in hot asphalt, additionally secured to the first layer with wooden skewers and nailed to nailing strips with special head galvanized wire nails.

All joints must be butted tight; all edges and ends kept clean. Joints in the second layer must be broken with respect to those in the first layer.



The exposed surfaces of Corkboard shall be finished as described under "Finishes."

CEILINGS—concrete

(Two layers of Corkboard, first layer applied in concrete forms, second layer applied in hot asphalt.)

The concrete ceiling forms in which the first layer of corkboard is to be placed shall be lowered (thickness of corkboard) and the first layer of Corinco Corkboard shall be laid dry in same. After concrete reinforcing has been laid, special head galvanized wire nails, 1½" longer than the thickness of the corkboard, shall be driven obliquely into the cork boards using approximately eight nails to each board. The heads shall be left protruding approximately 1½". The concrete shall be poured directly upon the corkboard.

After the concrete has set and the forms have been removed, a second layer of Corinco Corkboard shall be applied in hot asphalt, additionally secured to the first layer with wooden skewers.

All joints must be butted tight, keeping edges and ends clean, and transverse joints in the first layer broken. Joints in the second layer must be broken with respect to those in the first layer.

The exposed surfaces of Corkboard shall be finished as described under "Finishes."

CEILINGS—wood sheathed

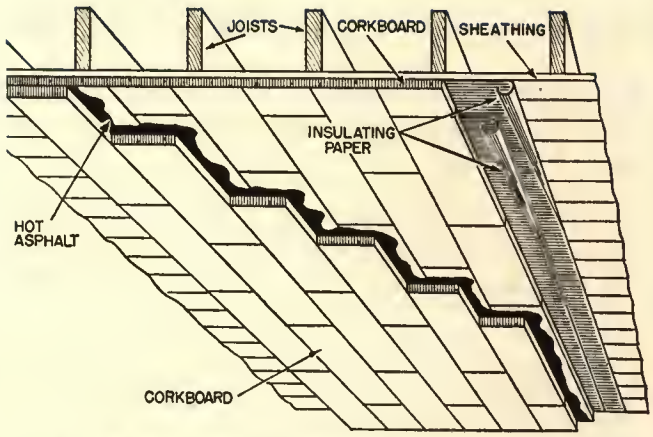
(Two layers of Corkboard, first layer nailed, second layer applied in hot asphalt.)

Directly against underside of wood sheathing two layers of waterproof insulation paper shall be applied, with edges well lapped.

The first layer of Corinco Corkboard shall be applied against paper secured to wood sheathing with special head galvanized wire nails.

A second layer of Corinco Corkboard shall be applied in hot asphalt additionally secured to the first layer with wooden skewers.

All joints must be made tight and proper care exercised to keep edges and ends clean. Transverse joints in first layer must be broken and all joints in second layer broken with respect to those in the first layer.



The exposed surfaces of Corkboard shall be finished as specified under "Finishes."

CEILINGS—tee-iron construction

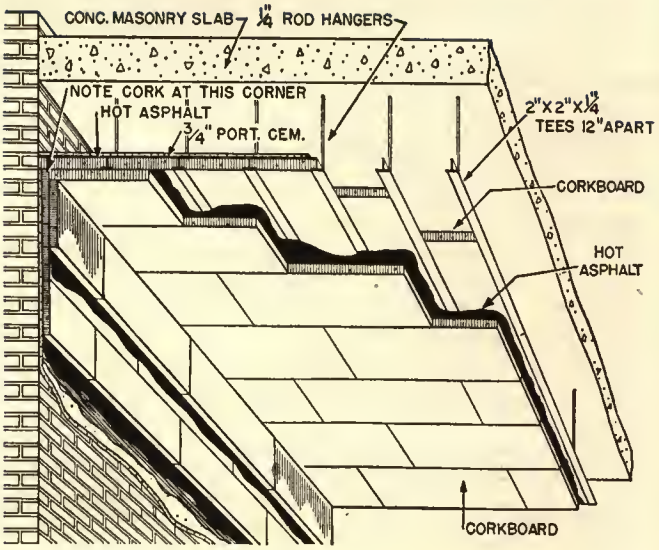
(Two layers of Corkboard, first layer laid between tee-irons, second layer applied underneath, in hot asphalt.)

The Tee-irons shall be 2" x 2" x ¼" spaced 12" or 18" apart, ends resting on walls or other supporting structures and securely fastened to same. The tees shall be supported every 10 or 12 feet in length by hanger rods or other suitable means.

The first layer of Corinco Corkboard shall be placed between the Tee-irons with the edges rabbeted to fit on flanges of the tees tightly and rest flush with the bottom. A heavy layer of hot asphalt shall be applied over the upper surface of corkboard, followed by a coat of Portland cement mortar approximately ¾" thick, mixed one part Portland cement and three parts clean, sharp sand screeded to a level finish.

A second layer of Corinco Corkboard shall be applied to the underside of the first layer in hot asphalt, additionally secured with wooden skewers.

All joints shall be butted tight and broken with respect to those of the first layer. The exposed surfaces of Corkboard shall be finished as described under "Finishes."



FLOORS—wood

(Two layers of Corkboard, both layers laid in hot asphalt.)

On top of wood sheathing or flooring two layers of insulating paper shall be laid, all edges well lapped.

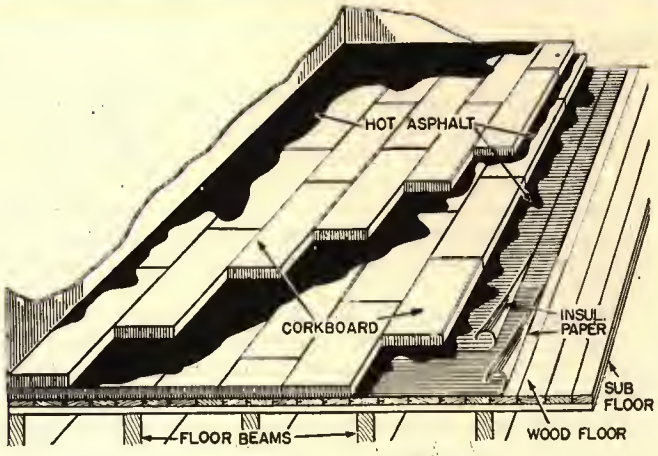
The first layer of Corinco Corkboard shall be laid in hot asphalt directly on top of insulating paper.

A second layer of Corinco Corkboard shall be laid in hot asphalt upon the first layer.

The upper surface of the second layer shall be given a heavy coat of hot asphalt, left ready to receive a protective wearing finish as described under "Finishes."

All joints must be butted tight, edges and ends kept clean.

Transverse joints in first layer must be broken. All joints in the second layer must be broken with respect to those in first layer.



Note: If a wooden wearing finish is to be installed over upper surface of second layer, wooden sleepers 4" wide by the thickness of corkboard used shall be inserted in second layer 18" or 24" apart.

FLOORS—concrete base

(Two layers of Corkboard, both layers applied in hot asphalt.)

The concrete base on which the insulation is to be applied must be smooth and level. The first layer of Corinco Corkboard shall be laid on top in hot asphalt.

A second layer of Corinco Corkboard shall be laid in hot asphalt upon the first layer.

The upper surface of the second layer shall be given a heavy coat of hot asphalt, left ready to receive a protective wearing finish as described under "Finishes."

All joints must be butted tight, edges and ends kept clean.

Transverse joints in first layer must be broken. All joints in the second layer must be broken with respect to those in first layer.

Note: If a wooden wearing finish is to be installed over upper surface of second layer, wooden sleepers 4" wide by the thickness of corkboard used shall be inserted in second layer 18" or 24" apart.

ROOFS—concrete and wood

(Two layers of Corkboard, both layers applied in hot asphalt.)

A slot shall be provided in concrete roof slab along all side walls wide enough to permit full thickness of insulation on walls joining with that of roof. (*See Section Fig. 1.*) The roof slab shall be smooth and level. Apply first layer of Corinco Corkboard in hot asphalt. Apply a second layer of Corinco Corkboard in hot asphalt on top of first layer. The upper surface of second layer shall be left uncoated over which a roofing membrane shall be laid. All joints must be butted tight, transverse joints in the first layer shall be broken and all joints in second layer shall be broken in respect to those in the first layer.

Note: If the insulation is to be applied on top of a wooden roof structure, one layer of waterproof insulating paper with the edges lapped at least 3" shall first be applied to the wood sheathing, and the insulation then applied in hot asphalt as specified for concrete slab.

Ribbands. In the event it is not possible to provide a slot in roof slab permitting the joining of wall and roof insulation, a ribband of cork shall be applied to the underside of slab. This ribband shall extend out from walls approximately 4'0" to 6'0" and shall be applied as per specifications for ceilings. (*See Section Fig. 2.*)

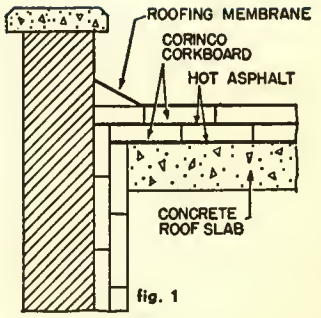


fig. 1

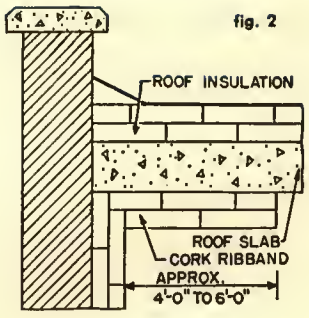


fig. 2

Heat loss table for roofs

Type of construction (with 5/8" roofing)	Heat loss with Corinco corkboard					
	No. ins.	1"	1½"	2"	3"	4"
2" concrete slab	.658	.206	.153	.122	.087	.067
3" concrete slab	.610	.201	.151	.120	.086	.067
4" concrete slab	.568	.197	.148	.118	.085	.066
6" concrete slab	.500	.187	.143	.115	.083	.065
2" yellow pine	.345	.160	.127	.105	.078	.062
3" yellow pine	.256	.138	.112	.095	.072	.058

FINISHES

1. Portiond Cement Finish. Finish exposed cork surfaces on walls and partitions with Portland cement plaster approximately ½" thick applied in two coats. Plaster shall be mixed in the proportions of 2 parts clean, sharp, brown sand, one part Portland cement, and not over 5% hydrated lime. The first coat shall be applied directly to cork surfaces and be approximately ¼" thick. This coat shall be scratched in two directions and allowed to dry before application of second coat.

The second coat shall be brought to an even surface by means of a darby or straight edge. After the plaster has set sufficiently, it shall be floated or troweled to a smooth, even finish. All angles and corners shall be clean and true, and outside corners protected with metal corner beads. To minimize shrinkage cracks, the plaster shall be scored into approximately three foot squares going through the finish to the scratch coat.

2. Corinco Mastic Finish. Finish the exposed cork surfaces of walls, partitions, ceilings, etc., in two coats. All surfaces to be finished shall be first thoroughly cleaned, removing film of dust and all loose particles, etc. The first coat can be either Mastiprime or Masticote as taken from the container and troweled on. This coat should be permitted to dry approximately twenty-four hours. The second coat can be (1) Masticote with two parts clean, sharp sand added on the job for each part Masticote, (2) Mastimix may be used for this second coat as it comes from the container as it already has sand incorporated. This second coat should be approximately 3/16" in thickness. After it has set sufficiently but before it has hardened, which will depend upon drying conditions, these surfaces shall be finished with a steel trowel.

These materials should not be applied at temperatures below zero.

3. Monolithic Concrete Weoring Floor. A Monolithic concrete wearing floor shall be laid over the floor insulation approximately 3" thick at the low point and sloping to drain approximately 1" in ten feet. Screeds shall be set to determine the proper level or slope. The concrete shall be mixed one part Portland cement, 2 parts clean, sharp sand, and 4 parts of crushed stone or gravel, and only wet enough to flush under slight tamping.

After the concrete has sufficiently set, it shall be floated to a smooth, even surface and then finished with a steel trowel.

COLD STORAGE DOORS

It is highly important that scientifically designed, well constructed cold storage doors of the proper size and type be used in connection with all refrigerated rooms. As a matter of fact, these doors constitute practically the only moving part of a cold storage room and as they are constantly used should swing easily, close tightly and, of course, be well insulated. Corinco corkboard has proven an excellent insulation material for all types of cold storage doors for the same reasons that make it the top insulation material for the room itself. In general, doors are of two types, the infitting type for moderate temperatures and the overlapping super freezer door for low temperatures. In conclusion, it is strongly suggested that an experienced insulation engineer be consulted as to the exact type of door best suited to the problem at hand, and, secondly, that pure corkboard be specified as the insulation.

FREEZING TANKS

Specification No. 1

(Two layers of Corkboard on bottom, sides adjacent building walls insulated with regranulated cork.)

Bottom. The floor slab is to be smooth and level on which the first layer of Corinco Corkboard shall be embedded in hot asphalt. The second layer of Corinco Corkboard shall be applied on top of the first layer in hot asphalt, and the upper surface flooded with a heavy coat of the same material. The insulation must extend to the outside of the insulation on the sides of the tank. All joints shall be butted tight and transverse joints in the first layer broken. All joints in the second layer shall be broken with respect to those in the first layer.

Sides. The building wall shall be mopped with hot asphalt to height of tank. The space between wall and tank, approximately 12" wide, shall then be filled in with regranulated cork well tamped in place.

Over the top of the side insulation and extending in to meet the can framing, a curbing shall be constructed consisting of two layers of ⅞" Tongue and Groove boards with two layers of waterproof insulating paper between. The curbing shall be properly supported.

Specification No. 2

(Two layers of Corkboard on bottom with regranulated and corkboard on exposed sides.)

Bottom. The bottom shall be insulated as described in Specification No. 1.

Sides. 2x4 studding shall be erected against the sides of tank on 18" centers. One layer of corkboard shall be nailed to studding with special galvanized nails. The space between the corkboard and tank shall be filled with regranulated cork well packed in place.

All joints between cork boards shall be butted tight and vertical joints broken. The exposed surfaces of corkboard shall be finished as described under "Finishes".

A curbing shall be installed over top of insulation suitably supported as described in Specification No. 1.

Specification No. 3

(Two layers of Corkboard on bottom, sides regranulated cork.)

Bottom. The bottom shall be insulated as described in Specification No. 1.

Sides. 3x4 studding approximately 18" on centers shall be erected approximately 12" away from the tank sides. Studding shall be sheathed on the outside with two layers of ⅞" Tongue and Groove boards with two layers of insulating paper between. The first layer of Tongue and Groove boards shall be nailed horizontally and the second layer vertically. The space between the tank and the retaining wall shall be filled with regranulated cork well tamped in place.

The curbing as described in Specification No. 1 shall be constructed over the top of the side insulation and extending in to meet the can framing.

SUNDRIES

Corinco Fine Regranulated Cork. Baked ground cork. Passes 8 mesh screen. Excellent fill insulation. Packs approximately 6 lbs. per cubic foot. Shipped in bags 25 to 30 lbs.

Corinco 8/20 Granulated Cork. Unbaked ground cork. Passes through 8 mesh screen. Retained on 20 mesh screen. Has many industrial and commercial uses. Packs approximately 10 lbs. per cubic foot. Shipped in bags 35 to 40 lbs.

Corinco Erection Asphalt. High grade odorless cold storage asphalt 180°-190° melting point, furnished in 100 lb. cartons or 450 lb. drums. Can also be furnished 240° melting point for jobs where temperatures might run excessively high. Average covering capacity, 4/10 lb. per sq. ft.

Corinco Coldphalt. Odorless liquid erection asphalt to be used in place of hot asphalt when the latter would be objectionable due to the fumes or on a small job when the cost of handling and heating regular asphalt would be excessive. Weight approximately 11½ lbs. per gal. Covering capacity 25 sq. ft. per gal.

Corinco Asphalt Priming Paint. Cut back type asphalt primer for priming masonry, plaster or metal surfaces before application of insulation. Covering capacity about 150 sq. ft. per gal. Weight 11 lbs. per gal.

Corinco Mastiprime. (A straight asphalt emulsion without fibre.) To be used for the priming coat of two coat emulsion finish. Covering capacity about 30 sq. ft. per gal. troweled on. Weight 11 lbs. per gal. Fibre and/or sand can be mixed with this material at job site.

Corinco Masticote. Trowel coat asphalt emulsion with asbestos fibres added to be used as second coat asphalt emulsion with Mastiprime. Covering capacity about 15 sq. ft. per gal. Weight 11 lbs. per gal. Sand can be mixed with this material at job site.

Corinco Mastimix. Pre-mixed asphalt emulsion containing fibre and sand ready to apply on primed insulation surfaces to give added finish. Covering capacity approximately 10 sq. ft. per gal. Weight 12 lbs. per gal.

Corinco Weathercote. An excellent protective coating, emulsion type, heavily asbestos fibred for weatherproofing surfaces exposed to the elements. Covering capacity 15 sq. ft. per gal. (⅛" thickness). Weight approximately 12 lbs. per gal.

Corinco Aluminum Cold Storage Paint. High quality aluminum paint for use over asphalt emulsion surfaces. An excellent sealer to prevent asphalt from bleeding through. Can be used either as a primer for other paints or left as aluminum finish if desired. Covering capacity 250 sq. ft. per gal., two coats. Weight 10 lbs. per gal.

Corinco Cold Storage Enamel. A high quality enamel for use over asphalt emulsion. Asphalt will not bleed through. One coat satisfactory but two coats recommended. Covering capacity 300 to 350 sq. ft. per gal., one coat brush job; 350 to 450 sq. ft. per gal., one coat spray job. Weight 12½ lbs. per gal.

Corinco Gumbo Cement Type H. A waterproof heavy consistency cement, very suitable for erecting single layer insulation against metal ducts, plaster, glass and other surfaces. Covering capacity 30 to 35 sq. ft. per gal. Best applied with notched trowel. Weight 12 lbs. per gal.

Corinco Gumbo Cement Type M. A waterproof cement very similar to Corinco Gumbo Type H except lighter consistency. Covering capacity 40 to 50 sq. ft. per gal. Best applied with notched trowel. Weight 12 lbs. per gal.

Corinco Waterproof Cork Covering Cement. A high grade cement of proper consistency for the application of cork pipe covering. Used to cement the two halves of cork pipe covering, fitting covers and cork lagging. Covering capacity per gal. about 35 sq. ft. of cork surface. Weight approximately 14 lbs. per gal.

Corinco Cork Covering Paint. A waterproof asphaltic base paint for cork pipe covering and fittings. Can be used for protective asphalt coating on practically all types of surfaces. Covering capacity on cork pipe covering approximately 150 sq. ft. per gal. Weight 11 lbs. per gal.

Corinco Cork Covering Seam Filler. A filler of heavy consistency for the sealing of joints in cork pipe covering and fittings. Figure about 200 lineal feet of joint per gal. Weight 12 lbs. per gal.

Corinco Brine Putty. For filling joints between pipe fittings and cork fitting covers. Also used for filling voids of all kinds in cold storage work. Weight about 54 lbs. per cubic foot.

Corinco Paraffin and Cork Dust. 60% paraffin, 40% cork dust by weight. Paraffin to be melted and mixed with the dust at the job site. Can be used instead of Brine Putty between cork pipe covers and fittings.

Corinco Copper Clad Steel Wire. Copper jacketed steel wire for the application of cork covering or for wiring insulation on ducts and tanks. Gauges of wire to be used for various sizes of pipe covering are as follows:

Covering (in.)			B. & S. wire go.	Diom. of wire (in.)	Feet per pound	Wt. per lineal foot of wire (lbs.)
Light Duty	Standard	Heavy Duty				
¼ to 3	¼ to 1½	¼ to ¾	14	.064	86.95	.0115
3½ to 10	2 to 8	1 to 6	12	.081	54.63	.0183
12 and up	9 and up	8 and up	10	.102	34.36	.0291

Corinco Insulating Paper. Glazed waterproof paper weighing about 35 lbs. per roll. Excellent air stop for applying over wood sheathing before erection of insulation.

Corinco Special Head Galvanized Wire Nails. For erecting first layer of insulation. In general, figure 2 nails per square foot on walls, 3 nails per square foot on ceiling.

Length (in.)	Lbs. per nail
3	.0166
3½	.0192
4	.0222
5	.0333
5½	.0344
6½	.0435
7½	.05

Corinco Skewers. Treated hardwood skewers. For applying second and additional layers of insulation. Packed 1000 per carton.

Size (in.)	Net wt. per M (lbs.)
4½ x ¼	5
5 x ¼	5½
5½ x ¼	6½
6 x ¼	7
6½ x ¼	7½
7 x ¼	10

Applying cork covers on screwed fittings.

Securing covering with copper clad wire.

Above: Smoothing joints and chipped edges with seam filler. *Below:* Finishing with Corinco Cork Covering Paint.

CORINCO MOLDED CORK PIPE COVERING

It is important that all refrigerant and other cold lines be insulated for the following reasons:

1. To save the loss in refrigeration which can amount to a very substantial sum, depending, of course, on the length and size of the exposed piping and the temperatures carried.

2. To eliminate unsanitary conditions which result from moisture continually dripping from cold lines together with ending the unsightly appearance of this condition.

3. To greatly increase the life of the piping and equipment which is insulated as well as adjacent surfaces.

Corinco cork pipe covering is the ideal insulation for cold storage lines because:

1. It has high insulating efficiency.

2. It will last for many years due to the natural cellular construction plus the addition of a heavy mineral rubber finish.

3. It is furnished in exact dimensions to fit all sizes and types of pipe and fittings.

4. It is easily installed with a minimum amount of labor and requires little maintenance.

5. It will stand any reasonable amount of abuse and is not affected by moisture.

Minimum temperatures for various thicknesses of cork insulation

Figures in table are degrees Fahrenheit based on air temperature of 70° and with relative humidities up to 70% at 70° air temperature.

Pipe Diam. (in.)	Light Duty	Standard	Heavy Duty	Special Wall Thickness								
				4"	5"	6"	7"	8"	9"	10"	11"	12"
¼, ⅜, ½	20	−5	−70									
¾-1	20	−5	−70									
1¼-1½	25	0	−60									
2-2½	30	0	−50									
3-3½	30	0	−50									
4	35	0	−45	−55	−95	−140	−190	−235	−270			
5	35	0	−45	−50	−85	−125	−170	−215	−250			
6	40	0	−40	−40	−80	−120	−160	−200	−235	−265		
8	40	10	−35	−35	−70	−105	−140	−180	−215	−250		
10	50	10	−30	−30	−60	− 95	−130	−165	−200	−235	−270	
12	50	15	−30	−30	−60	− 90	−120	−160	−200	−235	−270	
14	50	15	−30	−30	−60	− 85	−120	−155	−190	−225	−260	
16	50	20	−30	−30	−55	− 85	−115	−145	−180	−215	−250	
18	50	20	−30	−30	−50	− 80	−110	−140	−170	−200	−240	−280
20	50	20	−25	−25	−50	− 75	−105	−135	−165	−195	−225	−255
22	50	20	−25	−25	−50	− 75	−105	−135	−165	−195	−225	−255
24	50	20	−25	−25	−50	− 75	−105	−135	−160	−190	−220	−250
30	50	20	−25	−25	−50	− 70	−100	−130	−160	−185	−210	−240
36	50	20	−25	−25	−45	− 70	−100	−125	−155	−180	−205	−230
42				−20	−45	− 70	−100	−125	−150	−175	−200	−225
48				−20	−45	− 70	− 95	−120	−150	−175	−195	−220
54				−20	−45	− 65	− 95	−120	−145	−170	−190	−215
60				−20	−45	− 65	− 95	−115	−145	−170	−190	−210
72				−20	−40	− 65	− 90	−110	−135	−160	−180	−200
84				−15	−40	− 60	− 85	−105	−130	−150	−170	−195
96				−15	−35	− 55	− 80	−100	−125	−145	−165	−190
106				−15	−35	− 55	− 75	− 95	−120	−140	−160	−185
120 and over				−15	−35	− 50	− 70	− 90	−115	−135	−155	−175

CORK COVERING SPECIFICATIONS

(All necessary sundries for application are included with the covering at no extra charge.)

All pipe and fittings should be clean, dry and free of rust. Cork covering of the proper thickness should be applied by cementing the half sections of covering together with Corinco Waterproof Cement, the joints being placed top and bottom. All voids between cork fitting covers and the pipe fittings should be filled with Corinco Brine Putty before applying the insulation, or should be poured using a mixture of paraffin and cork dust after the fitting covers have been applied. The cork covering should then be securely fastened by means of copper clad steel wire (stainless steel can be furnished at slight additional cost) spaced every eight inches on straight pipe covering and in accordance with best standard practice on fitting covers. All joints and seams in the covering and fittings should then be filled with Corinco Seam Filler after which the covering should be given a good coat of Corinco Cork Covering Paint.

Special Protective Finishes

(A) In places where humidity is extremely high or where maintenance would be unlikely or difficult it is recommended that the cork covering be wrapped with insulating tape of appropriate width (2" to 4"), and then given an additional coat of Cork Covering Paint.

(B) Where cork-insulated lines pass through kitchens, corridors or other spaces where asphalt finish might not be desirable, the insulation can be finished with a six- or eight-ounce canvas jacket neatly pasted (or sewed) in place.

(C) Where cork-insulated lines are exposed to the elements or other severe conditions they should be covered with a good quality roofing jacket secured in place with copper clad or stainless steel wire. Fitting covers or other surfaces which, due to their contour preclude the application of roofing paper, should be covered with a heavy coat of Corinco Weathercote.

(D) Where extreme conditions exist and it should be desirable to further protect cork covering against unusual abrasion or weather conditions it should be covered with a galvanized metal jacket applied over the insulation in accordance with best standard practice.

DUCT INSULATION

Metal ducts are, in effect, square, rectangular or round pipes for the conveying of air. The insulation of ducts is extremely important due to the considerable surface area and they must be *well insulated* to maintain any semblance of efficiency in the system of which they are a part. Again, Corinco cork has proven an excellent material for all temperatures from the extreme minus to plus 180 degrees F. Corkboard is a fire retardant material, is easily applied, will last for years and its flexibility permits its use around bends and all curved surfaces. These advantages, together with its naturally high insulation efficiency, make cork the ideal insulation for air-diffusion systems.

DUCT INSULATION SPECIFICATIONS

All ducts should be cleaned and free of dust and all other material. Corinco corkboard should be applied over the areas to be insulated in one of the following manners:

(1) The corkboard should be coated with Corinco Gumbo Cement and firmly placed against the surface of the ducts. No shoring is required with this cement.

(2) The ducts should be primed with asphalt paint and the corkboard dipped in hot asphalt and then applied immediately to the primed surface.

(3) The corkboard can be applied directly to the ducts without cement or asphalt and securely fastened in place by drilling holes through the corkboard and the duct and fastening the corkboard with hardened metal screws and roofing caps.

After the ducts have been insulated in any one of the above manners the insulation can, if so desired, be additionally secured by means of metal bands and clips.

Finishes

The exposed surface of the corkboard can be finished in any one of the following manners:

(1) It can be left plain and all seams and joints buttered with asphalt emulsion.

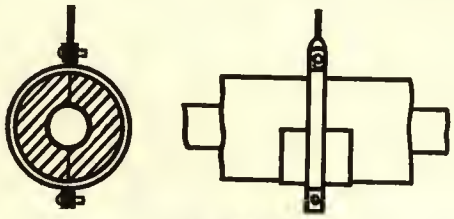
(2) All insulation surfaces can be given an asphalt emulsion finish applied in two coats to a total thickness of approximately ⅛".

(3) The insulation can be finished with either Portland or Asbestos cement plaster applied in two coats to a total thickness of approximately ⅜". (The use of wire mesh is optional as corkboard itself gives a good key for plaster finish.)

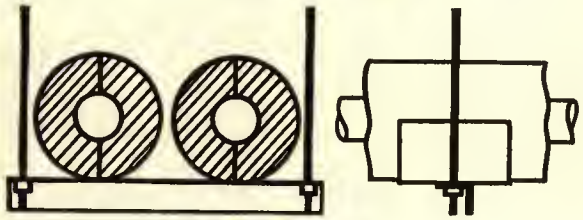
(3a) After the insulation has been plastered, if so desired, it can be covered with a six-ounce canvas jacket.

PIPE HANGERS

All pipe lines to be insulated with Corinco covering should be supported by hangers and the covering protected by a sheet iron shield where the pipe rests in the hanger. This shield should be shaped to fit the covering and should extend 4" away from each side of the hanger (see illustration below) and should extend up the sides to the level center of the pipe. It is not advisable to apply the hanger direct to the pipes.



Strap Hanger



Trapeze Hanger

SPACING TABLE

Thickness	Fittings	Space between parallel pipes (in.)	Space between pipes and adjacent surfaces (in.)
Light Duty	Screwed fittings up to and including 6"	6	4
	Screwed fittings larger than 6"	10	5
	Flanged fittings		
Standard	Screwed fittings up to and including 6"	8	6
	Screwed fittings larger than 6"	14	8
	Flanged fittings		
Heavy Duty	Screwed fittings up to and including 3"	10	8
	Screwed fittings larger than 3"	18	12
	Flanged fittings		

COMPARATIVE HEAT LOSSES

Transmission in B.T.U.'s per hour, per deg. F. diff. per lineal foot

How to use table

To determine the loss on 400 feet of 3-inch bare pipe, based on a temperature difference between the pipe and the outside air of 90 deg. per day, multiply number of feet by coefficient by temperature difference by 24 hours.

400 x 1.948 x 90 x 24 = 1,683,072 B.T.U.'s.

Dividing this by 288,000 (B.T.U.'s per ton) gives 5.844 the tons of refrigeration lost per day.

To determine the corresponding loss for insulated pipe substitute the coefficient for bare pipe with that of the contemplated insulation.

The saving effected by the use of cork insulation is the difference between tons of refrigeration lost for bare pipe and that lost through cork insulated pipe.

Nominal pipe size (in.)	Bare pipe	Cork insulation		
		Light Duty	Standard	Heavy Duty
¼	.452	.0802	.0713	.0611
⅜	.494	.0906	.0976	.0670
½	.566	.104	.0895	.0742
¾	.670	.111	.0973	.0829
1	.817	.121	.105	.0873
1¼	1.005	.135	.110	.0959
1½	1.130	.155	.116	.104
2	1.383	.175	.131	.113
2½	1.650	.207	.145	.132
3	1.948	.215	.157	.147
3½	2.20	.236	.167	.156
4	2.44	.254	.192	.163
5	2.97	.300	.211	.173
6	3.50	.328	.238	.187
8	4.45	.400	.276	.227
10	5.48	.457	.329	.268
12	6.48	.658	.377	.303
14	7.09	.712	.415	.327
16	8.15	.819	.462	.363
18	9.11	.867	.509	.405
20	10.10	.972	.553	.438

DIMENSION TABLE for Corinco cork covering

NOMINAL PIPE *(All dimensions are given in inches)*

Nominal pipe Size	O. D. pipe	LIGHT DUTY		STANDARD		HEAVY DUTY		Nominal 4" Wall thickness		Nominal 5" Wall thickness		Nominal 6" Wall thickness	
		O. D. Covering	Wall thickness	O. D. Covering	Wall thickness	O. D. Covering	Wall thickness	O. D. Covering	Wall thickness	O. D. Covering	Wall thickness	O. D. Covering	Wall thickness
¼	.540	3.25	1.36	4.25	1.86	5.88	2.67	8.87	4.16	11.12	5.29	12.25	5.86
⅜	.675	3.25	1.29	4.25	1.79	5.88	2.60	8.87	4.10	11.12	5.22	13.25	6.28
½	.840	3.25	1.21	4.25	1.71	5.88	2.52	8.87	4.01	11.12	5.14	13.25	6.20
¾	1.050	3.75	1.35	4.75	1.85	6.38	2.67	8.87	3.91	11.12	5.03	13.25	6.09
1	1.315	4.25	1.47	5.38	2.03	7.25	2.97	9.62	4.16	11.12	4.90	13.25	5.96
1¼	1.660	4.50	1.42	6.38	2.36	7.88	3.11	9.62	3.98	12.25	5.30	14.50	6.42
1½	1.900	4.75	1.43	6.88	2.49	7.88	2.99	9.62	3.86	12.25	5.18	14.50	6.30
2	2.375	5.38	1.50	7.25	2.44	8.88	3.25	10.12	3.88	12.25	4.94	14.50	6.06
2½	2.875	5.88	1.50	7.88	2.50	9.63	3.38	11.12	4.12	13.25	5.18	14.50	5.81
3	3.500	6.88	1.69	8.88	2.69	10.13	3.32	12.25	4.38	13.25	4.87	15.50	6.00
3½	4.000	7.25	1.63	9.63	2.81	11.13	3.57	12.25	4.13	14.50	5.25	16.00	6.00
4	4.500	7.88	1.69	10.13	2.81	12.25	3.88	13.25	4.37	14.50	5.00	16.50	6.00
5	5.563	8.88	1.66	11.13	2.78	13.25	3.84	14.50	4.47	15.56	5.00	17.56	6.00
6	6.625	10.13	1.75	12.25	2.81	14.50	3.94	14.50	3.94	16.62	5.00	18.62	6.00
8	8.625	12.25	1.81	14.50	2.94	16.63	4.00	16.62	4.00	18.62	5.00	20.62	6.00
10	10.750	13.75	1.50	16.75	3.00	18.75	4.00	18.75	4.00	20.75	5.00	22.75	6.00
12	12.750	15.75	1.50	18.75	3.00	20.75	4.00	20.75	4.00	22.75	5.00	24.75	6.00
14	14.000	17.00	1.50	20.00	3.00	22.00	4.00						
16	16.000	19.00	1.50	22.00	3.00	24.00	4.00						
18	18.000	21.00	1.50	24.00	3.00	26.00	4.00						
20	20.000	23.00	1.50	26.00	3.00	28.00	4.00						

Wall thickness over 6" will be actual thickness specified for all pipe sizes.

TUBING COVERING *(All dimensions are given in inches)*

Tubing O. D.	LIGHT DUTY		STANDARD		HEAVY DUTY		Tubing O. D.	LIGHT DUTY		STANDARD		HEAVY DUTY	
	O. D. Covering	Wall thickness	O. D. Covering	Wall thickness	O. D. Covering	Wall thickness		O. D. Covering	Wall thickness	O. D. Covering	Wall thickness	O. D. Covering	Wall thickness
⅜	3.25	1.43	4.25	1.93	5.88	2.74	2⅛	4.74	1.30	6.88	2.37	7.87	2.87
½	3.25	1.37	4.25	1.87	5.88	2.68	2⅝	5.38	1.37	7.25	2.30	8.87	3.12
⅝	3.25	1.30	4.25	1.80	5.88	2.62	3⅛	5.88	1.36	7.88	2.37	9.62	3.24
⅞	3.25	1.18	4.25	1.68	5.88	2.49	3⅝	6.88	1.62	8.88	2.62	10.12	3.24
1⅛	3.75	1.30	4.75	1.80	6.38	2.62	4⅛	7.25	1.55	9.63	2.74	11.12	3.49
1⅜	4.25	1.43	5.38	1.99	7.25	2.93	5⅛	7.88	1.37	10.13	2.49	12.25	3.55
1⅝	4.50	1.43	6.38	2.37	7.88	3.12	6⅛	8.88	1.37	11.13	2.49	13.25	3.55

TABLE 1 —LIGHT DUTY *(formerly Ice Water Thickness)*

Iron Pipe Size (in.)	Iron Pipe Covering per Lineal Foot	STANDARD (125 LB.) SCREWED FITTINGS		EXTRA HEAVY (250 LB.) and AMMONIA SCREWED FITTINGS		STANDARD, EXTRA HEAVY, AMMONIA FLANGED FITTINGS		←WELD and SWEAT→ FITTINGS	Copper Tubing Pipe Size (in.)	Copper Tubing Covering per Lineal Foot
		Ells (90° & 45°); Tees; Unions	Globe, Angle Gate Valves	Ells (90° & 45°); Tees; Unions	Globe, Angle Gate Valves	Ells (90° & 45°); Tees; Globe, Angle Gate Valves	Flanges	Ells (90° & 45°); Tees		
¼	$1.00	$1.30	$1.50	$1.40	$1.80*	$4.00	$1.60	$1.40	⅜	$1.00
⅜	1.00	1.30	1.50	1.40	1.80*	4.00	1.60	1.40	½	1.00
½	1.00	1.30	1.50	1.40	1.80*	4.00	1.60	1.40	⅝	1.00
¾	1.10	1.50	1.80	1.60	2.30*	4.50	1.80	1.50	¾, ⅞	1.10
1	1.20	1.60	2.30	1.80	3.10*	5.00	2.00	1.60	1⅛	1.20
1¼	1.30	1.80	3.10	2.00	4.00*	5.50	2.20	2.00	1⅜	1.30
1½	1.40	2.00	4.00	2.50	5.40*	6.30	2.40	2.20	1⅝	1.40
2	1.60	2.50	5.40*	3.00	6.80*	7.50	2.70	3.00	1⅞, 2⅛	1.60
2½	1.70	3.00	6.80*	3.50	8.30*	8.50	3.10	3.50	2⅜	1.70
3	2.20	3.50	8.30*	4.00	9.80*	9.70	3.50	4.20	3⅛	2.50
3½	2.60	4.00	9.80	4.50	11.30	11.00	3.90	4.80	3⅝	3.00
4	3.00	4.50	11.30	5.50	14.30	12.20	4.20	5.50	4⅛	3.50
5	3.50	5.50	14.30	6.70	17.30	14.50	5.00	6.70	5⅛	4.00
6	4.20	6.70	17.30	9.00	23.30	17.00	5.70	8.00	6⅛	5.00
8	5.50	13.50	23.30	16.50	29.00	33.00	12.20	16.00		
10	7.60					39.80	14.80	19.50		
12	8.60					47.30	17.40	23.50		
14	9.20					54.70	19.90	27.00		
16	11.30					62.30	22.40	31.00		
18	12.60					69.70	25.00	34.50		
20	14.00					77.30	27.50	38.50		
22	15.40									
24	16.80									
26	18.20									
28	19.60									
30	21.00									
32	22.40									
34	23.80									
36	25.20									

**Made in bath screwed and bolted bonnet patterns. Unless specified, we will furnish screwed bonnet for standard and extra heavy valves up to 2" and for ammonia valves up to 1½".*

Long Turn, Long Sweep, and Long Radius fitting covers take same price as respective regular fitting covers.

Sweat Valves take same price as standard screwed valves.

TABLE 2 —STANDARD *(formerly Brine Thickness)*

Iron Pipe Size (in.)	Iron Pipe Covering per Lineal Foot	STANDARD (125 LB.) SCREWED FITTINGS		EXTRA HEAVY (250 LB.) and AMMONIA SCREWED FITTINGS		STANDARD, EXTRA HEAVY, AMMONIA FLANGED FITTINGS		←WELD and SWEAT→ FITTINGS	Copper Tubing Pipe Size (in.)	Copper Tubing Covering per Lineal Faat
		Ells (90° & 45°); Tees; Unions	Globe, Angle Gate Valves	Ells (90° & 45°); Tees; Unions	Globe, Angle Gate Valves	Ells (90° & 45°); Tees; Globe, Angle Gate Valves	Flanges	Ells (90° & 45°); Tees		
¼	$1.20	$1.50	$2.00	$1.60	$2.20*	$6.00	$2.30	$1.70	⅜	$1.20
⅜	1.20	1.50	2.00	1.60	2.20*	6.00	2.30	1.70	½	1.20
½	1.20	1.50	2.00	1.60	2.20*	6.00	2.30	1.70	⅝	1.20
¾	1.30	1.70	2.20	2.00	3.00*	7.00	2.70	2.00	¾, ⅞	1.30
1	1.50	1.90	3.00	2.40	4.20*	8.40	3.10	2.30	1⅛	1.50
1¼	2.00	2.50	4.20	2.90	5.50*	9.50	3.50	3.00	1⅜	2.00
1½	2.30	3.00	5.50	4.00	8.00*	11.00	3.90	3.60	1⅝	2.30
2	2.40	3.70	8.00*	4.90	10.30*	13.50	4.70	4.50	1⅞, 2⅛	2.40
2½	3.00	4.70	10.30*	5.80	12.00*	16.00	5.50	5.50	2⅜	3.00
3	3.50	6.30	12.00*	7.00	15.00*	18.50	6.30	7.00	3⅛	3.70
3½	3.80	7.50	15.00	8.40	17.50	21.00	7.10	8.50	3⅝	4.20
4	4.00	8.60	17.50	10.00	22.50	23.50	7.90	9.50	4⅛	4.60
5	5.20	10.50	22.50	12.00	27.30	28.50	9.60	11.50	5⅛	5.50
6	6.00	14.00	27.30	16.00	37.00	33.50	11.20	14.50	6⅛	6.30
8	7.50	24.00	37.00	30.00	47.00	65.30	24.50	28.00		
10	11.00					80.30	29.90	34.50		
12	12.00					95.30	35.70	41.50		
14	14.00					110.00	41.60	49.00		
16	15.40					125.00	47.60	55.50		
18	17.20					140.00	53.50	62.50		
20	19.00					155.00	59.50	69.00		
22	20.90									
24	22.80									
26	24.60									
28	26.50									
30	28.40									
32	30.20									
34	32.20									
36	34.20									

**Made in bath screwed and bolted bonnet patterns. Unless specified, we will furnish screwed bonnet for standard and extra heavy valves up to 2" and for ammonia valves up to 1½".*

Long Turn, Long Sweep, and Long Radius fitting covers take same price as respective regular fitting covers.

Sweat Valves take same price as standard screwed valves.

TABLE 3—HEAVY DUTY *(formerly Special Thick Brine)*

Iron Pipe Size (in.)	Iron Pipe Covering per Lineal Foot	STANDARD (125 LB.) SCREWED FITTINGS		EXTRA HEAVY (250 LB.) and AMMONIA SCREWED FITTINGS		STANDARD, EXTRA HEAVY, AMMONIA FLANGED FITTINGS		←WELD and SWEAT→ FITTINGS	Copper Tubing Pipe Size (in.)	Copper Tubing Covering per Lineal Foot
		Ells (90° & 45°); Tees; Unions	Globe, Angle Gate Valves	Ells (90° & 45°); Tees; Unions	Globe, Angle Gate Valves	Ells (90° & 45°) Tees; Globe, Angle Gate Valves	Flanges	Ells (90° & 45°); Tees		
¼	$2.10	$2.70	$3.50	$3.20	$4.00*	$8.50	$3.60	$3.00	⅜	$2.30
⅜	2.10	2.70	3.50	3.20	4.00*	8.50	3.60	3.00	½	2.30
½	2.10	2.70	3.50	3.20	4.00*	8.50	3.60	3.00	⅝	2.30
¾	2.30	3.20	4.00	3.60	4.70*	9.20	3.90	3.40	¾, ⅞	2.60
1	2.80	3.60	4.70	4.20	6.00*	10.50	4.40	3.80	1⅛	2.80
1¼	3.20	4.20	6.00	4.80	7.20*	11.70	4.80	4.50	1⅜	3.20
1½	3.40	4.80	7.20	6.10	9.70*	13.00	5.40	5.20	1⅝	3.60
2	3.80	6.10	9.70*	7.20	12.20*	15.50	6.40	6.50	1⅞, 2⅛	4.40
2½	4.00	7.20	12.20*	8.30	14.70*	18.00	7.40	8.00	2⅝	5.20
3	4.50	8.30	14.70*	9.50	17.20*	20.50	8.40	9.50	3⅛	6.00
3½	5.30	9.50	17.20	10.80	19.70	23.00	9.40	10.70	3⅝	6.70
4	5.60	10.80	19.70	13.00	24.70	25.50	10.40	12.00	4⅛	7.50
5	7.20	13.00	24.70	15.50	30.00	30.50	12.40	15.00	5⅛	9.00
6	8.40	15.50	30.00	20.50	40.00	35.50	14.50	17.50	6⅛	10.60
8	11.20	31.00	40.00	37.50	50.00	69.00	31.60	35.00		
10	14.00					83.30	38.10	43.50		
12	16.00					98.30	45.00	52.00		
14	17.30					113.00	51.80	60.00		
16	19.60					128.00	58.60	63.50		
18	21.80					143.00	65.50	76.50		
20	24.00					158.00	72.40	85.50		
22	26.30									
24	28.60									
26	30.90									
28	33.20									
30	35.50									
32	37.80									
34	40.10									
36	42.40									

**Made in both screwed and bolted bonnet patterns. Unless specified, we will furnish screwed bonnet for standard and extra heavy valves up to 2" and for ammonia valves up to 1½".*

Long Turn, Long Sweep, and Long Radius fitting covers take same price as respective regular fitting covers.

Sweat Valves take same price as standard screwed valves.

TABLE 4—SPECIAL WALL THICKNESS *(per lineal foot)*

Pipe size (in.)	4"	5"	6"	7"	8"
¾ and less	$3.00	$4.00	$6.00	$9.00	$9.50
1	3.20	4.40	6.20	9.20	10.00
1¼	3.50	4.60	6.50	9.60	10.60
1½	3.70	4.90	6.80	10.00	11.20
2	4.20	5.60	7.60	10.80	12.20
2½	4.90	6.20	8.20	11.60	13.50
3	5.30	6.80	9.00	12.30	14.60
3½	5.80	7.40	9.60	13.20	15.60
4	6.50	8.00	10.20	14.00	16.80
5	7.70	9.20	11.60	15.60	19.00
6	Heavy Duty	10.50	13.00	17.20	21.30
8	Heavy Duty	13.00	15.80	20.40	26.00
10	Heavy Duty	15.40	18.50	23.70	30.00
12	Heavy Duty	18.00	21.20	26.80	35.00
14	Heavy Duty	20.40	24.00	30.00	39.00
16	Heavy Duty	23.00	26.70	33.00	44.00
18	Heavy Duty	25.40	29.40	37.00	48.00
20	Heavy Duty	28.00	32.00	40.00	53.00

List prices per fitting—Special Wall Thickness

To determine list price of any fitting in any of the special wall thicknesses shown at left:

1. All screwed and weld fittings

I.P.S. up to 8": Multiply list price per ft. of covering x 3.0

I.P.S. 8" and over: Multiply list price per ft. of covering x 4.0

2 All flanged fittings

I.P.S. up to 8": Multiply list price per ft. of covering x 4.5

I.P.S. 8" and over: Multiply list price per ft. of covering x 8.0

3. All flanges

All I.P.S.: Multiply list price per ft. of covering x 3.0

Temperature conversion table

The numbers in the second column of each section refer to the temperature either in degrees Centigrade or Fahrenheit which it is desired to convert. If converting from Fahrenheit degrees to Centigrade degrees the equivalent temperature will be found in the left column, while if converting from degrees Centigrade to degrees Fahrenheit, the answer will be found in the column on the right. These Albert Sauveur temperature conversion tables are reproduced through the courtesy of University Press, Inc.

−60° to +53°			54° to 212°		
C		F	C		F
−51	−60	−76	12.1	54	129.2
−46	−50	−58	12.6	55	131.0
−40	−40	−40	13.2	56	132.8
−34	−30	−22	13.7	57	134.6
−29	−20	−4	14.3	58	136.4
−23	−10	14	14.8	59	138.2
−17.7	0	32	15.6	60	140.0
−17.2	1	33.8	16.1	61	141.8
−16.6	2	35.6	16.6	62	143.6
−16.1	3	37.4	17.1	63	145.4
−15.5	4	39.2	17.7	64	147.2
−15.0	5	41.0	18.2	65	149.0
−14.4	6	42.8	18.8	66	150.8
−13.9	7	44.6	19.3	67	152.6
−13.3	8	46.4	19.9	68	154.4
−12.7	9	48.2	20.4	69	156.2
−12.2	10	50.0	21.0	70	158.0
−11.6	11	51.8	21.5	71	159.8
−11.1	12	53.6	22.2	72	161.6
−10.5	13	55.4	22.7	73	163.4
−10.0	14	57.2	23.3	74	165.2
−9.4	15	59.0	23.8	75	167.0
−8.8	16	60.8	24.4	76	168.8
−8.3	17	62.6	25.0	77	170.6
−7.7	18	64.4	25.5	78	172.4
−7.2	19	66.2	26.2	79	174.2
−6.6	20	68.0	26.8	80	176.0
−6.1	21	69.8	27.3	81	177.8
−5.5	22	71.6	27.7	82	179.6
−5.0	23	73.4	28.2	83	181.4
−4.4	24	75.2	28.8	84	183.2
−3.9	25	77.0	29.3	85	185.0
−3.3	26	78.8	29.9	86	186.8
−2.8	27	80.6	30.4	87	188.6
−2.2	28	82.4	31.0	88	190.4
−1.6	29	84.2	31.5	89	192.2
−1.1	30	86.0	32.1	90	194.0
− .6	31	87.8	32.6	91	195.8
0	32	89.6	33.3	92	197.6
.5	33	91.4	33.8	93	199.4
1.1	34	93.2	34.4	94	201.2
1.6	35	95.0	34.9	95	203.0
2.2	36	96.8	35.5	96	204.8
2.7	37	98.6	36.1	97	206.6
3.3	38	100.4	36.6	98	208.4
3.8	39	102.2	37.1	99	210.2
4.4	40	104.0	37.7	100	212.0
4.9	41	105.8	38	100	212
5.5	42	107.6	43	110	230
6.0	43	109.4	49	120	248
6.6	44	111.2	54	130	266
7.1	45	113.0	60	140	284
7.7	46	114.8	65	150	302
8.2	47	116.6	71	160	320
8.8	48	118.4	76	170	338
9.3	49	120.2	83	180	356
9.9	50	122.0	88	190	374
10.4	51	123.8	93	200	392
11.1	52	125.6	99	210	410
11.5	53	127.4	100	212	413

SPECIAL FITTINGS

Within the scope of this schedule of list prices, a special fitting is defined as a fitting having the same general form as a regular fitting, with minor differences in dimension and pattern. The more commonly specified special fittings within this category fall under one of the following general classifications. List prices to be applied for special fittings within this category are as indicated.

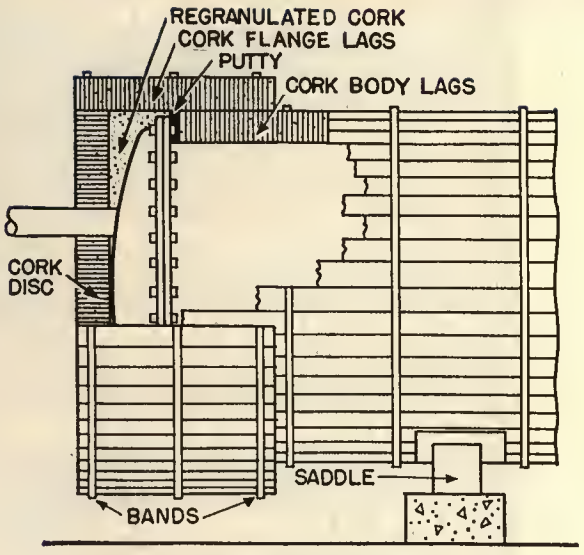
Classification	List price
Street Ells Drainage Ells, Tees, Y's Side Outlet Ells Laterals, True Y's	Std. or XHY Fitting (S.E. or F.E.)
Socket Weld Ells, Tees, 45° Ells	Weld and Sweat Fittings
Reducers, Couplings	Std. or XHY Fitting (S.E.)
Crosses Side Outlet Tees Plug Cocks	Std. or XHY Valve (S.E. or F.E.) +25%
Check Valves	Std. or XHY Valve (S.E. or F.E.)
Henry Valves	Std. S.E. Valve
Screwed and Flanged Ells ¼" to 1¼" 1½" and larger	XHY Ells +50% Std. or XHY Ell (F.E.)
Relief or Safety Valves Regulating Valves Butterfly Valves Packless Valves Clamp or Saddle Gate Valves Cross or Tee Valves Float Valves Expansion Valves By-Pass Valves Solenoid Valves Strainers, Scale Traps All other valves and special fittings	Std. or XHY Valve (S.E. or F.E.) +50%

Note: When ordering special fittings and valves, it is necessary to give name of manufacturer and catalog number.

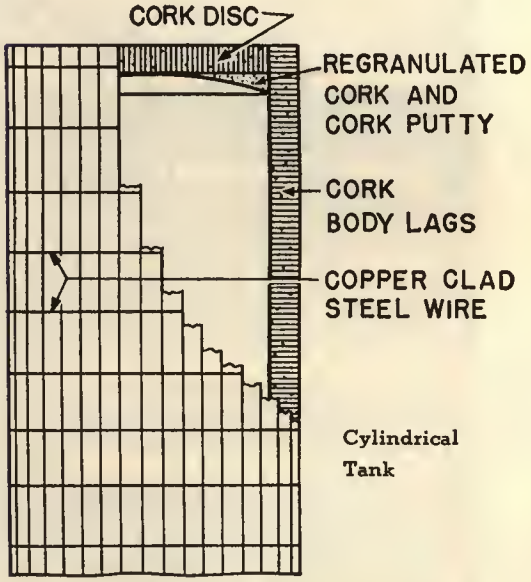
CORK CENTERS

Where two parallel pipes have been installed so closely together that it does not permit the application of full thickness of cork covering on both pipes, we can furnish molded cork centers for the space between the pipes and half sections of pipe covering for the outer areas.

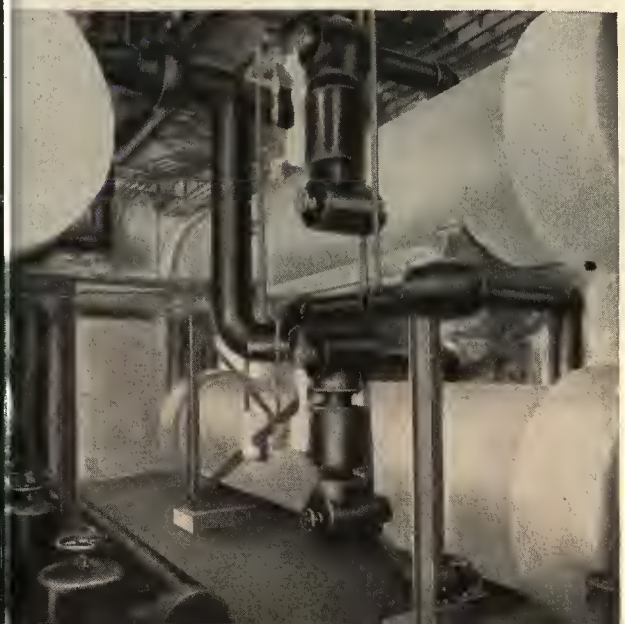
When ordering such material it is necessary to know the size of each pipe and the exact distance between the pipes. The list price for this material is exactly the same as though straight pipe covering were furnished for each pipe.



Flanged Head Cooler



Cylindrical Tank



LAGGING for BRINE COOLERS and CYLINDRICAL TANKS

BRINE COOLERS: Specification No. 1

The cylindrical body shall be insulated with one layer of Corinco Cork Lagging. Lagging shall be beveled to the proper diameter and shall be coated inside and out with mineral rubber. The lags shall be applied with Corinco Waterproof Cement between all joints and additionally secured with galvanized iron bands approximately 1" wide, drawn up tight with clips and bolts. These bands shall be spaced approximately 12" apart.

The flanged ends of the cooler shall be insulated with Corinco Cork Discs supported by a cork lagging collar applied over the flanges. This lagging shall extend to the outer surface of the disc and have a bearing on the body lagging at least 12". The collar lags and discs shall be applied in a similar manner as specified for body lags and be removable. All spaces between tank and lagging shall be filled with Corinco Brine Putty and spaces between discs and tank ends must be filled with regranulated cork.

Finish

After all insulation is applied, all chipped edges shall be filled and smoothed with Corinco Seam Filler and the entire surface then given one coat of Corinco Cork Covering Paint.

CYLINDRICAL TANKS—WELDED ENDS: Specification No. 2

The cylindrical body shall be insulated with one layer of Corinco Cork Lagging, beveled to the proper diameter and coated inside and out with mineral rubber. The lagging shall be secured to the tank with copper-clad steel wires spaced not more than 9" apart. The ends shall be insulated with Corinco Cork Discs supported in place by the body lagging, which shall extend beyond the tank to the outer surface of cork disc.

Finish

Seams shall be filled and all chipped and raw edges smoothed with Corinco Seam Filler and then the entire surface given one coat of Corinco Cork Covering Paint.

Left: **Brine lines insulated with Corinco cork pipe covering and tanks insulated with Corinco cork lagging.**

Branch offices

BROOKLYN 32, NEW YORK
Cork Insulation Co., Inc.
227 24th Street

CHICAGO 10, ILLINOIS
Corinco Insulation Co., Inc.
214 West Grand Avenue

LOS ANGELES 11 (Vernon), CALIFORNIA
Cork Insulation Co., Inc.
4536 District Boulevard

PHILADELPHIA 4, PENNSYLVANIA
Cork Insulation Co., Inc.
840 North Holly Street

PORTLAND 14, OREGON
Cork Insulation Co., Inc.
625 S. E. Stark Street

SAN FRANCISCO 7, CALIFORNIA
Cork Insulation Co., Inc.
462 Bryant Street

SEATTLE 4, WASHINGTON
Cork Insulation Co., Inc.
2412 First Ave., South

ST. LOUIS 3, MISSOURI
Cork Insulation Co., Inc.
2711 Olive Street

Factory

WILMINGTON 83, DELAWARE
Cork Insulation Co., Inc.
Foot of Christiana Avenue

CORK INSULATION CO., INC.

General offices: 155 East 44th Street
NEW YORK 17, N. Y.

Telephone: MUrray Hill 2-0066

CORINCO cork products

Corkboard

Cork Pipe Covering

Cork Fitting Covers

Cork Lagging and Discs

Cork, Granulated

Cork, Regranulated

Cork Machinery Isolation

Cork Acoustic

Cork Tile

Cork Wainscotings

Cork Stair Treads

10b
3a

REFLECTIVE INSULATION
for commercial refrigeration

ALUMISEAL

U. S. PATENTS APPLIED FOR

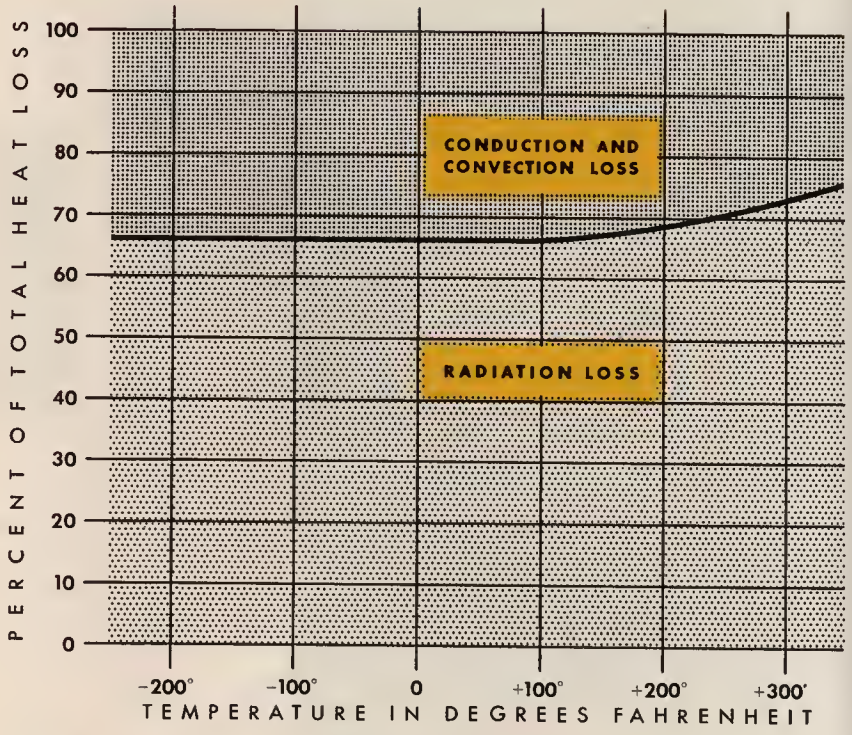
REFLECTIVE INSULATION AND VAPOR BARRIER MATERIALS

C. T. HOGAN & COMPANY, INC.

HEAT TRANSFERENCE RADIATION—CONVECTION—CONDUCTION

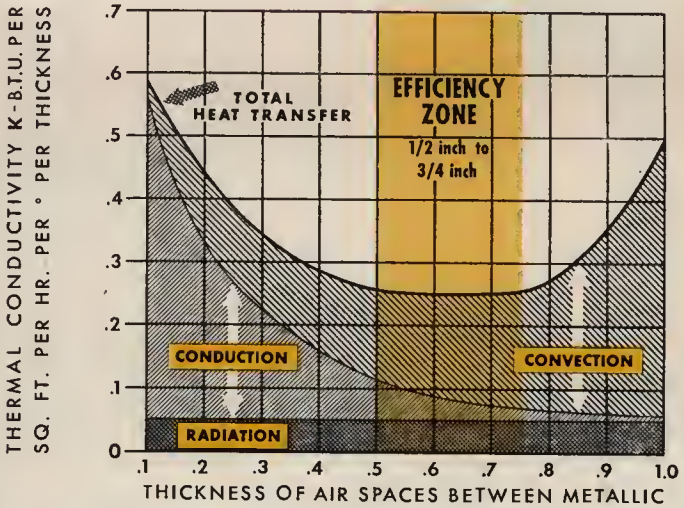
The results of tests at Mellon Institute of Industrial Research, Pittsburgh, Pa., in 1931 are graphically plotted in Chart 1. The radiation effect obviously dominates the picture. At high temperature radiation contributes over 85% of the heat loss and at low temperature never less than 66⅔%.

The results of an analysis of the relationship between air space thickness in vertical walls and floors and the three mediums of heat transfer are shown graphically in Chart 2. The radiation loss is constant. Conduction losses are high for thin air spaces and low for thick air spaces, while convection losses are just the opposite. The chart shows that the most efficient zone as far as insulating properties in walls and floors are concerned is a thickness of ½" to ¾".



HOW HEAT IS TRANSFERRED THROUGH AIR SPACE

CHART 1



EFFECT OF VARIATIONS IN AIR SPACE THICKNESS BETWEEN ALUMISEAL SURFACES IN VERTICAL WALLS AND FLOORS

OVERALL HEAT TRANSFER AND ITS COMPONENT FACTORS

CHART 2

RADIATION. As indicated in Chart 1, at least ⅔ of the total heat crossing any air space is in the form of radiant heat. The Alumiseal sheets reflect 95% to 97% of this radiant heat.

CONVECTION. In vertical walls or in horizontal air spaces against heat flow upward, note that the ¾" air spaces minimize the flow of convectional air currents.

CONDUCTION. The loss by conduction through ¾" or larger air spaces is very slight. Heat conducted through the wood separator members naturally flows off into the Alumiseal sheets which are much better conductors than the wood separator strips; thus a finning action, as indicated by the arrows, occurs and the heat flowing into the Alumiseal sheets is retarded from crossing the next air space by the low emissive value and the high reflectivity of Alumiseal.

Alumiseal is a sheet aluminum of special alloy bearing the ALUMISEAL trade name. It reflects 95% to 97% of all radiant heat striking it on either side. ALUMISEAL is not a foil but a strong rigid sheet of aluminum alloyed with small amounts of other metals to increase strength and resistance to corrosion.

Alumiseal insulation works this way:

Heat energy is transferred through the air from its source in three ways . . . radiation, convection and conduction.

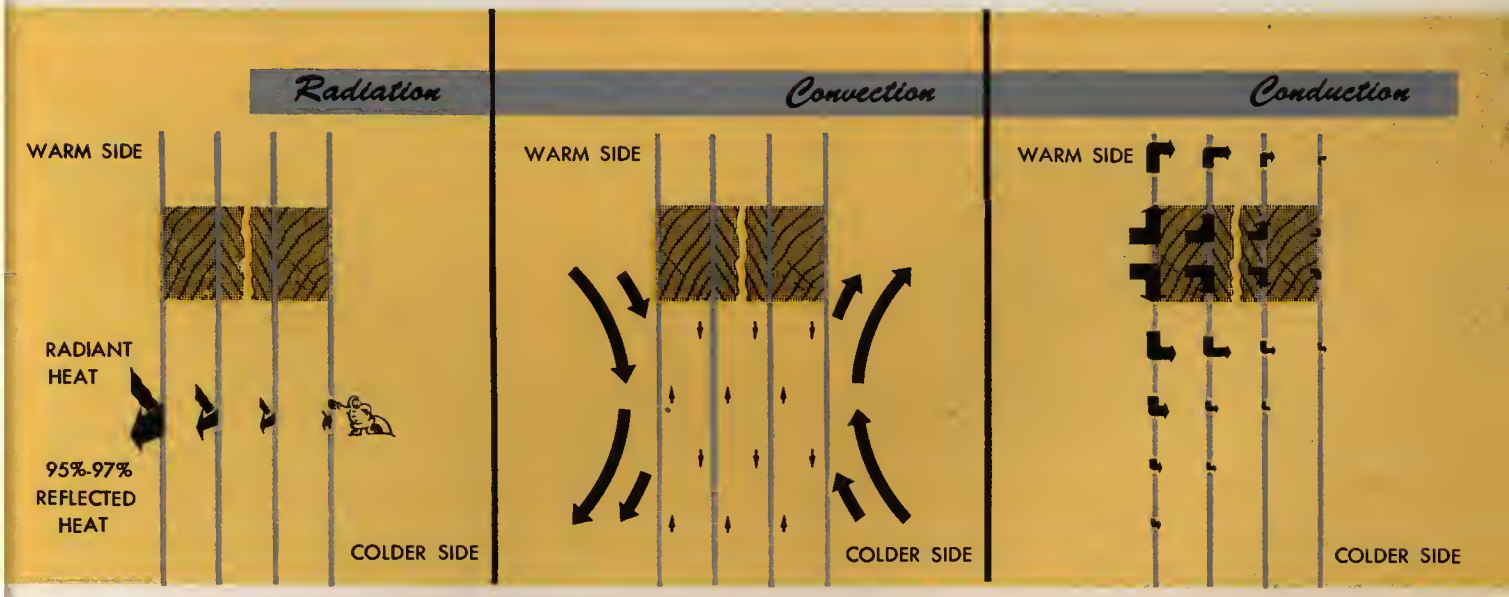
At ordinary temperatures radiation accounts for about ⅔ of this total (See Chart 1 for relative proportions), of which 95% to 97% is stopped by ALUMISEAL'S heat reflective properties. ALUMISEAL is equalled as a reflector of radiant heat only by such other materials as silver and rolled copper, both of which are commercially impractical because of high cost. Radiant heat is like a radio wave or light wave, in that it is electromagnetic energy and possesses a wave length. Like those waves it is subject to reflection. As light on a mirror is reflected and as radio waves bounce back to accomplish the phenomena of radar, so infra red (Radiant heat) waves bounce back when they strike ALUMISEAL creating a condition of heat protection or insulation.

To reduce the passage of heat by means of convection and conduction, ALUMISEAL is installed so that heat seeking to enter the protected area must first cross an air space. If multiple layers of ALUMISEAL are used, air spaces are provided between successive sheets. Chart 2 shows that in walls and floors convection is reduced by narrowing the air space while conduction is reduced by widening the air space that heat must cross. Indicated upon the chart is the most efficient width, ½" to ¾", of air space to minimize both convection and conduction heat loss in walls and floors. This accounts for the Alumiseal standard in these locations—½" to ¾" spacing between sheets obtained by the use of wood separator strips.

Alumiseal insulating value. The ALUMISEAL sheets with adjacent air spaces, reduce to a very small degree, the heat that actually gets through to the protected area. The value of an ALUMISEAL unit (a single sheet of Alumiseal with one adjoining ¾" air space in a vertical wall with a temperature drop per air space of 15°F or less) established by leading authority is 0.23 B.T.U's per sq. ft. per hour per degree F at a mean temperature of 0°F and 0.29 B.T.U's per square foot per hour per degree F at a mean temperature of 50°F. This value is for a unit only ¾" thickness yet it is equal to or substantially better than the values for 1" thicknesses of other long accepted standard materials in this field of application.

In horizontal air spaces where the flow of heat is downward as is the case in ceilings of refrigerated structures, the loss of heat through the air space by convection is practically nil because the air at the top of the space is warmer and lighter than the air at the bottom of the space. Consequently, the air is stratified and cannot rise or fall. Accordingly, the major loss through this air space is by conduction and radiation. Inasmuch as the highly reflective ALUMISEAL sheets eliminate the radiation loss, the resultant loss is that of conduction. The most effective and practical air space for use against this conduction loss is approximately 1⅝". This dimension is used in ALUMISEAL construction in such horizontal locations where flow of heat is downward. It has been established by tests of the leading authorities of the nation, including the National Bureau of Standards, that one sheet of reflective insulation with a 1⅝" air space above and below the sheet is equivalent to approximately 3" of corkboard against a downward flow of heat. The established value of an ALUMISEAL unit against downward flow of heat (a single sheet of ALUMISEAL in a horizontal position with one adjoining 1⅝" air space) is 0.13 B.T.U's per square foot per hour per degree F at a mean temperature of 50°F.

It should be noted that the performance of ALUMISEAL is based upon principles entirely different from those involved in insulating by mass insulation materials. Having no heat reflecting properties, mass materials receive into themselves, by radiation, convection and conduction, all of the heat transferred through the outside air and rely upon a myriad of small air cells to slow down the conduction passage of heat into the protected area.



C. T. HOGAN & COMPANY, INC.

POSITIVE VAPOR BARRIER

RUST PROOF—PERMANENT

Alumiseal defeats insulation's greatest foe. As is well known, the infiltration of moisture into the insulation of a refrigerated space is the cause of topmost concern to refrigerating engineers, architects, contractors and owners. In short, vapor condensation is widely regarded as Insulation Enemy No. 1.

Vapor, just as heat itself, moves from areas of high temperature to those of low. The greater the temperature difference between the warm, humid air outside, and the cold air inside the room, the greater the "pressure" or "attraction" tending to force or draw this element into the room.

It is vital to most insulations definitely to prevent this flow. If it occurs in a "mass" material, it will eventually reach a dew point within the material and condense as water, filling up the air cells and rendering the insulation of little value. If it occurs in the insulation of a "freezer" room, the water will soon become ice, expand and cause further damage to the insulation and structure. An effective vapor seal is therefore a primary requisite when insulating a refrigerated space.

Alumiseal—the ideal vapor seal, Being solid metal, ALUMISEAL is impervious to vapor. Furthermore, any condensation of free water which occurs on the warm side of the vapor barrier sheet will not result in rust or harmful corrosion.

Since ALUMISEAL comes in long coils 32 in. wide, sheets may be cut to any desired length, resulting in a minimum amount of joints. These joints are made impervious to vapor passage with ALUMISEAL LEAD-SEALED, VAPOR-PROOF TAPE, which is backed with a powerful and permanent adhesive. The result is a complete, permanent envelope of solid sheet aluminum with sealed joints. This construction with ALUMISEAL sheets and ALUMISEAL LEAD-FACED VAPOR-PROOF TAPE reduces moisture vapor permeability to less than 0.03 grams per sq. ft. per 24 hrs.

ALUMISEAL *Bars* • • HEAT • • • COLD • • •

U. S. PATENTS APPLIED FOR

Supplied in coils for installation. ALUMISEAL No. 34 B&S gauge (.006 in. thick) is supplied in coils (rolls) 16 in. wide and 32 in. wide. The 16 in. coil contains approximately 450 sq. ft. and weighs about 37½ lbs. The 32 in. coil contains approximately 900 sq. ft. and weighs about 75 lbs. These coils, easily handled by workmen, can be unrolled like wallpaper, cut into desired lengths by snips, scissors or knife, and applied with automatic staplers or nails at low cost.

EASY HANDLING

CLEAN, HARD FINISH

Heavy gauge alumiseal, ALUMISEAL is also produced in No. 16 to No. 24 B&S gauge sheets, 3 or 4 ft. wide, and 8, 10, or 12 ft. long. These heavier sheets are recommended for use as the inside or outside surfaces of insulated rooms or cabinets where greater structural strength and rigidity are required. Such sheets, comparable in size to ordinary wallboards and applied to walls and ceilings, perform a dual function: first, as a layer of insulation; and second, as a quality interior room finish. Heavy gauge ALUMISEAL provides a lining of bank vault-like appearance pleasing because of its strength, fire protection, and obvious cleanliness.

The very small amount of vapor which can possibly enter a well-constructed barrier of this kind is so minute that dew-point, with resulting condensation, is not met within the insulated wall. Such small amounts of vapor are permitted to pass easily through the joints of the interior ALUMISEAL sheets which are purposely not sealed with ALUMISEAL TAPE to the interior of the cold room where they condense on the coils and are eventually eliminated through defrosting.

Sanitary—vermin proof—fire resistant. ALUMISEAL is a clean hard-surfaced sheet which affords no home for germs. Obviously, vermin cannot gnaw their way through it, thus, perishable and valuable materials stored inside the refrigerator are given fullest protection. Likewise, being a strong heat reflective metal sheet, ALUMISEAL acts as a positive fire barrier.

Alumiseal cannot rust or rot. ALUMISEAL is the most durable material in the modern insulation field. Being solid aluminum, it cannot absorb moisture, oil or odors. Free water does not harm it. It is not attacked by rodents or vermin. It provides definite fire resistance. Installed as insulation inside the walls, floor or ceiling, ALUMISEAL will maintain its high efficiency as long as the structure lasts.

THE TREMENDOUS RESISTANCE TO CORROSION OF *ALUMISEAL* SHEET IS SHOWN ON THE ACCOMPANYING TABLE. SHEETS WERE EXPOSED TO THE ELEMENTS FOR A PERIOD OF 10 YEARS, IN VARIOUS LOCATIONS IN THE UNITED STATES. THE DEPTH OF ATTACK IN MILS IS SHOWN FOR EACH LOCATION. NOTE THAT THESE SHEETS WERE EXPOSED TO OUTDOOR CONDITIONS WHILE *ALUMISEAL* INSULATION IS USED INDOORS. DESPITE SUCH RIGOROUS TEST CONDITIONS, THE MOST SEVERE DEPTH OF PITTING ENCOUNTERED WAS NOT SUFFICIENT TO PIERCE EVEN THE THINNEST *ALUMISEAL* SHEET AFTER A 10-YEAR EXPOSURE PERIOD. *ALUMISEAL* WILL NOT WITHSTAND ACIDS OR ALKALINE ACTION BEYOND THAT LISTED IN PUBLISHED DATA OF THE ALUMINUM INDUSTRY.

SHEETS EXPOSED FOR 10 YEARS

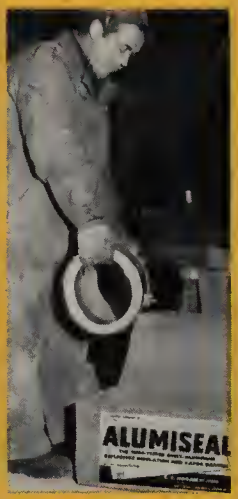
IN VARIOUS LOCATIONS (ASTM TESTS)

LOCATION	DEPTH OF ATTACK
ALTOONA	0.7
STATE COLLEGE	0.
NEW YORK CITY	0.5
SANDY HOOK	0.
KEY WEST	0.1
PHOENIX	0.
LAJOLLA	4.0
AVERAGE	**0.76**

IN THOUSANDTHS OF AN INCH (ASTM TESTS)

VAPOR • • • FIRE • • • VERMIN • • • RODENTS • • • DIRT

Cleon, hard, bank vault-like finish of heavy gauge ALUMISEAL.



Light, easy to handle ALUMISEAL coils.

Positive and permonent vapor borrier, effected with ALUMISEAL LEAD-FACED VAPOR-PROOF TAPE.

Easy applicotion of ALUMISEAL coils on top of roof or floor slob.

C. T. HOGAN & COMPANY, INC.

ALUMISEAL INSTALLATIONS

COOLERS

FREEZERS

HOT ROOMS

for

MEAT

VEGETABLES

FRUIT

DAIRY PRODUCTS

CONFECTIONS

BEVERAGES

FURS

FLOWERS

AND OTHER PRODUCTS

One of a battery of freezers.

Hot Room 160°F.

L. A. Dreyfus Co., Oak Tree, New Jersey
A. D. Crosset Associates, Architects & Engineers

Chewing gum processing

Interior view of fur vault for the East New York Fur Storage Company located in East New York Savings Bank Building. Alfred H. Ryder, Architect

SPECIFICATIONS

INSULATION SHALL BE ALUMISEAL, SHEET ALUMINUM REFLECTIVE INSULATION, AS FURNISHED BY C. T. HOGAN & COMPANY, INC.

ALUMISEAL INSULATION SHEETS SHALL BE ALUMINUM, NOMINAL .006 INCHES IN THICKNESS, AND SHALL REFLECT 95% TO 97% OF RADIANT HEAT, AND HAVE A CORRESPONDING EMISSIVITY OF 0.03 TO 0.05.

THE NUMBER OF REFLECTIVE INSULATION SHEETS SHALL BE AS NOTED ON DRAWINGS FOR THE TEMPERATURE REQUIREMENTS AND SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS OF C. T. HOGAN & COMPANY, INC.

VAPOR BARRIER. THE HIGH TEMPERATURE SIDE OF THE INSULATION CONSTRUCTION SHALL BE PROTECTED BY ALUMISEAL SHEET. ALL JOINTS OF THIS REFLECTIVE INSULATION SHEET SHALL BE SEALED WITH ALUMISEAL LEAD-FACED VAPOR-PROOF TAPE, AS FURNISHED BY C. T. HOGAN & COMPANY, INC.

HEAVY GAUGE FINISH. INTERIOR FINISH OF WALLS AND CEILINGS SHALL BE HEAVY GAUGE ALUMISEAL SHEETS HAVING THE SAME REFLECTIVITY AND EMISSIVITY AS SPECIFIED FOR REFLECTIVE INSULATION SHEETS.

GUARANTEE

THE NUMBER OF SHEETS OF ALUMISEAL INSULATION RECOMMENDED FOR VARIOUS TEMPERATURE DIFFERENCES AND THE METHODS OF APPLICATION SHOWN IN OUR CATALOGS, DRAWINGS, AND PUBLISHED DATA, ARE BASED UPON TEST BY RECOGNIZED LABORATORIES AND THE BEST ENGINEERING AND CONSTRUCTION PRACTICES AND EXPERIENCE DEVELOPED IN THE FIELD. THE ELEMENT OF GOOD WORKMANSHIP IN EXECUTING THESE RECOMMENDATIONS IS A REQUISITE FOR SATISFACTORY PERFORMANCE.

WE GUARANTEE THAT ALL ALUMISEAL INSULATION SUPPLIED BY C. T. HOGAN & COMPANY, INC., SHALL HAVE A REFLECTIVITY OF 95% TO 97% OF RADIANT HEAT WITH CORRESPONDING EMISSIVITITY OF .03 TO .05.

(TESTS BY THE ALUMINUM INDUSTRY HAVE PROVED THAT THIS MATERIAL, IF NOT SUBJECTED TO PHYSICAL OR CHEMICAL CONDITIONS AT VARIANCE WITH THE PUBLISHED DATA ON THE CORROSION-RESISTANCE OF ALUMINUM, WILL MAINTAIN A REFLECTIVITY OF NOT LESS THAN 90% AND AN EMISSIVITY OF NOT GREATER THAN .1 FOR A PERIOD OF 10 YEARS.)

NATIONAL BUREAU OF STANDARDS REPORT TIB-59, FEBRUARY 5, 1938, STATES:

"TEST WAS MADE ON A SAMPLE OF ALUMINUM FOIL* WHICH HAD BEEN EXPOSED TO THE SUN, RAIN, WIND, AND INDUSTRIAL DUST ATMOSPHERE FOR TWO YEARS. IT WAS COVERED BY A GRAYISH BLACK DIRT DEPOSIT. THE REFLECTIVITY WAS FOUND TO BE 92% AS COMPARED WITH 97% FOR BRIGHT ALUMINUM FOIL. THE EMISSIVITY HAD INCREASED FROM 3% TO 8%. THIS CHANGE REPRESENTS COMPARATIVELY LITTLE DIFFERENCE IN THE INSULATING VALUE WHEN THE ALUMINUM FOIL IS USED WITH THE USUAL AIR SPACE."

*ALUMISEAL equals the highest reflectivity of aluminum foil and being solid sheet aluminum, is much stronger and more permanent.

Quincy Market Cold Storage & Warehouse Co. Watertown, Mass. Largest minus 15°F frozen storage warehouse in the United States. Gonteaume & McMullen, Architects and Engineers

Thinner walls—more pay space. ALUMISEAL walls are at least 25% thinner than equivalent mass insulation material. For instance, those of a 4-layer cooler would be only 3 inches. And for such low temperatures as –70°F., less than 10 inches. This means that your containing structure can be smaller and less costly, or you can enjoy larger income-earning space.

Example: A room with outside dimensions approx. 30 ft. x 60 ft. x 10 ft. high, to be insulated for minus 10°F to minus 20°F. Mass Insulation with "K" factor of 0.3 B.T.U.'s per sq. ft. per hr. per °F temp. difference required 8 in. thickness. ALUMISEAL construction required 8 sheets - 6 in. thickness. Saving in insulation thickness—25%.

This means approximately 300 cu. ft. additional "pay" space; 30 sq. ft. additional floor space.

Alumiseal sheet requirements. Just as the different temperatures to be maintained within refrigerated space call for varying thicknesses of "mass" insulating materials, so ALUMISEAL is installed in units—each unit consisting of a sheet of ALUMISEAL and its adjoining air space.

The number of units of ALUMISEAL used in a refrigerated structure depends upon the difference between the temperature of the outside (ambient) air and the temperature to be maintained in the interior refrigerated space.

With outside temperature in the range of 80° to 85°F., the following number of sheets of ALUMISEAL are recommended for the various interior temperatures shown. These recommendations are based on tests by recognized laboratory sources and have been confirmed by actual performance in many field installations.

NUMBER OF SHEETS OF ALUMISEAL REQUIRED

TEMPERATURE RANGE	CEILINGS		WALLS		FLOORS	
	SHEETS REQUIRED	B.T.U./SQ FT/HR/°F TEMP. DIFF.	SHEETS REQUIRED	B.T.U./SQ FT/HR/°F TEMP. DIFF.	SHEETS REQUIRED	B.T.U./SQ FT/HR/°F TEMP. DIFF.
PLUS 30°F TO PLUS 40°F	3	0.043	4	0.075	4	0.08
PLUS 20°F	3	0.043	5	0.059	5	0.069
0°F TO PLUS 10°F	4	0.032	6	0.049	6	0.064
MINUS 10°F	5	0.025	7	0.04	7	0.057
MINUS 20°F	6	0.021	8	0.032	8	0.052

Lower temperature recommendations will be furnished upon request.

COMPARISON OF B.T.U. HEAT LEAKAGE INTO 0°F STORAGE INSULATED WITH ALUMISEAL AS COMPARED TO STANDARD MASS TYPES OF INSULATION

A 0°F storage 30 ft. x 60 ft. x 8 ft. high would, as noted above, be insulated with 6 sheets of ALUMISEAL in the walls and floors and 4 sheets of ALUMISEAL in the ceiling. The total B.T.U. leakage into this room would be:

CEILING—Approximately 57 B.T.U's per hr. per °F temperature difference.
WALLS—Approximately 69 B.T.U's per hr. °F temperature difference.
FLOOR—Approximately 118 B.T.U's per hr. per °F temperature difference.
TOTAL—Approximately 244 B.T.U's per hr. per °F temperature difference.

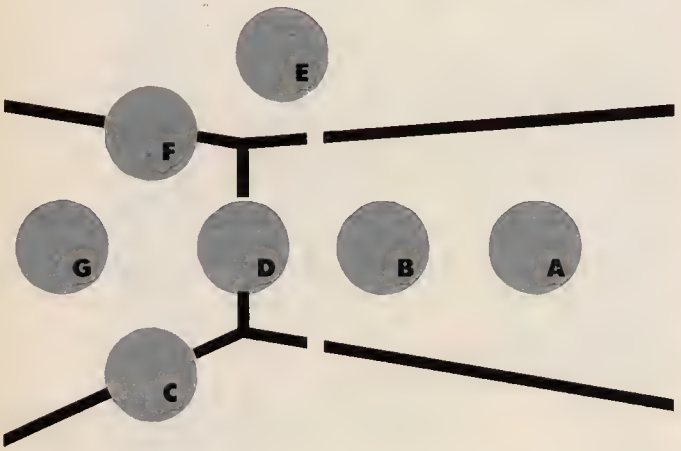
This same space, insulated with 6 inches of standard mass type insulation having a 0.3 B.T.U. per sq. ft. per hr. per °F per inch thickness "K" factor, would have a total B.T.U. leakage, for walls, floors and ceilings, of approximately 255 B.T.U's per hr. per °F temperature difference.

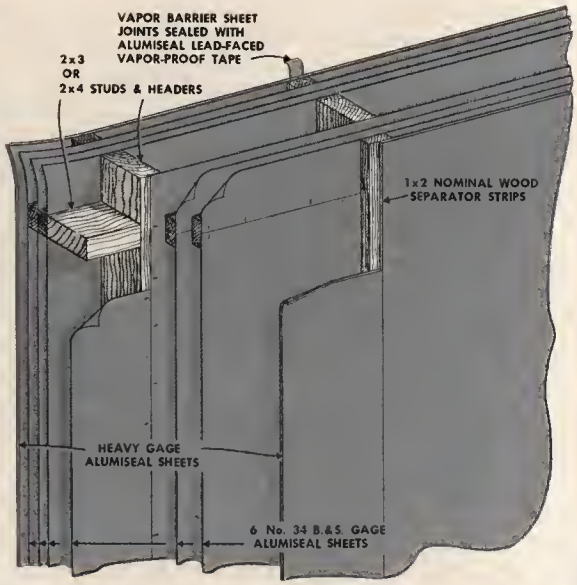
This represents approximately 5% more B.T.U. leakage through 6 inches of mass type insulation than occurs through 6 sheets of ALUMISEAL at 0°F.

Fruit Dispatch Co. (United Fruit Co.). Banana storage and ripening rooms.

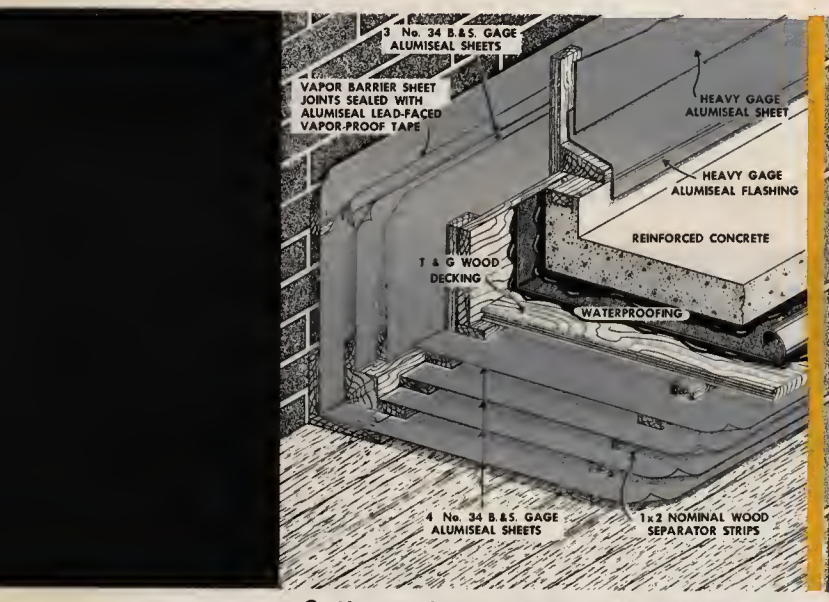
Beer Storage Ballentine's Ale. Portland, Maine

COOLERS—TYPICAL SECTIONS

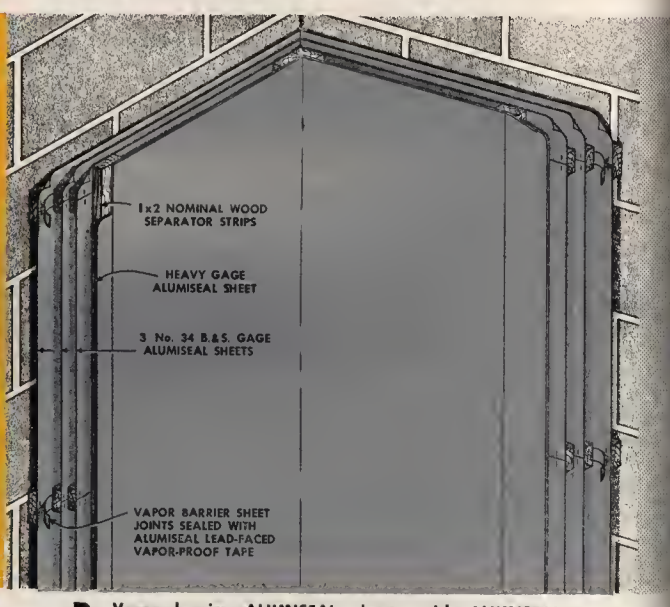




A Free standing walls between coolers and freezers should, in most cases, be insulated with the same number of sheets as used in the exterior walls of the freezer. Operation of the freezer without the cooler is then possible and sweating of the cooler side of the partition is eliminated, unless excessive relative humidities occur in the cooler. Depending upon operational design, it is often advisable to seal both sides of the partition with ALUMISEAL LEAD-FACED VAPOR-PROOF TAPE.

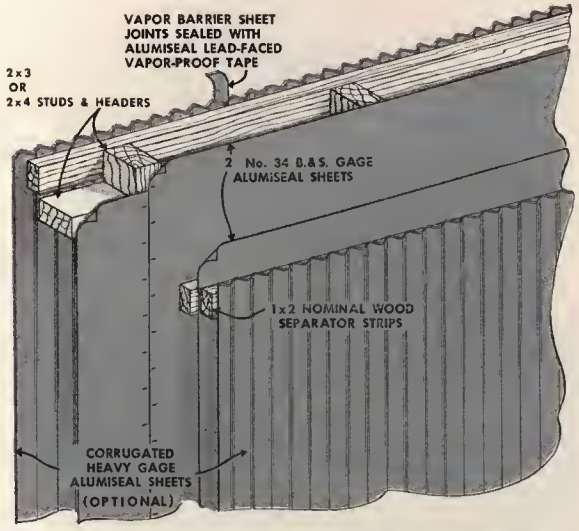


C The vapor barrier ALUMISEAL sheet with ALUMISEAL LEAD-FACED VAPOR-PROOF TAPE on all joints is continuous from wall to floor, forming a complete envelope. The 1 inch x 2 inch separators between ALUMISEAL sheets in the floor form a laminated or built-up bearing member 16 inches or 12 inches on centers. Wood decking, waterproofed on top, covers this construction and a reinforced concrete slab is poured on top of the wood decking. This reinforced slab distributes the floor load to the bearing members. ALUMISEAL floors can be designed for loads up to the crushing point of wood. The slab should be curbed up the wall and the heavy gauge ALUMISEAL wall finish is flashed over this concrete curb.



D Vapor barrier ALUMISEAL sheets with ALUMISEAL LEAD-FACED VAPOR-PROOF TAPE on all joints continues around intersections of walls. Subsequent ALUMISEAL sheets also continue around intersections, eliminating heavy wood construction at corners.

These details illustrate one typical application of Alumiseal *in coolers for sections shown. For complete dimensioned details, ask for C. T. Hogan & Company, Inc. drawings, and specifications.*



B Free standing cooler walls are generally built with 2 x 4 studs. These walls are strong, load-bearing constructions. Where space is at a premium and wall thinness is required, the 2 x 4 studs in the wall may be put in flat, thus taking up only a 1⅝ inch thickness. The method illustrated above, taking up the full 3⅝ inch stud thickness offers greater strength. The ALUMISEAL sheet on the warm side is sealed at all joints with ALUMISEAL LEAD-FACED VAPOR-PROOF TAPE. Illustrated above is corrugated heavy gauge ALUMISEAL finish which offers greater strength against physical abuse than does flat heavy gauge sheets. This corrugated sheet is furnished with 1¼ inch or 2½ inch corrugations.

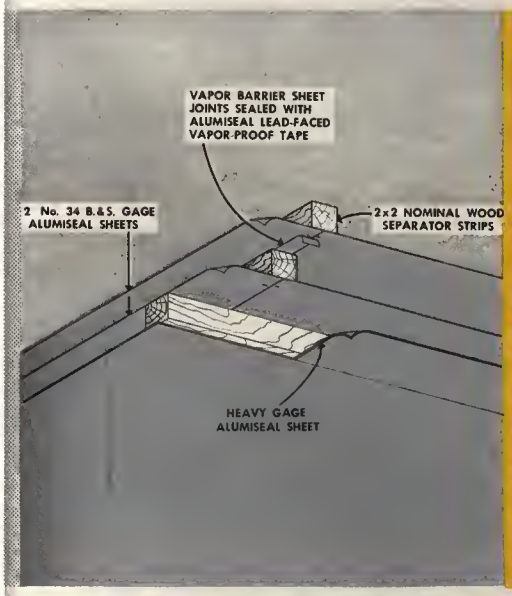
For more than a decade *C. T. Hogan & Company, Inc.*, have specialized in engineering, design and construction, with reflective insulation, of insulated structures through the entire temperature range from 125 degrees below zero up to several hundred degrees above zero. The best materials have always been developed and featured in our specifications and recommendations. Accordingly, we have evolved ALUMISEAL with all the advantages of its aluminum alloy over the materials heretofore used in the reflective insulation field.

During the years of World War II, C. T. Hogan & Company, Inc. specialized in the design and construction of reflective insulation for the most severe low-temperatures of the Armed Forces and of Industry. Temperatures from minus 70°F to minus 125°F were maintained in altitude testing chambers, all-weather rooms, low-temperature test rooms, etc. The majority of such structures built for the Army and Navy Air Forces and for the Aviation Industry were part of our work.

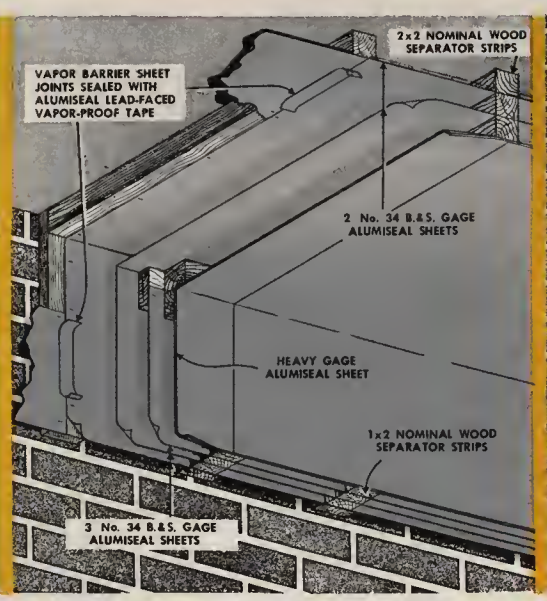
The wealth of experience in the low-temperature field is now embraced in our recommendations, designs and constructions with ALUMISEAL. Laboratory tests are a continuing factor in our expanding activity.

- This combination of "know-how"—embracing years of experience in engineering, research and installation of reflective insulation—is necessary for achievement of the end purpose—to furnish you with an insulated structure of highest efficiency and permanence.
- ALUMISEAL means much more than a reflective sheet insulation. ALUMISEAL means a combination of the highly efficient, permanent materials described and the "know-how" of the experienced and competent organization of C. T. Hogan & Company, Inc.

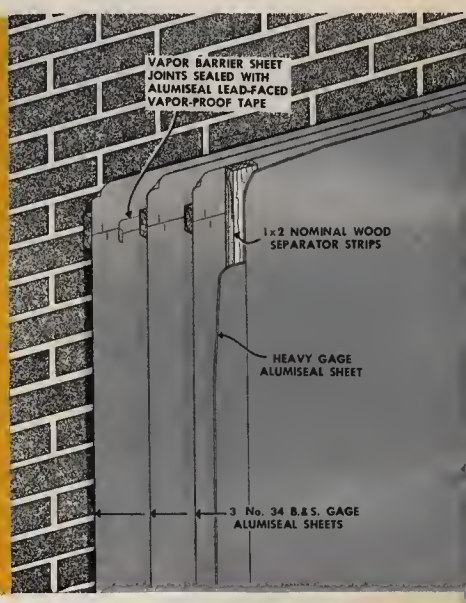
The ALUMISEAL trade name on our product is your assurance of material meeting these described requirements.



E Nominal 2 inch x 2 inch wood separators forming 1⅝ inch air spaces are used in ceiling constructions where the flow of heat is downward. In this location, reflective insulation is at its maximum efficiency. As explained on pages 2 and 3, one sheet of ALUMISEAL forming two 1⅝ inch air spaces can be equivalent to approximately 3 inches of corkboard against heat flow downward. In coolers where 4 sheets are used in walls and floors, only 3 sheets are recommended in ceilings.

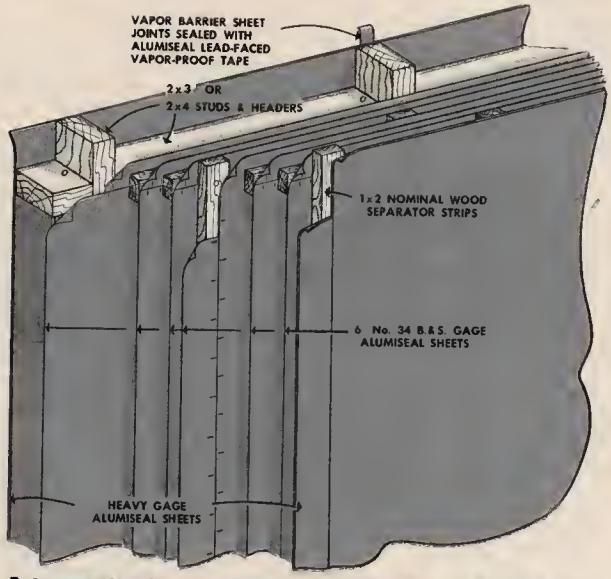


F The ALUMISEAL vapor barrier sheet with ALUMISEAL LEAD-FACED VAPOR-PROOF TAPE covering all joints is continuous from wall to ceiling forming a complete envelope. Note that ¾ inch air spaces are used in the walls whereas 1⅝ inch air spaces are used in the ceiling against heat flow downward.

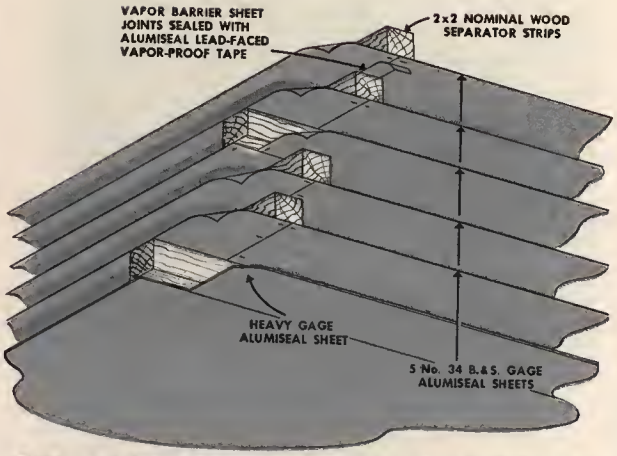


G Four sheets of ALUMISEAL with ¾ inch air spaces between sheets takes up only 3 inches overall space. This construction is equivalent to 4 inches thickness of standard mass type insulation.

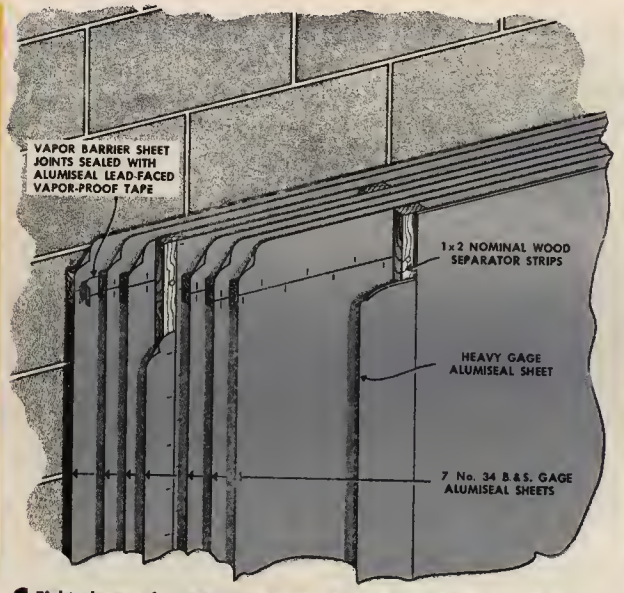
FREEZERS AND LOW TEMPERATURE TEST FACILITIES—TYPICAL SECTIONS



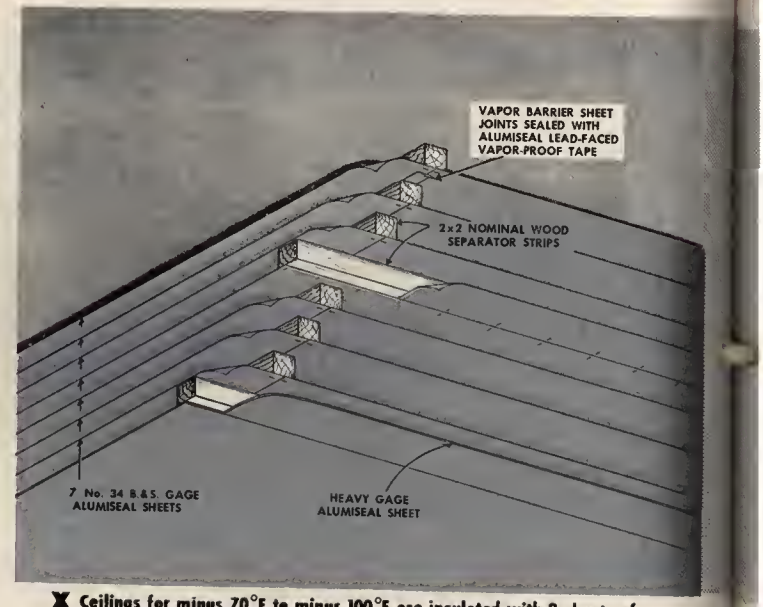
A Free standing freezer walls may be constructed with all of the No. 34 B & S Ga. ALUMISEAL sheets on one side of the 2 inch x 4 inch studs as shown above, or half of the total number of ALUMISEAL sheets may be applied on each side of the studs. Note that the wood separator strips are reversed in direction to eliminate "through wood conduction." ALUMISEAL LEAD-FACED VAPOR-PROOF TAPE seals all joints of the warm side vapor barrier sheet.



B Freezer ceilings insulated with 6 sheets of ALUMISEAL spaced 1½ inch apart have a "U" factor of 0.021 B.T.U's per sq. ft. per hr. per °F temperature difference equivalent to 14.5 inches of standard mass type insulations. The top or warm side vapor barrier sheet is continuous from ceiling to wall, sealed with ALUMISEAL LEAD-FACED VAPOR-PROOF TAPE, forming a complete vapor barrier envelope.



C Eight sheets of ALUMISEAL on masonry walls with sheets spaced ¾ inch apart take up only 6 inches overall space. Yet this wall is equivalent to 9 inches thickness of standard mass type insulation. ALUMISEAL LEAD-FACED VAPOR-PROOF TAPE seals all joints of the exterior or warm side vapor barrier sheet.



X Ceilings for minus 70°F to minus 100°F are insulated with 8 sheets of ALUMISEAL with 1½ inch air spaces between sheets. This construction has a "U" factor of 0.016 B.T.U's per sq. ft. per hr. per °F temperature difference equivalent to 19 inches of standard mass type insulations. Note the reversal of direction of wood seperator strips eliminating "through wood conduction." The ALUMISEAL vapor barrier sheet is sealed with ALUMISEAL LEAD-FACED VAPOR-PROOF TAPE at all joints. (See Note 1.)

The details A - B - C illustrate one typical application of Alumiseal, *in Freezers, for sections shown. For complete, dimensioned details, ask for C. T. Hogan & Company, Inc. drawings and specifications.*

The details X - Y - Z illustrate one typical application of Alumiseal *(for sections shown) for temperature in the range of minus 70°F to minus 100°F as encountered in altitude chambers, all-weather rooms, wind tunnels and other low temperature test facilities. Detailed information and recommendations are available upon request.*

The following installations were designed and constructed by C. T. Hogan & Company, Inc. during World War II. They illustrate the broad scope of our experience with reflective insulation in the extreme low-temperature field in the range of 100 degrees below zero.

LOW-TEMPERATURE ALTITUDE CHAMBERS

(minus 60°F to minus 100°F)

A.A.F.—Eglin Field—Proving Ground Command
A.A.F.—Orlando, Fla.—School of Applied Tactics
A.A.F.—Randolph Field—Aero-Medical School
A.A.F.—Wright Field—
Carburetor Test Chamber, Turret Chamber, Armament Lab., Equipment Lab., Aero Medical Lab., Radio Lab., Cabinet Supercharger Chamber.
Army Proving Ground—Aberdeen, Md.
Bendix Aviation Corp.—(Eclipse Aviation Div.) Bendix, New Jersey
Chance Vought—Stratford, Conn.
Ford Motor Company—Willow Run, Mich.
General Motors—(Allison Division)—Indianapolis, Ind.
N.A.C.A. Chamber—Langley Field, Va.
Naval Air Stations—Corpus Christi, Tex. (2); Jacksonville, Fla.; Pensacola, Fla.; Opa Locka, Fla.
Naval Bureau of Aeronautics—San Diego, Cal.; Seattle, Wash.; Norfolk, Va.
Naval Medical Center—Bethesda, Md.
Naval Research Lab.—Anacostia, D. C.
Pump Engineering Service Corp.—Cleveland, Ohio
Sperry Gyroscope Co.—Great Neck, L. I.
University of Pennsylvania—Medical School
Yale University, New Haven, Conn.

LOW-TEMPERATURE STATIC COLD ROOMS

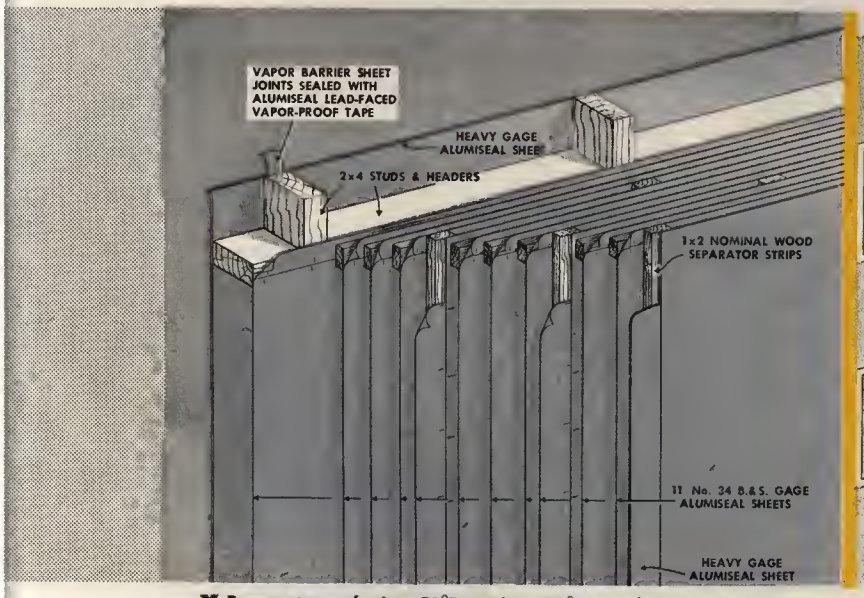
(minus 70°F to minus 100°F)

A.A.F. Triple Cell Room—Wright Field, Dayton, Ohio
Eastman Kodak Co.—Rochester, N. Y.
Mayo Clinic—Rochester, Minn.
National Research Council—Ottawa, Canada
Naval Aircraft Factory—Philadelphia, Pa.
Naval Torpedo Station—Newport, R. I.
Republic Aviation Corp.—Farmingdale, N. Y.
Vultee Aircraft Inc.—Vultee Field, Calif.

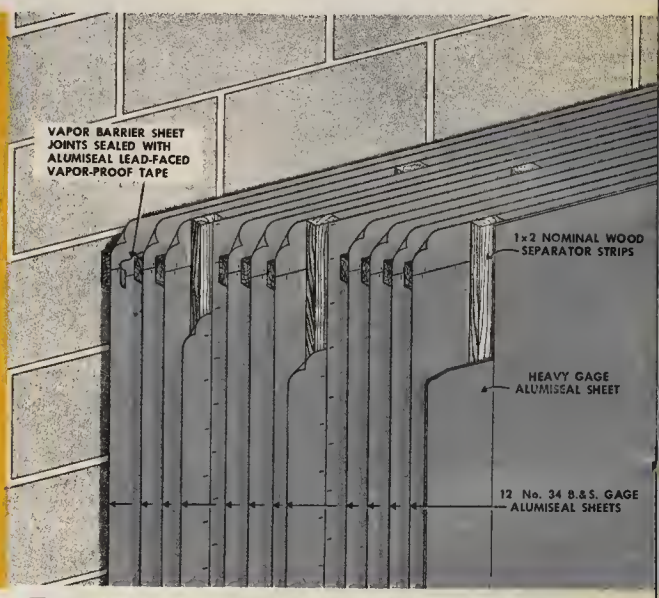
ALL-WEATHER ROOMS

(plus 165°F to minus 125°F with maximum humidity)

A.A.F.—Wright Field—Aircraft Radio Lab.; Aero Medical Lab.; Fuel & Oil Test Lab.; Equipment Lab.
Fairchild Aviation Corp.—New York, N. Y.
Grumman Aircraft Corp.—Bethpage, N. Y.
Naval Research Lab.—Anacostia, D. C.
Western Electric Co.—Kearny, N. J.



Y Temperatures of minus 70°F to minus 100°F are adequately insulated with 13 sheets of ALUMISEAL in walls and floors. Note that the reversal of direction of wood separator strips eliminates "through wood conduction." Free standing walls as indicated above are constructed with 2 inch x 4 inch stud members. The worm side vapor barrier sheet of ALUMISEAL is sealed at all joints with ALUMISEAL LEAD-FACED VAPOR-PROOF TAPE and this vapor proof sheet is continuous from walls to ceiling and walls to floor forming a complete envelope. (See Note 1.)



Z Thirteen sheets of ALUMISEAL in walls and floors with ¾ inch air spaces between sheets takes up an overall thickness of only 9¾ inches. This construction is entirely adequate for minus 70°F to minus 100°F temperatures and is equivalent to approximately 17 inches of standard mass type insulation. Wood separator strips are reversed in direction to eliminate "through wood conduction" and all joints of the exterior vapor barrier sheet are positively and permanently sealed with ALUMISEAL LEAD-FACED VAPOR-PROOF TAPE. (See Note 1.)

NOTE 1

In all-weather rooms where the cycle of operating temperatures may run from minus 100°F to plus 165°F with high humidities injected at the higher temperatures, the exposed inside sheet of ALUMISEAL also has all joints completely sealed with ALUMISEAL LEAD-FACED VAPOR-PROOF TAPE to form a moisture proof and vapor proof envelope for containing these high humidities when required.

C. T. HOGAN & COMPANY, INC.

SOME IMPORTANT ALUMISEAL INSTALLATIONS

BAKERIES, INC. (SUBSIDIARY OF STOP & SHOP)
BOSTON, MASS.
COMMUNITY PRODUCE CO., BOSTON, MASS.
EAST NEW YORK FUR STORAGE CO., BROOKLYN, N.Y.
FIRST NATIONAL STORES WAREHOUSE
SOMERVILLE, MASS.
FIRST NATIONAL STORES WAREHOUSE
EAST HARTFORD, CONN.
FIRST NATIONAL STORES WAREHOUSE
PORTLAND, MAINE
FRUIT DISPATCH COMPANY (UNITED FRUIT CO.)
NEW YORK, N. Y.
MAX FURTEK & SONS SUPERMARKET
CHICOPEE, MASS.
GENERAL ELECTRIC COMPANY, LYNN, MASS.
GENERAL ELECTRIC COMPANY, PITTSFIELD, MASS.
GLICK BROS., YARMOUTH, MAINE
HUGHEY'S ORCHARDS, EAST WATERBORO, MAINE
JOHN HANCOCK MUTUAL LIFE INSURANCE CO.
BOSTON, MASS.
L. A. DREYFUS COMPANY, OAK TREE, N. J.
LOFT CANDY COMPANY, LONG ISLAND CITY, N. Y.
MANHATTAN REFRIGERATION CO., NEW YORK, N. Y.
MERCHANTS REFRIGERATION CO., JERSEY CITY, N. J.
NATIONAL DAIRY PRODUCTS CO., INC.
NEW YORK, N. Y.
NATIONAL LEAD COMPANY, BROOKLYN, N. Y.
NATIONAL TEA COMPANY, CHICAGO, ILL.
OLD ADMIRAL INN, VALLEY FALLS, R. I.
PENNSYLVANIA RAILROAD CO., DETROIT, MICH.
PINE TREE BEVERAGE COMPANY, PORTLAND, MAINE
QUINCY MARKET COLD STORAGE & WAREHOUSE CO.
WATERTOWN, MASS.
REICK-McJUNKIN DAIRY CO., CHARLEROI, PENN.
STANDARD BRANDS, INC., NEW YORK, N. Y.
STANDARD OIL CO. OF NEW JERSEY, BAYWAY, N. J.
U. S. ARMY AIR FORCE
WRIGHT FIELD. DAYTON, OHIO
U. S. ARMY ORDNANCE
SPRINGFIELD, MASS.
U. S. NAVY EXPERIMENT STATION, ANNAPOLIS, MD.

The VAPOR-PROOF ALUMISEAL installation, its more efficient insulation performance and the elimination of costly deterioration and replacement provides you with the finest quality of insulation.

These values and the merchandisable assets to be enjoyed in its appearance—an appearance that inspires confidence and wins customers, are obtainable at no greater cost than bulkier and less efficient insulations.

Alumiseal can be used everywhere.

In all types of refrigerated construction ALUMISEAL stands up to its job. In freezers, coolers, hardening rooms, bulk storage, lockers, test rooms, altitude chambers, etc., and for laboratory use ALUMISEAL is meeting and surpassing performance requirements.

Your insulating job can be better with Alumiseal.

Put your problem to your ALUMISEAL representative and let him tell you how . . .

. . . or write us today for full information applicable to your problems.

ALUMISEAL

U. S. PATENTS APPLIED FOR

REFLECTIVE INSULATION AND VAPOR BARRIER MATERIALS

C. T. HOGAN & CO., INC.
383 MADISON AVENUE
NEW YORK 17, NEW YORK

OUR MATERIAL BEARS THE TRADE NAME **ALUMISEAL** FOR YOUR PROTECTION. ONLY MATERIAL BEARING THIS TRADE NAME IS GUARANTEED TO FULFILL THE REQUIREMENTS DESCRIBED IN THIS CATALOG.

Mundet Cork Products

- a Cold Storage Insulation
- b Cold Pipe Covering and Lagging
- c Roof Insulation
- d Vibration Isolation

The Essentials of a Good Insulator

1. Low Conductivity
2. Light Weight
3. Structural Stability
4. Non-Absorbence
5. Fire Retardance
6. Ease of Installation

Why Cork is a Good Insulator

1. Cork restricts the transmission of heat, sound and vibration to a remarkably low degree, due to its internal cellular structure of sealed and non-connecting minute dead-air spaces.
2. Cork is light in weight, despite its structural strength. It is easily handled and it adds less weight than other rigid insulations — approximately 8 pounds per cubic foot.
3. Cork has a cellular structure sufficiently strong and elastic to maintain its shape and characteristics under varying conditions of use. Its elastic properties are unique.
4. Cork has no capillary attraction and so does not absorb dampness or odors. Bacterial growth, swelling, and loss of insulating value due to moisture infiltration are thus avoided.
5. Cork supports combustion only with difficulty and Mundet corkboard insulation meets the requirements of the U. S. Bureau of Standards tests as a fire retardant.
6. Corkboard units are strong, light and easily installed. No special handling required. Cuts easily, readily holds nails or wood skewers; bonds with cement, asphalt, or paint.

MUNDET

Sales and Service In 1865 the name of Mundet was first identified with cork products. Today the Company ranks among the leaders of the industry. The Company maintains branches in the principal cities of the United States and Canada for the convenience of its clients. Our branch offices (see back cover) are in charge of competent engineers who will gladly co-operate and furnish information pertinent to insulation work. Mundet Cork & Insulation, Ltd., performs the same function and offers the same facilities in Canada.

MUNDET

Contracting The Company maintains a well organized erecting force at each branch office fully capable of handling any installation contract involving its products. No contract is too small or too large.

MUNDET

Plant Facilities The Company has two plants for the exclusive manufacture of cork insulation products—one in Portugal and the other in New Jersey, ten miles from New York City. Each plant can produce many million feet (board measure) of insulation a year. The Portuguese plant is adjacent to the Port of Lisbon from which ocean sailings are possible to any part of the world. The New Jersey plant at all times carries large stocks of finished products, as do all of the branch offices located in the principal cities of the United States.

MUNDET

Guarantee The Company unqualifiedly guarantees that its material and workmanship are of the best and agrees to make good, without cost to the client, any defect that may be chargeable to inferior material or workmanship as indicated in its contract form.

Mundet Cork

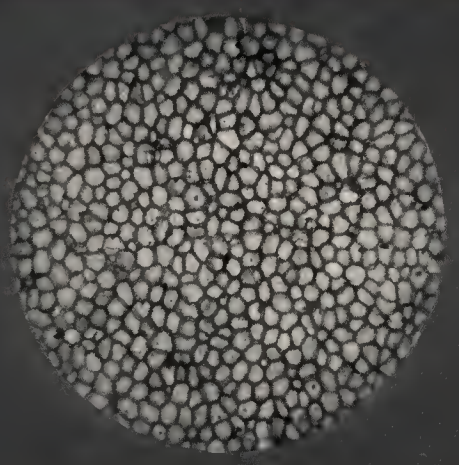
Natural Cork—Cork in its natural state consists of minute hermetically sealed cells containing "dead" air. Approximately 200,000,000 cells per cubic inch. Cell walls are resinous, resilient, and impervious to the passage of air. There is no "free" air to conduct heat or moisture through the mass and no capillary attraction.

Mundet Corkboard—Natural cork is ground into ¼" to ⅝" granules and compressed under heat in moulds to produce Mundet flat or shaped corkboard. Air spaces between granules are eliminated by the pressure and the milled resin in the cell walls cements the mass into a homogeneous structure retaining the properties of natural cork. Flat sheets, slabs and mats, and moulded fitting covers are furnished in various sizes and finishes. Regranulated cork is also available.

Mundet corkboard meets U. S. Government Master Specifications. Its heat transmission is guaranteed not to exceed .29 Btu when tested in accordance with Bureau of Standards regulations. In actual cold storage practice, this figure may be safely reduced to .27 Btu.

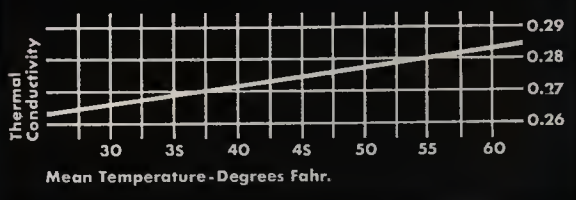
Material	Thermal Conductivity Average of two laboratories	
	Conductivity (K) (At 60° F)	Relative Insulating Value
Corkboard*	0.273	100.0
Shredded Redwood Bark	0.286	95.7
Animal Hair Board	0.302	91.0
Wood Fiber Board	0.312	87.6
Mineral Wool Board	0.321	85.3
Vegetable Fiber Board	0.346	79.2

* Corkboard values are averages of five different makes



The photomicrograph of cork shows how the cells completely fill the cork structure. Note that although each cell area and all areas are shown 5625 times actual size, no voids are evidenced between cells.

Conductivity Chart For Corkboard Insulation



MUNDET

a | Cold Storage Insulation

General Specifications

Note:—Add fallawing Joint and Finish specifications to installation specifications given below.

Joints—All joints broken, bath as to adjacent layers and to preceding course.

Finishes—*Plaster*—½ in. mixed 1:2. First caat, rough; second, flaat or trowel finished and marked off in 4 ft. squares ta minimize and direct shrinkage cracks.—*Mastic*—⅛ in. First caat, brush ar spray applicatian af Mundet Asphalt Emulsion; second coat, trowel applicatian mixed in proportions of 50 gal. of same emulsian, 100 lb. asbestas floats, 4 cu. ft. clean screened sand. Is black, may be painted.

Table of Recommended Thicknesses in inches

Ronge of temperature	Walls	Ceilings	Floor on ground	Floor above ground	Roofs
Below 0° F.	8	8	7	8	9
0° to 10° F.	7	7	6	7	8
10° to 20° F.	6	6	5	6	7
20° to 35° F.	5	5	4	5	6
35° to 50° F.	4	4	3	4	5
50° to 60° F.	3	3	2	3	4
Above 60° F.	2	2	0	2	2

Walls

Concrete, Brick, Hollow Tile

1 First Insulation Course Laid in Cement Mortar—***Preliminary***—Concrete walls roughened by hacking for bond.—***Insulation***— . . . in. Mundet Corkboard. First course in ½ in. bed of Portland cement mortar. Second course against first in heavy dip coat of hot osphalt and additionally secured by hardwood skewers.—***Joints***—as under General Specifications.—***Finish***—Plaster or mastic, as under General Specifications.

2 First Insulation Course Laid in Hot Asphalt—***Preliminary***—Concrete walls roughened by hacking for bond. Single coat Portland cement plaster left under float and thoroughly set.—***Insulation***— . . . in. Mundet Corkboard. Two spray or brush coats Mundet Asphalt Primer then first course Mundet Corkboard. Second course as in No. 1.—***Joints***—as under General Specifications.—***Finish***—Plaster or mastic, as under General Specificotions.

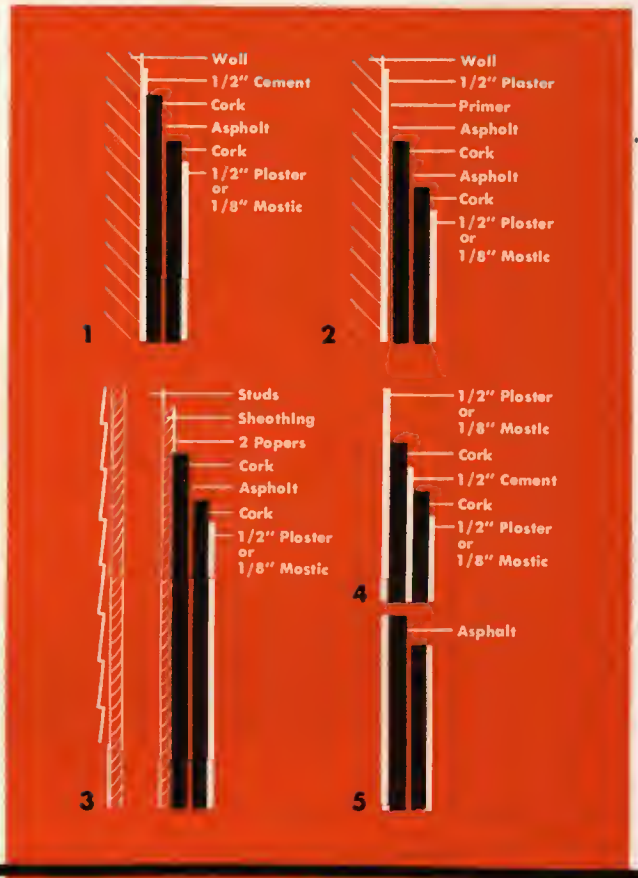
Wood Frame

3 First Insulation Course Nailed to Wall—***Preliminary***—Two courses waterproof insulation paper tacked against sheathed surfaces. —***Insulation***—. . . in. Mundet Corkboard. First course nailed dry to wall with galvanized wire nails especially made for such work. Second course as in No. 1.—***Joints***—as under General Specifications. —***Finish***—Plaster or mastic, as under General Specifications.

Cork Partitions—Solid cork, self-sustaining type

4 Cement Mortar Bond—***Preliminary***—Temporary studding for bracing.—***Insulation***—. . . in. Mundet Corkboard. First course erected against temporary studding. Second course against first in ½ in. Portland cement mortar and additionally secured by hardwood skewers.—***Joints***—as under General Specifications.—***Finish***—Plaster or mastic, as under General Specifications.

5 Hot Asphalt Bond—***Preliminary***—Like No. 4—***Insulation***—Like No. 4 except second course erected in dip coat of hot asphalt additionally secured by hardwood skewers.—***Joints***—as under General Specifications.—***Finish***—Plaster, as under Gen. Spec.

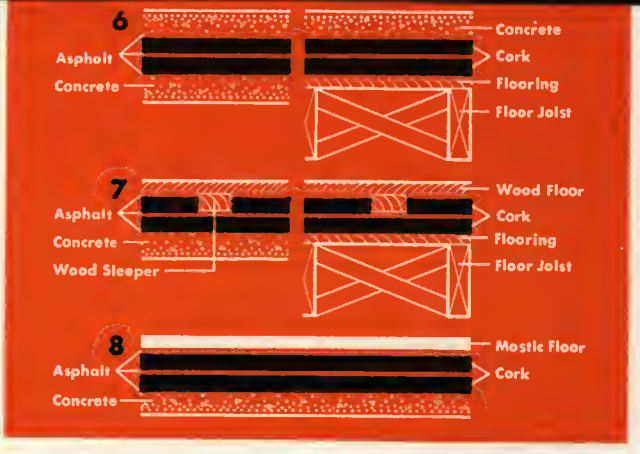


Floors

6 Concrete. Concrete or Wood Base.—***Insulation***—. . . in. Mundet Corkboard. First course in heavy hot asphalt mop coat. Second course similarly laid on first.—***Joints***—as under General Specifications.—***Insulation Finish***—Heavy hot asphalt mop coat to seal all joints.—***Concrete Wearing Floor***—(To be specified.)

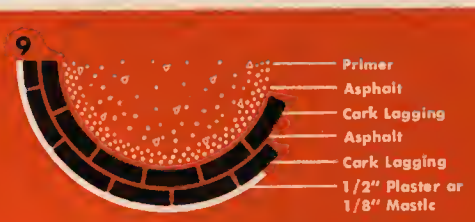
7 Wood. Concrete or Wood Base—***Insulation***—. . . in. Mundet Corkboard. Two courses, laid like No. 6, second course after sleepers are located on first course.—***Joints***—as under General Specifications. —***Sleepers***—Wood, 2 in. x 4 in. on 28 in. centers, mopped in.—***Insulation Finish***—Heavy hot asphalt mop coat to seal all joints. —***Wood Wearing Floor***—(To be specified.)

8 Mastic. Concrete Base—***Insulation***—. . . in. Mundet Corkboard. Two courses laid like No. 6.—***Joints***—as under General Specifications.—***Insulation Finish***—Heavy hot asphalt mop coat to seal all joints.—***Mastic Floor***—2 in. mastic wearing surface in two courses.



Columns

9 ***Preliminary***—Two coats Mundet Primer on columns.—***Insulation***—. . . in. Mundet Cork Lagging. First course in hot asphalt dip coat; second course similarly laid on first. Hardwood skewers of suitable length used to lock adjacent lags to each other, also to additionally secure second course to first.—***Joints***—as under General Specifications.—***Finish***—Plaster or Mastic, as under General Specifications.

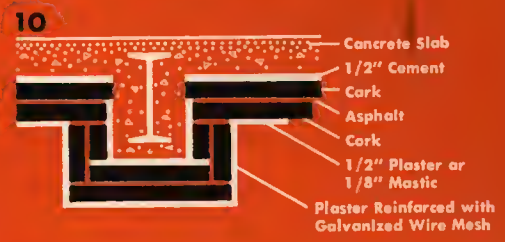


Ceilings

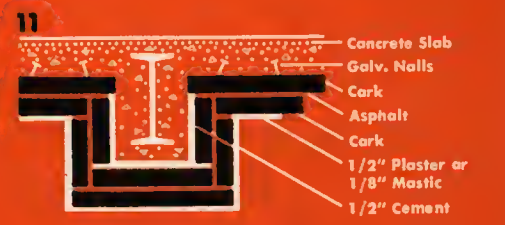
Concrete

10 First Insulation Course Laid in Cement Mortar—***Preliminary***—Ceiling areas roughened by hacking for bond and covered with tight scratch coat of Portland cement mortar.—***Insulation***—. . . in. Mundet Corkboard. First course in ½ in. bed Portland cement mortar and securely propped in place until concrete sets; second course applied against first in heavy dip coat of hot asphalt and additionally secured by hardwood skewers.—***Joints***—as under General Specifications.—***Finish***—Plaster or Mastic, as under General. (If plaster, No. 19-gauge 2-mesh galvanized wire mesh should be securely stapled to cork surfaces before plaster is applied.)

Alternate—First Insulation Course Laid between Sleepers—***Preliminary***—Ceiling areas stripped with treated 2 x 4's spaced 12 in., 18 in. or 24 in. and bolted to ceiling every 5 feet with galvanized expansion bolts; spray coat of Mundet Asphalt Primer.—***Insulation***—. . . in. Mundet Corkboard. First course in heavy dip coat hot asphalt and toe nailed to 2 x 4 strips. Second course as in No. 10.—***Joints***—as under General Specifications.—***Finish***—As in No. 10.

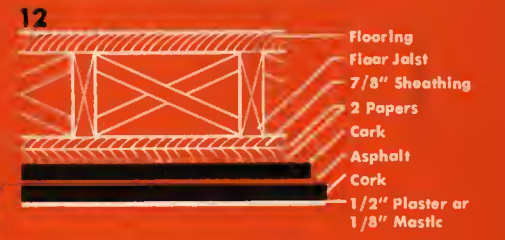


11 First Insulation Course Installed During Construction—***Preliminary***—Forms of slab portion of ceiling installed at height to accommodate insulation.—***Insulation***—. . . in. Mundet Corkboard. First insulation course of slab portion of ceiling placed in forms before pouring concrete, with at least 6 special galvanized nails per corkboard sheet driven obliquely into corkboard with heads protruding 1½ in. After stripping forms, second insulation course and both courses on beams and girders applied and finished as in No. 11.—***Joints***—as under General Specifications.—***Finish***—as in No. 10.



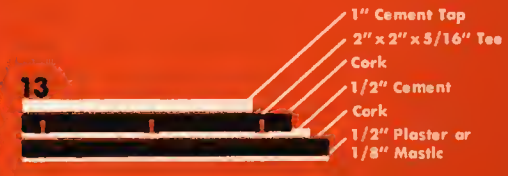
Wood

12 First Insulation Course Underside Wood Sheathing—***Preliminary***—Courses of ⅞ in. tongue and grooved sheathing nailed to underside of ceiling joists; two layers of waterproof insulation paper; second similar course of sheathing; two layers waterproof insulation paper tacked to sheathing.—***Insulation***—. . . in. Mundet Corkboard. First course nailed to prepared sheathing. Second course against first in dip coat of hot asphalt.—***Joints***—as under General Specifications.—***Finish***—Plaster or mastic, as under General Specifications.



False T Iron

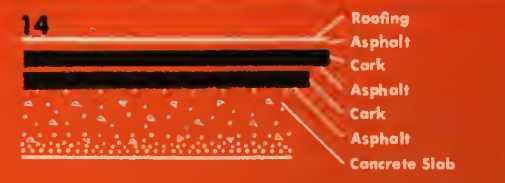
13 ***Preliminary***—Framework of 2 x 2 x . . . in. tee irons on 12½ in. centers erected on 2 x 2 in. wood framing concealed in cork wall insulation or suspended by pencil rods from main ceiling construction.—***Insulation***—. . . in. Mundet Corkboard. First course fitted snugly between tee irons after edges dipped in hot asphalt. Second course against underside of first in ½ in. Portland cement mortar; additionally secured by hardwood skewers. — ***Joints*** — as under Gen. Spec.—***Finish***—On top of first course, 1 in. Portland cement plaster. On bottom of second course as under Gen. Spec.



Roofs

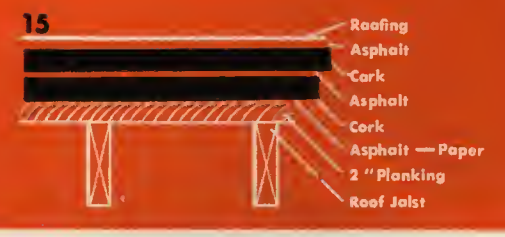
Concrete

14 ***Preliminary***—Clean roof and smooth any rough spots.—***Insulation***—. . . in. Mundet Corkboard. First course on concrete deck in heavy mop coat of hot asphalt. Second course similarly laid against first.—***Joints***—as under General Specifications.—***Finish***—None. Insulation protected before nightfall with at least two-ply roofing.



Wood

15 ***Preliminary***—Clean roof and smooth any uneven spots. On planking, one course waterproof insulation paper with seams lapped at least 3 in. and mopped in with hot asphalt.—***Insulation***—As in No. 14.—***Joints***—as under General Specifications.—***Finish***—as in No. 14.



b | Cold Pipe Covering and Lagging

Uses—For insulation of cold-water, brine, ammonia, and other refrigerant lines and cylindrical tanks, coolers, etc.

Manufacture — Same as Mundet Corkboard, thus offering the same high resistance to heat infiltration. Moulded to fit all standard size pipes and fittings and asphalt coated on inside and outside surfaces as protection against moisture. Mundet Cork Lagging for cylindrical vessels is beveled for accurate fitting of longitudinal joints and similarly treated to prevent moisture infiltration.

Clearances and Suggested Thicknesses—Pipe, Fittings and Lagging

Temp. Range °F.	Fittings	Min. Clearance Req. Between Pipes	Min. Clearance Req. Bet. Pipes and Wall Surfaces	Cork Thickness Type Inches	Mundet Cork Lag. Temp. °F.	Mundet Cork Lag. Inches
Above 35°	Screwed under 6"	6"	4"	Ice Water Thick 1.2-1.9*	Above 40°	2
	Screwed over 6"	10"	5"			
	Flanged, any size	10"	5"			
20 to 35°	Screwed under 6"	8"	6"	Brine Thick 1.7-3.0	25 to 40°	3
	Screwed over 6"	14"	8"		10 to 25°	4
	Flanged, any size	14"	8"			
−5 to 20°	Screwed under 6"	10"	8"	Special Thick 2.6-4.0	Below 10°	6
	Screwed over 6"	18"	12"			
	Flanged, any size	18"	12"			

* Thickness required varies according to size of pipe. Standard lengths, 3'.

Pipe Covering

General Specifications

Note—For complete specifications, add Finish specifications below.

Preliminary—Pipe lines and fittings tested and approved; freed of rust, scale, dirt, oil, frost, moisture, loose connections.—***Spacing***—Minimum clear space (between pipes . . . ; between pipes and adjacent surfaces . . . ;) as per table above.—***Pipe insulation***—Mundet (1, 2 or 3 of table above) Cork Pipe Covering; secured with copper-clad steel wires spaced 6 in. intervals. Screwed fitting covers are installed ***before*** pipe covering. Flanged fitting covers are installed ***after*** pipe covering.—***Fittings insulation***—Mundet Moulded Cork Fitting Covers of same thickness as Pipe Insulation; secured with copper-clad steel wires, using at least six on all flanged fittings also on screwed fittings over 6 in., four on screwed fittings up to 6 in.—***Voids***—All space between fittings and Fitting Covers filled with Mundet Fitting Filler.—***Joints***—Butted firmly and securely together; sealed with Mundet Waterproof Cement.—***Seams***—Seams and chipped edges in Pipe Covering and Fitting Covers filled with Mundet Seam Filler and surface made smooth.—***Hanger Shields***—Pipe line supported outside of Covering in carefully fitted metal shields, which extend half way up the Covering and 4 in. each side of hanger.

Lagging

General Specifications

Note—For complete specifications, add Finish specifications.

Preliminary—Equipment tested, approved and prepared as in Preliminary on Page 6.—***Body insulation***—Mundet (4, 5, 6 or 7 listed above) Cork Lagging applied in . . . courses; secured with copper-clad steel wires spaced not more than every 6 in. On tanks over 20 in. diameter . . . outside measurement of cork . . . secured with No. 25 gauge galvanized spring steel bands ¾ in. wide, applied with special flush type clips on 9 in. centers. Additional courses applied similarly, with all joints broken.—***Flange insulation***—Same as Body Insulation; lapped upon body lagging at least thickness of insulation (never less than 4 in.) and projecting beyond outermost portion of head a distance equal to body insulation thickness.—***Head insulation***—Mundet Corkboard Discs of same total thickness as Body Insulation; applied against head and supported by flange lagging.—***Voids***—All space between body and lagging, also between bolts and flanges filled with Mundet Fitting Powder; space between heads and flanges filled with fine regranulated Mundet Cork.—***Joints***—Butted firmly and securely together; sealed with Mundet Waterproof Cement; all broken.—***Seams***—Seams and chipped edges filled with Mundet Seam Filler and surface made smooth.

(A) Standard Mineral Rubber Finish

Used for the majority of pipe covering installations.—See General Specifications above.—***Finish***—One coat of Mundet Finish Paint on on entire outer surface of insulation.

(B) Roofing Felt Weatherproof Finish

Used for outdoor or moist air conditions.—See General Specifications above.—***Roofing Felt***—. . . layers of . . . ply smooth-surfaced asphalted roofing felt applied after seams in Pipe Covering have been filled; joints lapped at least 2 in.; laps laid to form a watershed; secured with staples or copper-clad steel wire and sealed with asphalt paint.

(C) Canvas Jacket, painted

Used for a decorative finish.—See General Specifications above—***Preparation***—No. 8 rosin-sized paper wrapped smoothly over Pipe and Fittings Covering; asbestos cement troweled on fittings thick enough to give smooth base for canvas. — ***Jacket*** — 8 oz. canvas stretched smoothly over paper, neatly sewn with at least three stitches per inch; seams located where least visible.—***Finish***—Canvas sized; when dry, painted with two coats of lead and oil paint.

(D) Membrane Jacket

Used for severe low temperature conditions—See General Specifications above.—***Membrane***—Over fittings, a layer of mineral rubber cloth lapped at least 2 in., sealed with asphalt paint. Over straight pipe, a layer of rubberized adhesive membrane tape started with a 2 in. lap over fittings and lapped at least 1 in. on pipe.—***Finish***—As in A or C.

(E) Mastic Finish

Usually used with Pipe Covering "A".—See General Specifications above.—***Finish***—⅛ in. applied over entire outer surface of insulation. First coat, brush or spray application of Mundet Asphalt Emulsion; second coat, trowel application mixed in proportions of 50 gal. of same emulsion, 100 lb. asbestos floats, 4 cu. ft. clean screened sand. Is black, may be painted.

(F) Canvas Jacket, painted

Often used with Pipe Covering "C".—See General Specifications above.—***Preparation***—No. 8 rosin-sized paper placed smoothly over Body Insulation.—***Jacket***—8 oz. canvas stretched smoothly over paper; neatly sewn with at least three stitches per inch; seams of invisible type.—***Finish***—Canvas sized; when dry, painted with two coats lead and oil paint.

(G) Plaster Jacket

Used for neat appearance and possibility of rough usage.—See General Specifications above.—***Preparation***—1 in. hexagonal mesh galvanized wire, securely stapled to Body Insulation.—***Jacket***—Two coats Portland and asbestos cement plaster. First, rough or scratch coat; second, troweled smooth and even.—***Finish***—Painting optional.

Pipe Covering Installation

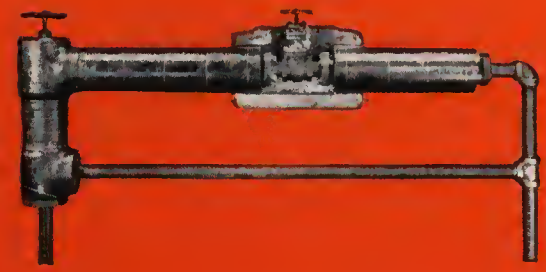
1

4

2

5

3



6

1—Showing screwed Tee cover in place and screwed angle valve cover being fitted. After the angle valve cover is wired in place, the voids between cover and valve are filled with a mixture of granulated cork and melted paraffin or Mundet Brine Putty.

2—Showing installations of pipe covering between screwed angle valve cover and bolt heads of flange.

3—Applying flanged valve cover after pipe covering has been installed between flange bolt heads. Voids between valve and cover are filled as in "1".

4—Showing application of screwed elbow cover and the completed flanged valve cover. A cork disc is inserted at the bonnet of the valve cover to seal in the void filler compound.

5—Nipple between elbow and flange has been insulated and flange cover is being prepared.

6—Pipe covering is complete. All cork contact surfaces covered with Mundet Waterproof Cement before wiring. All pipe covering wires spaced at 6" or less intervals. Seams filled with Mundet Seam Filler and entire installation painted with Mundet Finish Paint.

C Roof Insulation

Mundet "Jointite" Corkboard

The high resistivity to heat infiltration plus the other basic characteristics of Mundet "Jaintite" Carkbaard make this an ideal material far roaf insulatian.

Its lightness is af even greater value and allaws variaus savings in material and installation af — **a** — walls, calumns, girders, trusses and purlins that suppart the raaf; — **b** — steel, woad and cancrete members and material camprising the roaf; and in — **c** — haisting, handling and fitting insulatian into place. All af these savings alsa mean a speeding af canstruction.

Heat Transmission

The primary purpase af raof insulatian is to minimize heat transfer in either directian thraugh the raaf. In winter this saves fuel and prevents ceiling candensatian; in summer it lessens the temperature rise in the building interiar. The great reductian in heat transmissian through the use af Mundet Corkboard of variaus thicknesses is shown in the Heat Lass Table an the appasite page.

Condensation

When moist air in cantact with a cald raof is caaled until it reaches its paint af tatal saturatian ar dewpaint, same af the moisture candenses an the cald surfaces. This "ceiling sweat" accumulates and draps ta the flaor where it may cause discamfart ta warkmen and damage ta machinery, materials or finished praducts. The loss due ta candensation must be canside red separately from the direct lass due to heat leakage thraugh the raaf, the latter being present in all uninsulated canstruction while the former appears only when the humidity is relatively high or when the difference in temperature between the inside af the roaf and the raam is of cansiderable magnitude.

Losses Prevented by Insulation

Direct—**a**—Heat transmitted thraugh raaf and walls. —**b**—Damage ta gaads in pracess of manufacture.—**c**—Decreased efficiency af labar.

Indirect—**a**—Damage to machinery.—**b**—Increased maintenance.—**c**—Deteriaratian af raof structure, especially if waaden.—**d**—Delay due ta repairing af replacing gaads.—**e**—Ill will af customers.—**f**—Lawered morale of labor.

Uncantralled candensation is a serious prablem in the fallawing types af industrial aperatians:—Bakeries—Dairies—Dye Plants—Faad Pracessing Plants—Laundries—Lumber Drying Raams and Kilns—Packing Houses—Paper Mills—Pawer Hauses—Indaor Swimming Pools—Textile Mills, cattan, waal and silk—Tabacca factaries—Turkish Baths—Twine Mills.

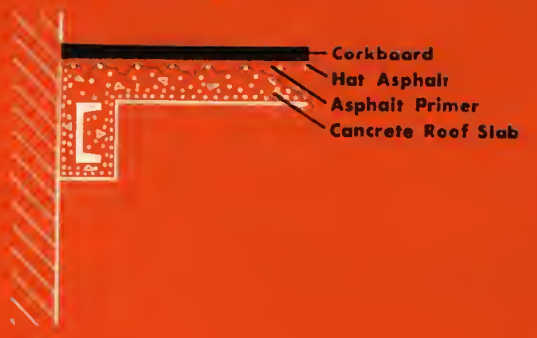
Improved Working Conditions

When bringing to the attentian af manufacturers the need far cark insulatian in buildings, the greater stress has been laid in the past upan the resultant saving in fuel. Today, industrial executives in ever increasing numbers realize that a most important factar in their prablem af keeping casts at a minimum is the attitude of their labar. A worker is never efficient when he is uncamfartable fram heat, cald ar dampness and therefare the use af insulatian, while it may be considered as an intangible benefit from this angle, is nevertheless of vital impart.

Specifications and Installation Details

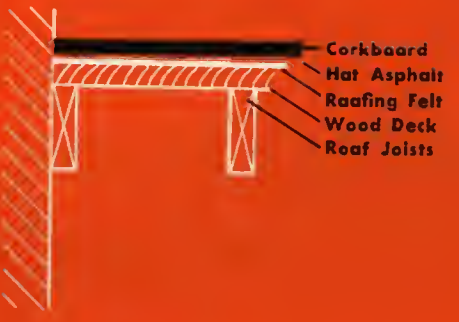
Over Concrete Roof Decks

Preliminary — Twa caats Mundet Asphalt Primer. — *Insulatian*— . . . in. Mundet "Jaintite" Carkbaard in heavy hat asphalt map caat. Secand layer, if required, in hat asphalt dip coat with all jaints braken.—*Finish*—Nane. Insulatian pratected befare nightfall with at least twa-ply roafing.



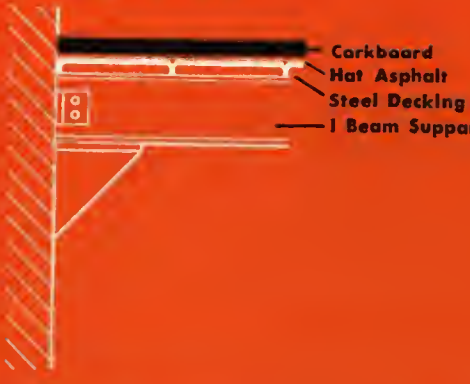
Over Waad Raaf Decks

Preliminary—One layer of . . . . . raafing in hat asphalt; jaints lapped 3-in.—*Insulatian*— . . . in. Mundet "Jaintite" Carkbaard in heavy hat asphalt map caat. Secand layer, if required, in hat asphalt dip caat with all jaints braken.—*Finish*—As under Cancrete Raaf Decks.



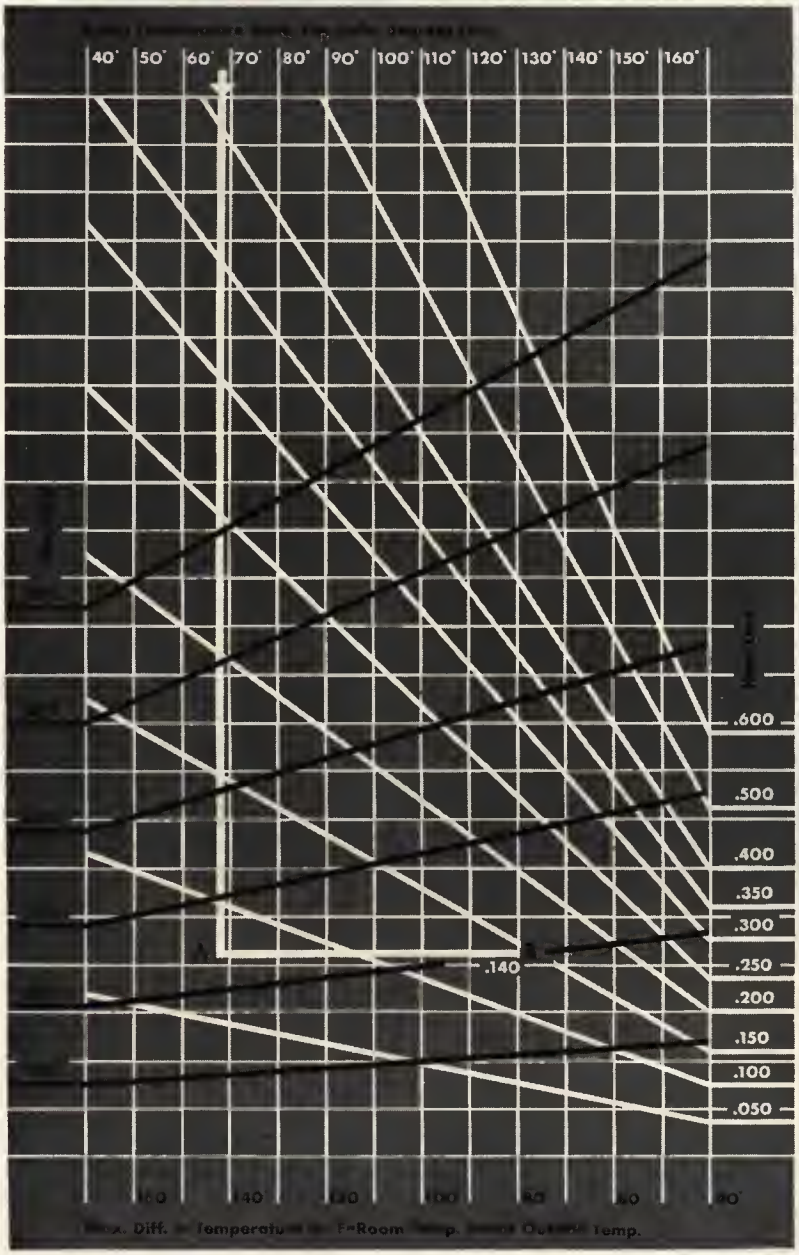
Over Steel Raaf Decks

Insulatian— . . . in. Mundet "Jaintite" Carkbaard in heavy hat asphalt map caat. Secand layer, if required, in hat asphalt dip caat with all jaints braken.—*Finish*—As under Cancrete Raaf Decks.



How to Determine the Thickness of Corkboard Needed

Heat Loss Chart



Heat Loss Table

Type of Roof Construction	Heat Loss
2-in. Concrete Slab and ⅜-in. Roofing	
No Insulation	.658
1-in. Mundet Corkboard	.206
1½-in. " "	.153
2-in. " "	.122
3-in. " "	.087
4-in. " "	.067
3-in. Concrete Slab and ⅜-in. Roofing	
No Insulation	.610
1-in. Mundet Corkboard	.201
1½-in. " "	.151
2-in. " "	.120
3-in. " "	.086
4-in. " "	.067
4-in. Concrete Slab and ⅜-in. Roofing	
No insulation	.568
1-in. Mundet Corkboard	.197
1½-in. " "	.148
2-in. " "	.118
3-in. " "	.085
4-in. " "	.066
4-in. Concrete Slab and ⅜-in. Roofing	
No insulation	.500
1-in. Mundet Corkboard	.187
1½-in. " "	.143
2-in. " "	.115
3-in. " "	.083
4-in. " "	.065
2-in. Yellow Pine and ⅜-in. Roofing	
No insulation	.345*
1-in. Mundet Corkboard	.160
1½-in. " "	.127
2-in. " "	.105
3-in. " "	.078
4-in. " "	.062
3-in. Yellow Pine and ⅜-in. Roofing	
No Insulation	.256*
1-in. Mundet Corkboard	.138
1½-in. " "	.112
2-in. " "	.095
3-in. " "	.072
4-in. " "	.058
Sheet Steel Deck and ⅜-in. Roofing	
No Insulation	1.000†
1-in. Mundet Corkboard	.231
1½-in. " "	.167
2-in. " "	.130
3-in. " "	.091
4-in. " "	.067

*On yellow pine, nominal thickness specified, actual thickness used in tests

†Factor as furnished by The Truscon Steel Co. No wind; smooth plane surface assumed

Use of the Heat Loss Chart—Starting at top of chart follow down the specified Room Temperature line to point of intersection "A" with line of permissible Humidity. Proceed horizontally to point of intersection "B" with vertical line of Max. Temp. Difference extended upward from bottom of chart. This point "B" interpolated between adjacent Heat Loss Lines gives the Max. Allowable Heat Loss without condensation under the assumed conditions.

Use of Heat Loss Table—The above table gives the heat loss or transfer through different roofs insulated with various thicknesses of corkboard. Used with the Heat Loss Chart, the required thickness of corkboard for a given heat loss "B" is readily determined without further calculation.

Example—The Problem:—A plant with 3-in. yellow pine roof and ⅜-in. built-up roofing; indoor temperature (dry bulb) at ceiling, 68° F; relative humidity, 76%; lowest outdoor temperature, minus 12° F.

The Solution:—Proceed (1) down the 68° Room Temperature line to the 76% Humidity diagonal, (2) horizontally to the line of 80° Maximum Temperature Difference, (3) interpolate heat loss value between adjacent Heat Loss Curves. The resultant heat loss "B" is .140. In the Table of Heat Loss for 3-in. yellow pine, the figure, .140, lies between the value for 1-in. and 1½-in. Mundet Corkboard. Therefore 1½-in. Corkboard would be required to prevent condensation under the stated conditions.

d Vibration Isolation

Isolation of Machinery Vibration

Procticol considerations prevent the mochine designer from eliminoting oll vibration in industriol mochines. But, whether these vibrations be of the sharp, impact type or the relotively smoll vibrotions found in complex mochines performing o voriety of operotions, it is possible ond procticol to keep such vibrations within the mochine limits ond so isolote them from the building structure. Likewise, the very high, sound-producing vibrotions can be effectively damped.

Requirements of an Isolation Material

A sotisfactory isoloting medium must be oble to:—1—Support the imposed loods without undue or varioble rote of deflection.—2—Absorb vibration in the mochine without tronsmitting it to the surrounding structure.—3—Withstond repeated looding without fotigue or permonent set.—4—Withstond oction of oir, woter, oil, dilute ocids or alkolies without deteriorotion.—5—Maintoin its resilience with oge.

Mundet Cork as an Isolation Material

Mundet Cork hos proved itself to be pre-eminently fitted for vibrotion isolotion use. Notural cork ond three grodes of corkboord provide o wide choice for the control of deflection due to lood and the hermeticolly seoled oir cell structure of cork (over 50% oir by volume) gives it a practically stroight line compression curve—deflection directly proportionol to looding within wide limits. Thousonds of installotions, some over o quorter of o century old, under widely vorying conditions of service prove the efficiency of Mundet Cork Isolotion. Among the instollotions are steom, gos, and Diesel engines, motors, generotors, pumps, fans, blowers, presses, elevator mochinery, mixers, grinders, etc.

Types of Mundet Isolation Cork

1 Natural Cork Isolation Mat

For loods of obout 800 to 2000 lbs. per sq. ft.—Thickness usually used: 1½ to 2 in. for averoge vibrotions, 3 or 4 in. for intense vibrotions or shock loads. Blocks of naturol cork of the required thickness ore used to moke an isolotion mot in two woys—a—Held in a rigid steel frame—for use under a mochine mounted on foundotion or floor slab without side isolation;—b—Bound in ospholt paper applied in hot asphalt to the sides ond bottom of the foundotion blocks set flush with floor.

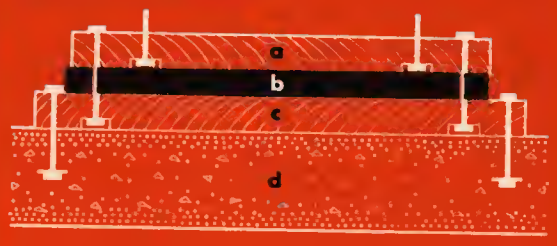
2 Manufactured Machinery Isolation Cork

For Loods of about 2000 to 6000 (or more) lbs. per sq. ft.—Thickness usually used: 1½, 2, 3 and 4 in., depending on frequency and omplitude of the vibration.

Sheets of pure cork ore mode in vorious thicknesses and densities by a process similar to thot of corkboard. It is structurolly strong ond must be looded within the specified limits for proper isolotion efficiency.

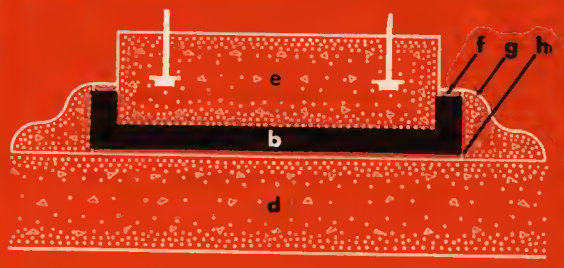
Commercial densities ore Light, 1.00 - 1.30 for loads of 2000 to 3000 lbs./sq. ft.; Medium, 1.30 - 1.50 for loods of 3000 to 3500 lbs./sq. ft.; Heovy 1.50 - 1.70 for loods of 3500 to 6000 lbs./sq. ft. A Speciol 1.80 - 1.90 should be used only when recommended by Mundet engineers..

Typical Wood Mount



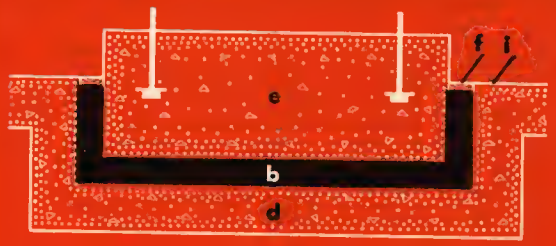
a Wood skids for mochine bose
b Mundet Isolation Cork
c Wood skids to prevent bridging from bose to floor
d Concrete floor

Typical Surface Foundation



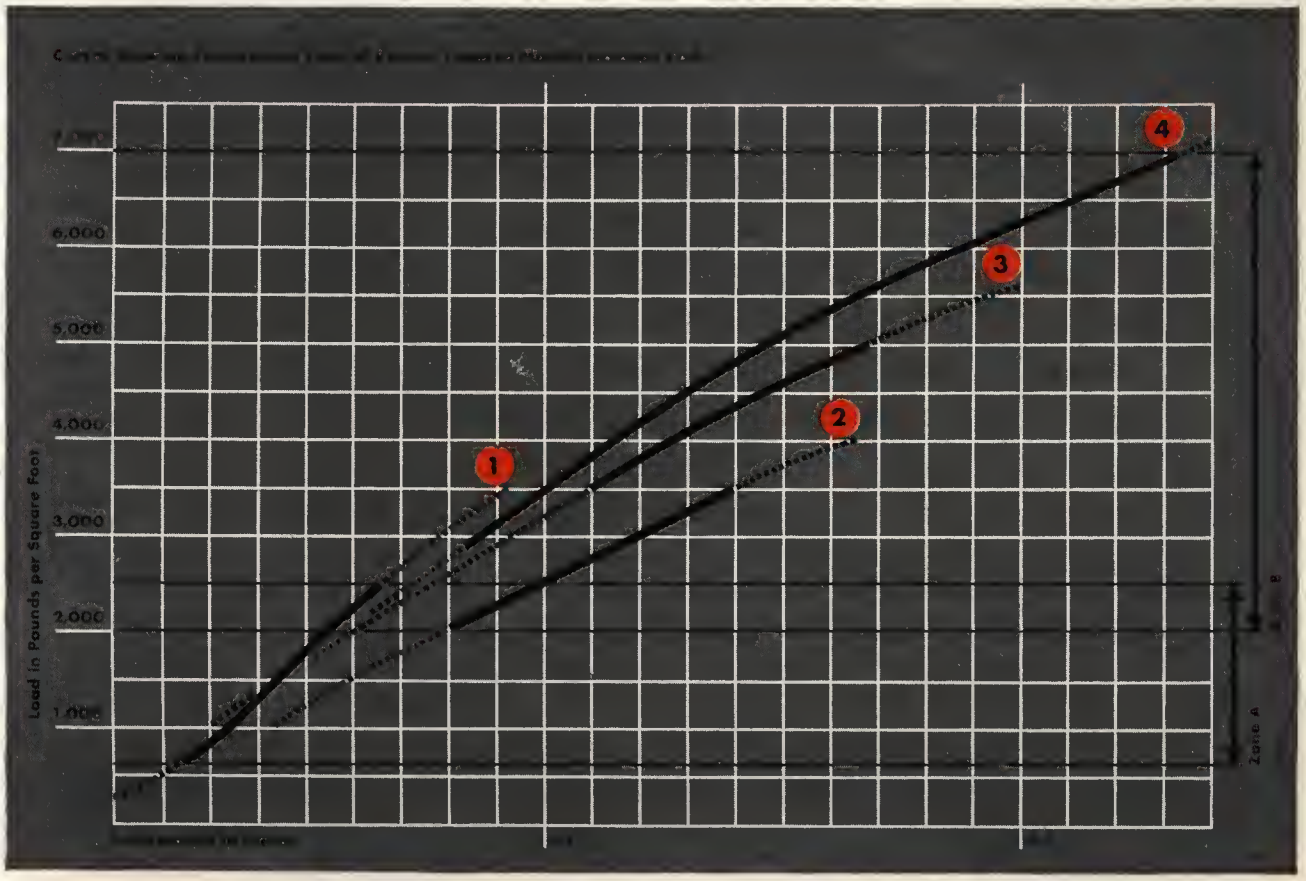
b Mundet Isolotion Cork
d Concrete floor
e Concrete foundotion block
f Asphalt coulking
g Concrete curb
h Cement levelling coot

Typical Pit Foundation



b Mundet Isolotion Cork
d Concrete floor
e Concrete foundotion
f Asphalt coulking
i 2 ply ospholt membrone

Selection chart for Mundet Isolation Cork



The above chart gives the deflection under load and the load limits for the recommended types and thicknesses of cork and corkboard for average conditions.

1. Mundet Natural Cork Isolation Mat—1 ½ in. thick. For 800 to 2000 lb./sq. ft. loads.
2. Mundet Machinery Isolation Cork—light density—2 in thick. For 2000 to 3000 lb./sq ft. loads.
3. Mundet Machinery Isolation Cork—medium density—2 in. thick. For 3000 to 3500 lb./sq. ft. loads.
4. Mundet Machinery Isolation Cork—heavy density—2 in. thick. For 3500 to 6000 lb./sq. ft. loads.

The deflection varies directly with the thickness for any one type of cork or corkboard.

The chart is divided into zones which show the recommended load limits. The curves are shown as solid lines within the zone limits, and their behavior outside of these limits is shown by the dotted extensions.

Zone A is for Mundet Natural Cork Isolation Mat.
Zone B is for Mundet Machinery Isolation Cork.

Mundet cork has been tested for static loads up to 15,000 lbs./sq. ft. Further information is available regarding any phase of the use of cork for vibration isolation. Our engineering department will cooperate in the design of installations. Please call upon us.

Specification

(In a pit where monolithic concrete base is to be cast upon the cork.)
***Preliminary*—Pit bottom and sides which receive isolation must be true, in alignment, clean, smooth and dry.—*Isolation*—Mundet (specify type of cork); bottom . . . in. thick, sides . . . in. thick; all laid in heavy hot asphalt mop coat.—*Finish*—Over exposed surfaces, two layers waterproofing felt, mopped in, with hot asphalt; edges lapped at least 6-in.**

Installation Hints

The thickness and density of cork should be in such relation to the load that the cork is compressed within its range of effective vibration absorption. Proper compression—not too great or too small—of the air-filled cork cells is necessary to secure that degree of resiliency giving most satisfactory damping effect. In some cases full bed plate areas cannot be isolated but only limited portions of the bed plate should be supported on Mundet Isolation Cork.

Heavy loads and light densities give good results. Heavy foundations lower the center of gravity and increase the damping effect.

Any direct unisolated contact or connection should be avoided. Through bolts, if used, should be isolated along the shafts and under the head washers in order to prevent the flow of machine vibration to the supporting structure.

Mundet Cork Corporation

Insulation Division: 7101 Tonnelle Ave., North Bergen, N. J.

Insulation Factory: Hillside, N. J.

"Everything Made of Cork"

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Appleton, Wis.	Hartford, Conn.	Phoenix, Ariz.	Tacoma, Wash.
Averill Park, N. Y.	Johnson City, Tenn.	Plattsburgh, N. Y.	Toledo, Ohio
Baltimore, Md.	Knoxville, Tenn.	Portland, Oregon	Tucson, Ariz.
Brookings, S. D.	Memphis, Tenn.	Providence, R. I.	Utica, N. Y.
Buffalo, N. Y.	Minneapolis, Minn.	Richmond, Va.	Washington, D. C.
Charleston, W. Va.	Nashville, Tenn.	Rochester, N. Y.	Westbury, N. Y.

FOR ROOFS · WALLS · FLOORS

PITTSBURGH
PC
CORNING

FOAMGLAS®

When you insulate with FOAMGLAS . . . you insulate for good!

PITTSBURGH CORNING CORPORATION

632 DUQUESNE WAY · PITTSBURGH 22, PENNSYLVANIA

1948 Pittsburgh Corning Corporation

PC FOAMGLAS . . . the permanent insulation

Here's the Secret of Permanent Insulation

Look at the picture for a minute. You can see that PC Foamglas is composed of tiny glass cells . . . millions of them. In these closed cells—filled with sealed-in air—lies the secret of the material's excellent insulating properties.

Used as an insulating material, PC Foamglas withstands humidity, helps to maintain desired temperature levels, to minimize condensation. When installed according to our specifications for recommended applications, PC Foamglas retains its original insulating efficiency *permanently*.

Easy to Cut and Shape

The strong, rigid blocks of PC Foamglas can be quickly and easily cut and shaped to fit around openings or projections, with ordinary tools, right on the job.

The unique qualities of PC Foamglas Insulation will doubtless recommend it to you for use on roofs, in walls, floors, ceilings, partitions and for industrial equipment and piping.

Every architect, engineer and plant maintenance official should know why PC Foamglas Insulation is so efficient—trouble-free—economical.

On the following pages you will find full engineering information on PC Foamglas, with helpful, explanatory tables, lists and charts.

PERMANENT INSULATION VALUE

PC Foamglas will not absorb moisture. It eliminates the necessity of expensive repairs, commonly caused by deterioration of the insulation material resulting from dampness. Its insulation value remains constant indefinitely, and it is, therefore, superior to other insulating materials.

MOISTUREPROOF

Tests show that PC Foamglas, with its millions of tightly sealed cells, is vaporproof. Complete immersion tests in water will readily demonstrate its character. Should a finished roof surface be punctured in service, no water will travel into or through the Foamglas Insulation to result in widespread damage and impair the performance of the insulation.

NONCOMBUSTIBLE

As a true glass, Foamglas is noncombustible. This characteristic is especially valuable where it is used as insulation on flat roofs, over materials which are not fire-resistant.

PC Foamglas is listed by Underwriters' Laboratories, Inc., under Label Service, Guide No. 540 IO, January 21, 1948, File R 2844.

LIGHT WEIGHT

PC Foamglas has a specific gravity of 0.160, a weight of 9 to 11 pounds per cubic foot. Because it is impervious to water and consists of sealed cells, it is buoyant. Thus it is applicable to various types of floats, life rafts, lifeboats, industrial floats, etc. Its weight is comparable to that of cork or commercial balsawood.

ODORLESS — VERMINPROOF

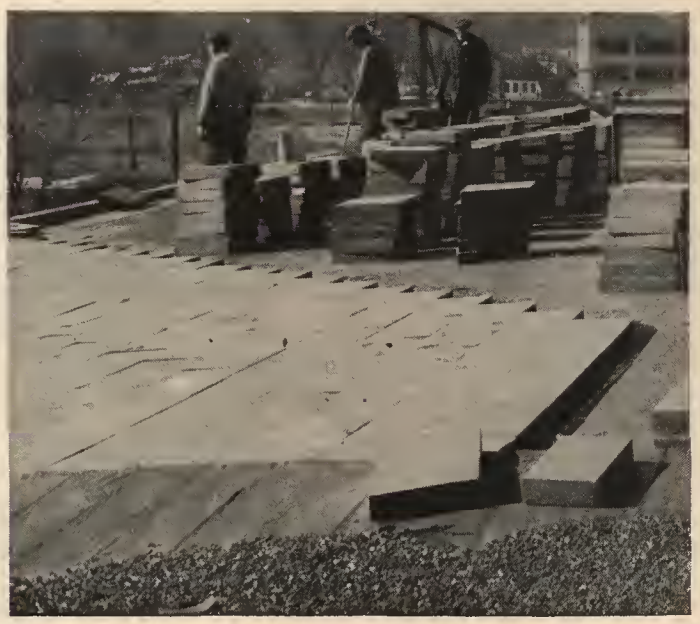
Once it is installed, PC Foamglas does not absorb or emit objectionable odors. Vermin won't gnaw their way through Foamglas. And it provides no food or nesting material for rodents or other pests.

RIGID

PC Foamglas is more rigid and stronger than most materials regularly used for insulation and buoyancy. It will support its own weight in any type of wall construction without danger of crushing or packing. This makes it ideal for building up self-supporting partitions or walls of solid insulating material. It should not, however, be used as a load-bearing wall.

DURABLE

PC Foamglas is highly durable. This inorganic material is not harmed by most acid atmospheres or solutions that would quickly deteriorate many other insulating or buoyant materials. Its properties include high resistance to crushing and bending.



This re-roofing job includes permanent insulation. Roofers found that the big light slabs were easy to handle, that they made a firm even base for roofing felt.

PROPERTIES OF PC FOAMGLAS INSULATION

Absorption 0
Adsorption (water) .... .005 lbs. per sq. ft. of surface area
Alkalinity ..... pH = 7.5
Capillarity 0
Coefficient of Expansion .. .0000045 (in., ft., etc.) per ° F. temp. change
Composition ..... A true glass—completely inorganic
Compressive Strength ..... 150 lbs. per sq. in.
Flexural Strength (Modulus of Rupture) . 130 lbs. per sq. in.
K (Conductivity at 50° F. Mean Temp.) ..... 0.40 B.t.u./Hr./Sq. Ft./° F./In.
Moisture Vapor Transmission ..... 0 (impervious)
Shear Strength ..... 64 lbs. per sq. in.
Specific Heat ..... 0.200 B.t.u. per lb.
Tensile Strength ..... 84 lbs. per sq. in.
Weight ..... 10.0 lbs. per cu. ft.

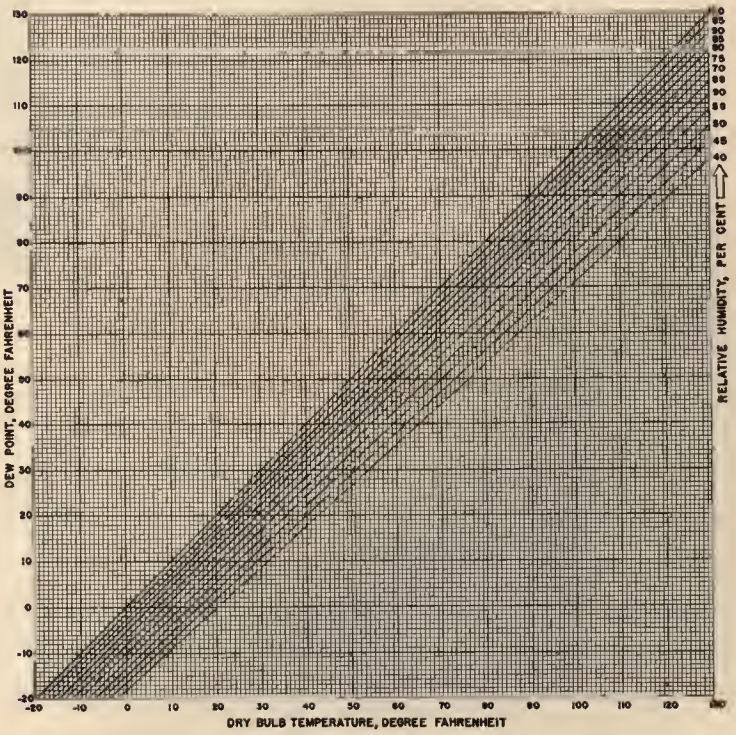
NOTE: Values are average for design purposes based on the weight of 10 lbs. per cu. ft. Weight varies from 9 to 11 lbs. per cu. ft.

SIZES AND PACKING

Standard Sizes	Pieces Per Carton	Sq. Ft. Per Carton	Approximate Weight Per Carton
12 x 18 x 2	12	18	32.5 lbs.
12 x 18 x 3	8	12	32.5 lbs.
12 x 18 x 4	6	9	33.0 lbs.
12 x 18 x 5	6	9	40.5 lbs.

NOTE: Dimensions for all size blocks are subject to a tolerance of $\frac{1}{16}$" plus or minus.

DEW POINT TEMPERATURES FOR VARIOUS AIR TEMPERATURES AND RELATIVE HUMIDITIES



PC FOAMGLAS INSULATION FOR FLAT DECK ROOFS

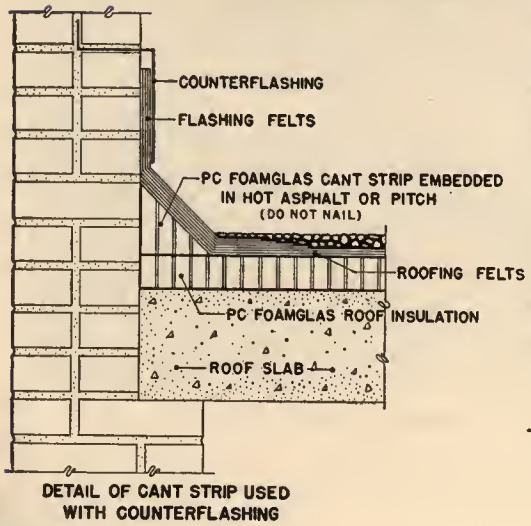
The only material of its kind!
PC Foamglas Insulation for Roofs

PC Foamglas is not a fiber, not a wool, not a board, not a batt. Foamglas is cellular glass, in the form of big, lightweight blocks, each composed of millions of minute, air-filled closed glass cells. And as such, Foamglas has excellent insulating properties. On roofs, of all sorts of buildings, PC Foamglas is helping to maintain required temperature levels, to minimize condensation and to withstand humidity from Canada to Mexico.

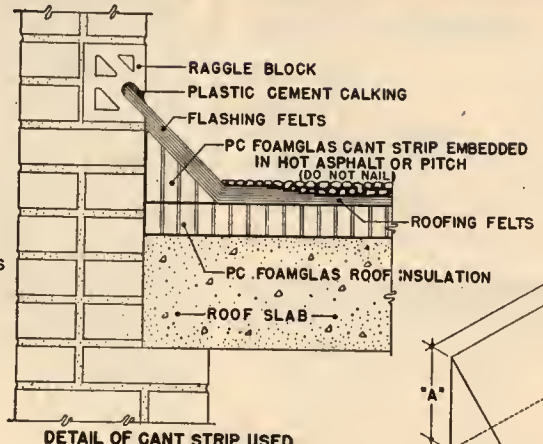
PC Foamglas is resistant to moisture, fumes, vapor and acid atmosphere—elements that frequently impair the insulating value of other materials.

CANT STRIPS made of PC Foamglas are light and strong, set up quickly and are easily handled. They can be cut to fit accurately in corners, around pipes and other obstructions and against irregularities in parapets—right on the job—with ordinary tools. The cross sections on this page show how PC Foamglas cant strips should be installed. Being Foamglas, these cant strips do not warp, shrink, swell or rot—assuring permanent, satisfactory service.

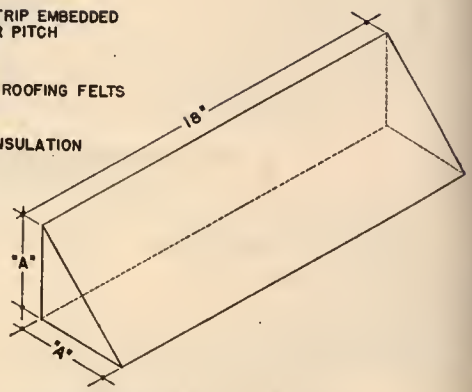
When you insulate with FOAMGLAS you insulate for good!



DETAIL OF CANT STRIP USED WITH COUNTERFLASHING



DETAIL OF CANT STRIP USED WITH RAGGLE BLOCK



NOTE: "A" dimensions are 4" x 4", 4⅜" x 4⅜" and 4¾" x 4¾".

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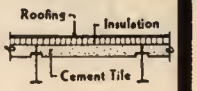
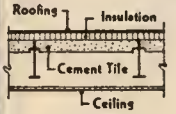
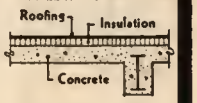
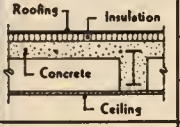
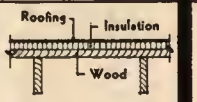
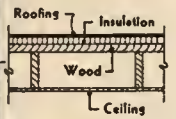
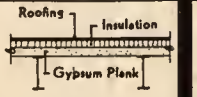
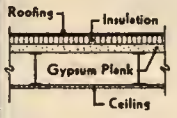
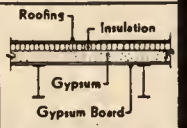
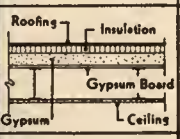
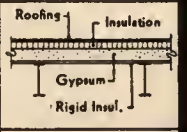
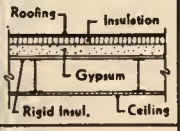
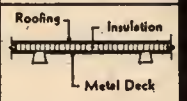
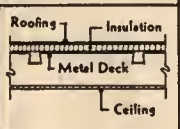
HEAT TRANSMISSION (U) THROUGH VARIOUS TYPES OF FLAT ROOFS

WITHOUT CEILING, UNDERSIDE OF ROOF EXPOSED									ROOF-DECK TYPES	WITH METAL LATH & PLASTER CEILING								
INSULATED WITH FOAMGLAS					UN-INSUL-ATED	IDENT-ITY	DECK THICK-NESS	CONSTRUCTION		CONSTRUCTION	DECK THICK-NESS	IDENT-ITY	UN-INSUL-ATED	INSULATED WITH FOAMGLAS				
6″	5″	4″	3″	2″										2″	3″	4″	5″	6″
.062	.073	.089	.12	.16	.84	A	1⅝″		PRECAST CEMENT TILE		1⅝″	A-1	.43	.14	.10	.081	.067	.058
.062	.073	.089	.12	.16	.82	B	2″		CONCRETE		2″	B-1	.42	.14	.10	.081	.067	.058
.061	.072	.088	.11	.16	.72	C	4″				4″	C-1	.40	.13	.10	.080	.067	.057
.060	.071	.087	.11	.15	.65	D	6″				6″	D-1	.37	.13	.098	.079	.066	.056
.059	.069	.083	.11	.14	.49	E	1″		WOOD		1″	E-1	.31	.12	.094	.076	.064	.055
.056	.066	.079	.098	.13	.37	F	1½″				1½″	F-1	.26	.11	.088	.072	.061	.053
.055	.064	.076	.094	.12	.32	G	2″				2″	G-1	.24	.11	.086	.071	.060	.052
.052	.059	.070	.084	.11	.23	H	3″				3″	H-1	.18	.095	.077	.064	.056	.049
.059	.069	.084	.11	.14	.53	J	2″		GYPSUM PLANK		2″	J-1	.33	.12	.095	.077	.064	.055
.057	.066	.079	.099	.13	.38	K	2½″		GYPSUM FIBER CONC. ON ½″ GYPSUM BOARD		2½″	K-1	.27	.11	.089	.073	.062	.053
.055	.064	.076	.093	.12	.31	L	3½″				3½″	L-1	.23	.11	.084	.070	.059	.052
.053	.061	.072	.088	.11	.26	M	2½″		GYPSUM FIBER CONC. ON ½″ RIGID INSU-LATION BOARD		2½″	M-1	.20	.10	.080	.067	.057	.050
.063	.074	.091	.12	.17	1.06	N	—		METAL DECK		—	N-1	.46	.14	.10	.082	.068	.058

NOTE: Nominal thicknesses of wood decks are shown. Actual thicknesses have been used to determine "U" values.

(U) values are expressed in B.T.U. per square foot per degree F. temperature difference per hour. Conditions assumed: Mean temperature 50 degrees F., still air inside and 15 M.P.H. wind velocity outside.

FOAMGLAS INSULATION FOR FLAT DECK ROOFS

SPECIFICATIONS FOR FOAMGLAS INSTALLATION ON FLAT DECK ROOFS **(Slope not exceeding 2" to 1'-0")**

The following specifications are for use in Normal Temperature Applications, 50° to 120° F. Where temperatures over 120° F. are to be maintained, write us for special application specifications.

General Conditions	The "General Conditions" of the contract are a part of these specifications.
Scope of the Work	This contractor shall furnish all labor and material to install all PC Foamglas Insulation on roof decks as noted on the drawings, or as listed hereunder. This shall include the furnishing and application of (asphalt) (pitch)—whichever is required for the application of any membrane under the insulation and for the finished roofing—and any other materials necessary for a complete and satisfactory installation.
Insulation Material	Shall be PC Foamglas Insulation as manufactured by the Pittsburgh Corning Corporation in standard slabs 12" x 18" and shall be . . . inch thick (2", 3", 4" or 5") laid in (one), (two) layer(s). (Indicate total thickness of insulation required where two layers are used.)
Preparation of Roof Decks to Receive Insulation	GENERAL: The surface of all roof decks shall be smooth and level, without depressions. Where wood decks are used, all loose or springy boards shall be properly nailed in place before any insulation is laid. All decks shall be broomed clean, free from dirt, loose material and thoroughly dry. WOOD DECK: Apply sheathing paper, unsaturated felt or (tarred) (asphalt) roofing felt (indicate which type membrane required), which shall be installed according to best roofing practice before insulation is laid. PRECAST CONCRETE OR GYPSUM SLABS OR GYPSUM PLANK DECKS: All joints between (slabs) (planks) shall be properly grouted and struck flush. Membrane (shall) (shall not) be used under insulation. Where membrane is used, it shall be specified as above under "Wood Decks." Where membrane is not specified, the insulation shall be adhered to (slabs) (planks) by spot-mopping in place with hot (asphalt) (pitch). No mopping shall be permitted over joints of (slabs) (planks). Where insulation is spot-mopped in place with hot asphalt, the deck shall be coated first with asphalt primer. No primer is required for spot-mopping if pitch is used. MONOLITHIC CONCRETE OR GYPSUM DECKS: No membrane is required under the insulation. If asphalt is to be used for laying the insulation, the decks shall be coated with asphalt primer. No primer is required if pitch is used. STEEL DECKS: Steel decks shall not be subject to excessive deflection. Deck shall be free from any projections above the level of the steel deck such as bolt heads, etc., and shall be without holes through which the hot bitumen used for the laying of the insulation might drip. Decks shall have shop coat of paint. No membrane required under the insulation. If decks are painted no primer is necessary before applying asphalt.
Application of Insulation	GENERAL: Caution—Foamglas Insulation shall not be nailed in place. Foamglas Insulation will not absorb water; however, in order to prevent improper bond between the roofing materials and the insulation, it is necessary to keep the Foamglas dry before, during and after application. Only as much Foamglas Insulation shall be applied in any one day as can be covered with finished roofing the same day. Insulation shall be laid in parallel courses, staggered to break joints. Where two layers are used, the second layer shall break joints with the first. Where roof decks meet vertical surfaces, such as parapets, etc., the Foamglas shall be cut and fitted snugly. Where Foamglas finishes against cant strips it shall be beveled to a neat fit. APPLICATION OF FOAMGLAS: Where felts impregnated with coal tar pitch are used, Foamglas Insulation shall be laid with coal tar pitch. Where asphalt impregnated felts are used, Foamglas Insulation shall be laid with asphalt. Foamglas Insulation shall be firmly imbedded in hot (asphalt) (pitch) mopped on deck. Mop only area on which insulation can be laid immediately. All insulation shall be laid with tightly butted joints. When more than one layer is used, the additional layers shall be laid in the same manner as the first layer. Protect completed insulation from weather until finished roofing is applied. For application of finished roofing, mop insulation with uniform coat of hot (asphalt) (pitch). Mop only area on which roofing can immediately be laid.
Finished Roofing	The finished roofing shall be of type selected by the architect and shall be laid in accordance with the manufacturer's recommendations. For walk-on roofs a minimum of three plies of 15 lb. Roofing Felt shall be applied over the Foamglas Insulation.

NOTE: Where roof slope exceeds 2" to 1'-0", write us for recommendations.

PITTSBURGH CORNING CORPORATION

When problems of temperature control, or condensation arise in connection with building construction, you will find it well worth-while to investigate PC Foamglas . . . the new insulating material for core wall construction.

It will not shrink, swell, warp or rot. It is verminproof and fireproof. Its insulation properties are permanent.

PC Foamglas may be used as wall insulation in connection with all types of masonry and concrete building construction, with whatever type of tile, block or brick facing you desire.

Blocks of Foamglas will support many times their own weight without danger of cracking or crushing. They cannot settle, pack down, or absorb moisture. In consequence, Foamglas eliminates expensive repairs and replacements often necessitated by deterioration of other insulating materials.

SPECIFICATIONS FOR INSULATING CORE WALLS

The following specifications and details are for use in normal temperature applications, 50° to 120° F. Where temperatures over 120° F. are to be maintained, write us for special application specifications.

INSULATION:

Shall be PC Foamglas Insulation as manufactured by the Pittsburgh Corning Corporation in standard slabs 12″ x 18″ and shall be . . . inches thick (2″, 3″, 4″ or 5″).

MASONRY WORK:

All masonry work for core walls shall be laid plumb, level, straight, true to dimensions, and shall be laid with full mortar joints. Joints on the inside surface of the masonry walls shall be "plain cut." These surfaces shall also be free of any stray mortar. Masonry work and PC Foamglas Insulation shall be erected with the following procedure:—First, lay a lift of the exterior wythe. Second, lay a lift of the Foamglas. Third, lay a lift of the interior wythe. The height of one lift shall be equal to the vertical distance between wall ties.

WALL TIES:

Shall be of non-corrosive metal and shall be . . . type. (Insert wall tie specification here).

One wall tie shall be required for every .... sq. ft. (or, sq. in.) of wall surface.

Wall ties shall be spaced every ..... course (or .... inches apart vertically), and every .... inches apart horizontally.

ASPHALTIC CEMENT:

Shall be of the following mix, measured by volume: 6 parts PC Asphalt Emulsion...1 part Portland cement.

Make a paste of cement and water and then add the asphalt emulsion. Mix thoroughly, increasing the water content sufficiently to make mix workable under trowel. Batch size shall be such that can be used within one hour of mixing. All asphaltic cement not used within this time shall be discarded and no retempering shall be permitted. Asphaltic cement shall not be applied when temperature is below 40° F.

LAYING INSULATION:

PC Foamglas Insulation shall be laid plumb, level and true to dimensions. The insulation shall be laid with asphaltic cement joints. Joints shall finish $\frac{1}{16}$″ to $\frac{1}{8}$″ thick. When laying slabs apply only enough pressure to guarantee good, full joints. To assure tight joints, point joints with asphalt cement after slabs are set. Do not disturb previously placed slabs. Where slabs are disturbed, remove same and reset with fresh asphaltic cement. Where it is necessary to cut or fabricate the Foamglas to fit the spacing of wall ties, openings, etc., all joints including the wall tie joints shall be sealed with asphaltic cement.

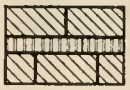
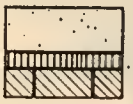
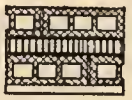
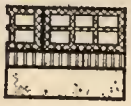
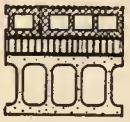
For proper alignment of Foamglas slabs, asphaltic cement gobs shall be used between the interior surface of the outside wythe and the insulation. (See details). The space between exterior wythe and the insulation shall be ¼″ or as may be required for proper alignment of Foamglas. Four gobs per slab shall be required. Apply only enough lateral pressure against the Foamglas to permit absolute contact between gobs and the exterior wythe.

NOTE: Cement and gypsum plasters, or other materials which shrink in setting, cannot be applied directly to Foamglas. Therefore, as recommended in this catalog, tile or masonry veneer shall be used as interior finish over this insulation.

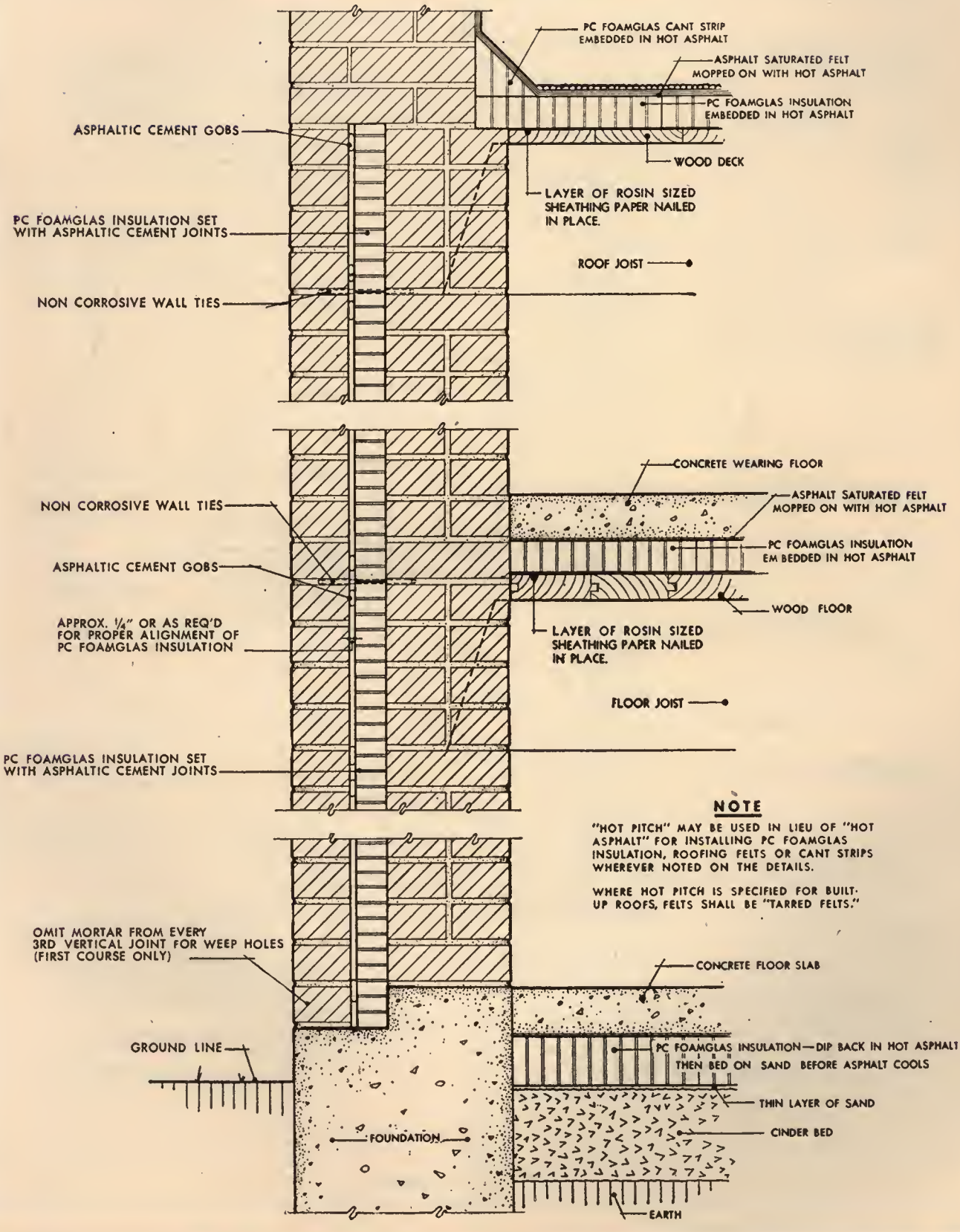
FOAMGLAS INSULATION FOR CORE WALLS

HEAT TRANSMISSION (U) THROUGH VARIOUS TYPES OF CORE WALLS INSULATED WITH FOAMGLAS

(U) VALUES ARE EXPRESSED IN B. T. U. PER. SQ. FT PER DEG. FAHR. TEMP DIFFERENCE PER HOUR. CONDITIONS ASSUMED: MEAN TEMP. 50 DEG. FAHR. STILL AIR INSIDE & 15 M. P H. WIND VELOCITY OUTSIDE.

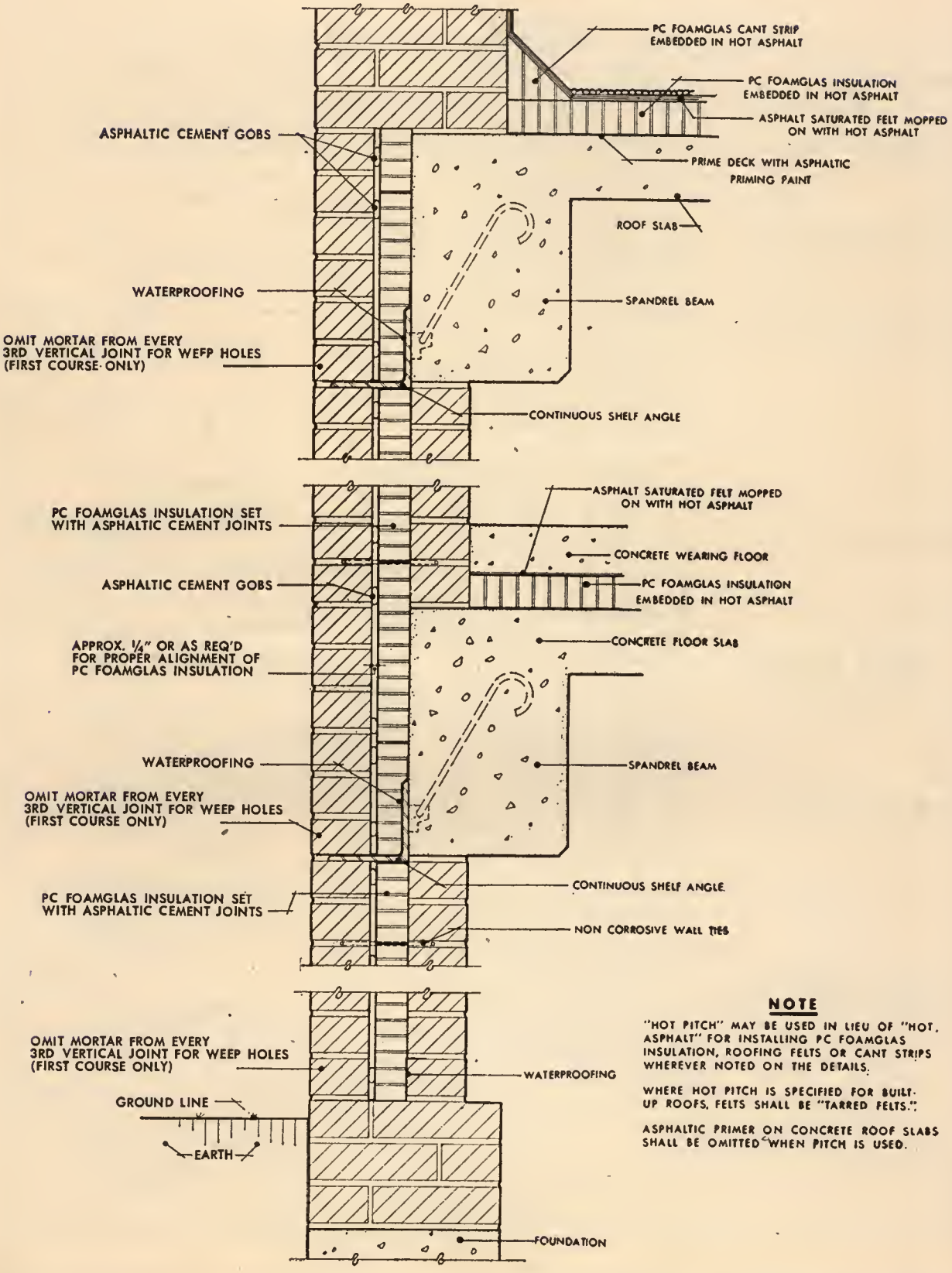
WALL TYPE	CONSTRUCTION	WITH ¾" PLASTER FINISH — INSULATED WITH FOAMGLAS					WITH NO INTERIOR FINISH — INSULATED WITH FOAMGLAS				
		2"	3"	4"	5"	6"	2"	3"	4"	5"	6"
BRICK											
4" FACE BRICK & 4" COMMON BRICK		.14	.10	.082	.068	.058	.14	.11	.083	.069	.059
4" FACE BRICK & 8" COMMON BRICK		.12	.095	.077	.065	.056	.13	.097	.078	.065	.056
4" FACE BRICK & 12"COMMON BRICK		.11	.088	.072	.061	.053	.12	.090	.074	.062	.054
BRICK & CONCRETE											
4" FACE BRICK & 6" CONCRETE		.14	.11	.084	.069	.059	.15	.11	.086	.070	.060
4" FACE BRICK & 10"CONCRETE		.14	.10	.082	.068	.058	.14	.11	.083	.069	.059
4" FACE BRICK & 16"CONCRETE		.13	.10	.079	.066	.056	.13	.10	.080	.067	.057
BRICK & HOLLOW TILE											
4" FACE BRICK & 4" HOLLOW TILE		.13	.10	.080	.068	.057	.14	.10	.082	.068	.058
4" FACE BRICK & 6" HOLLOW TILE		.12	.094	.076	.064	.055	.13	.097	.078	.065	.056
4" FACE BRICK & 8" HOLLOW TILE		.12	.094	.076	.064	.055	.13	.096	.077	.065	.056
4" FACE BRICK & 10"HOLLOW TILE		.12	.094	.076	.064	.055	.13	.096	.077	.065	.056
HOLLOW TILE & STUCCO											
4" HOLLOW TILE, 4" HOLLOW TILE & 1" STUCCO		.12	.094	.076	.064	.055	.13	.097	.078	.065	.056
4" HOLLOW TILE, 6" HOLLOW TILE & 1" STUCCO		.12	.090	.073	.063	.054	.12	.091	.074	.063	.054
4" HOLLOW TILE, 8" HOLLOW TILE & 1" STUCCO		.11	.089	.073	.062	.053	.12	.091	.074	.062	.054
CONCRETE & HOLLOW TILE											
4" CONCRETE & 4" HOLLOW TILE		.14	.10	.081	.067	.058	.14	.10	.083	.068	.058
4" CONCRETE & 6" HOLLOW TILE		.13	.096	.078	.065	.056	.13	.098	.079	.066	.057
4" CONCRETE & 8" HOLLOW TILE		.13	.095	.077	.065	.056	.13	.097	.078	.065	.056
STONE & HOLLOW TILE											
4" STONE & 6" HOLLOW TILE		.13	.096	.078	.065	.056	.13	.098	.079	.066	.057
4" STONE & 8" HOLLOW TILE		.13	.095	.077	.065	.056	.13	.097	.078	.065	.056
4" STONE & 10"HOLLOW TILE		.12	.095	.077	.064	.055	.13	097	.078	.065	.056
4" STONE & 12"HOLLOW TILE		.11	.088	.072	.061	.053	.12	.090	.074	.062	.054
CONCRETE BLOCK & HOLLOW TILE											
8" CONCRETE BLOCKS & 4" HOLLOW TILE		.12	.095	.077	.064	.055	.13	.097	.078	.065	.056
8" CONCRETE BLOCKS & 6" HOLLOW TILE		.12	.090	.074	.062	.054	.12	.092	.075	.063	.054
8" CONCRETE BLOCKS & 8" HOLLOW TILE		.12	.089	.073	.062	.054	.12	.091	.074	.063	.054
BRICK & CINDER BLOCK											
4" FACE BRICK & 8" CINDER BLOCKS		.12	.094	.076	.064	.055	.13	.097	.078	.065	.056
4" FACE BRICK & 12"CINDER BLOCKS		.12	.092	.075	.063	.055	.12	.094	.076	.064	.055
BRICK & CONCRETE BLOCK											
4" FACE BRICK & 8" CONCRETE BLOCKS		.13	.10	.080	.068	.057	.14	.10	.082	.068	.058
4" FACE BRICK &-12"CONCRETE BLOCKS		.13	.098	.079	.066	.057	.13	.10	.080	.067	.057

PC FOAMGLAS INSULATION IN LOAD BEARING TYPE CORE WALL CONSTRUCTION



FOAMGLAS INSULATION FOR CORE WALLS

PC FOAMGLAS INSULATION IN PANEL TYPE CORE WALL CONSTRUCTION



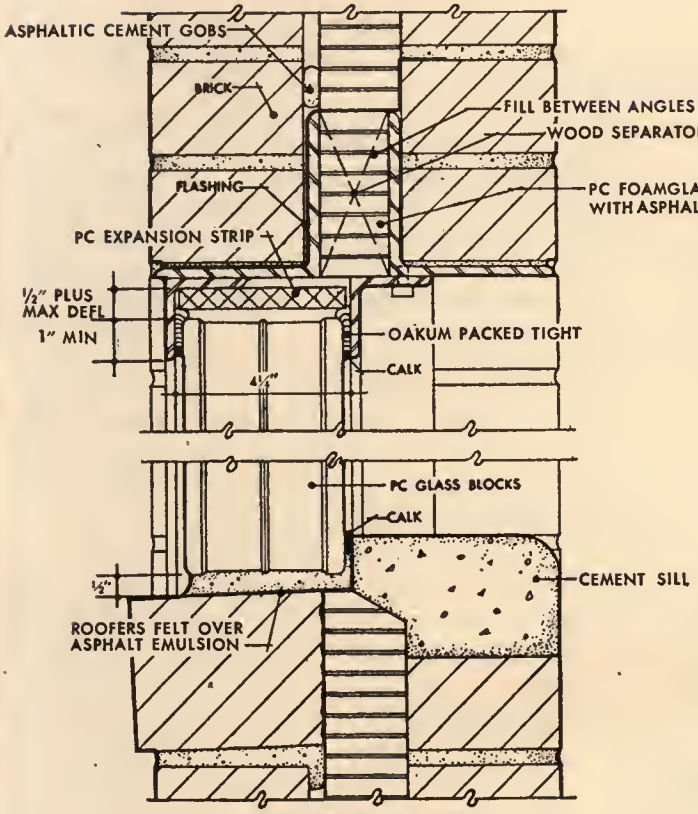
NOTE

"HOT PITCH" MAY BE USED IN LIEU OF "HOT ASPHALT" FOR INSTALLING PC FOAMGLAS INSULATION, ROOFING FELTS OR CANT STRIPS WHEREVER NOTED ON THE DETAILS.

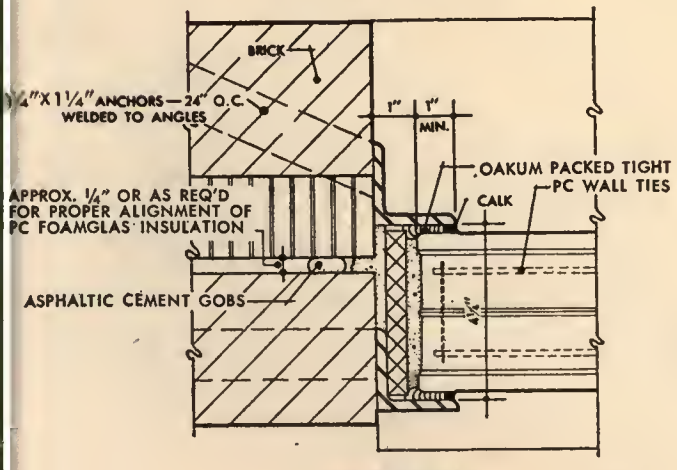
WHERE HOT PITCH IS SPECIFIED FOR BUILT-UP ROOFS, FELTS SHALL BE "TARRED FELTS."

ASPHALTIC PRIMER ON CONCRETE ROOF SLABS SHALL BE OMITTED WHEN PITCH IS USED.

GLASS BLOCK PANELS IN CORE WALL CONSTRUCTION

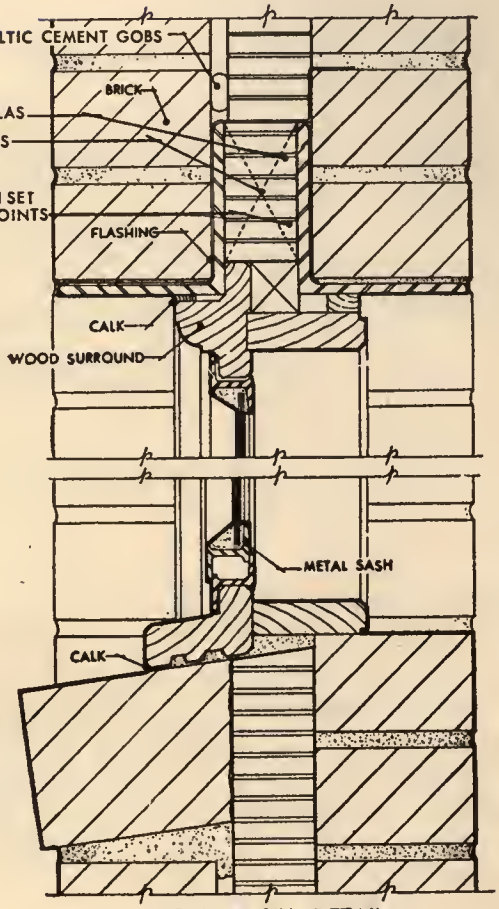


HEAD & SILL DETAIL

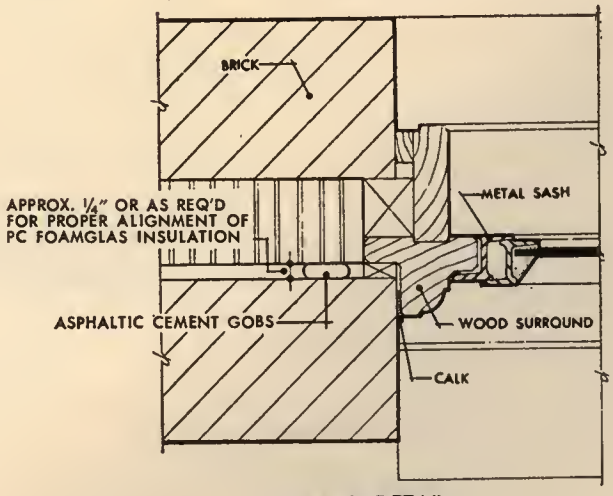


JAMB DETAIL

METAL SASH IN CORE WALL CONSTRUCTION



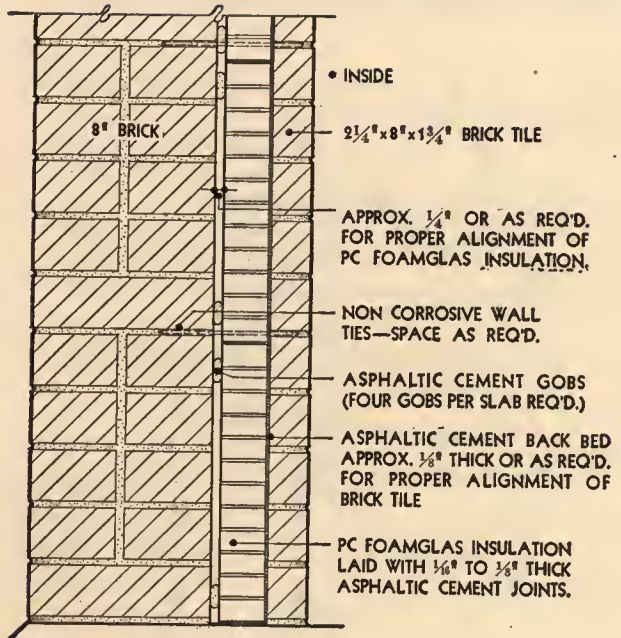
HEAD & SILL DETAIL



JAMB DETAIL

FOAMGLAS INSULATION FOR CORE WALLS

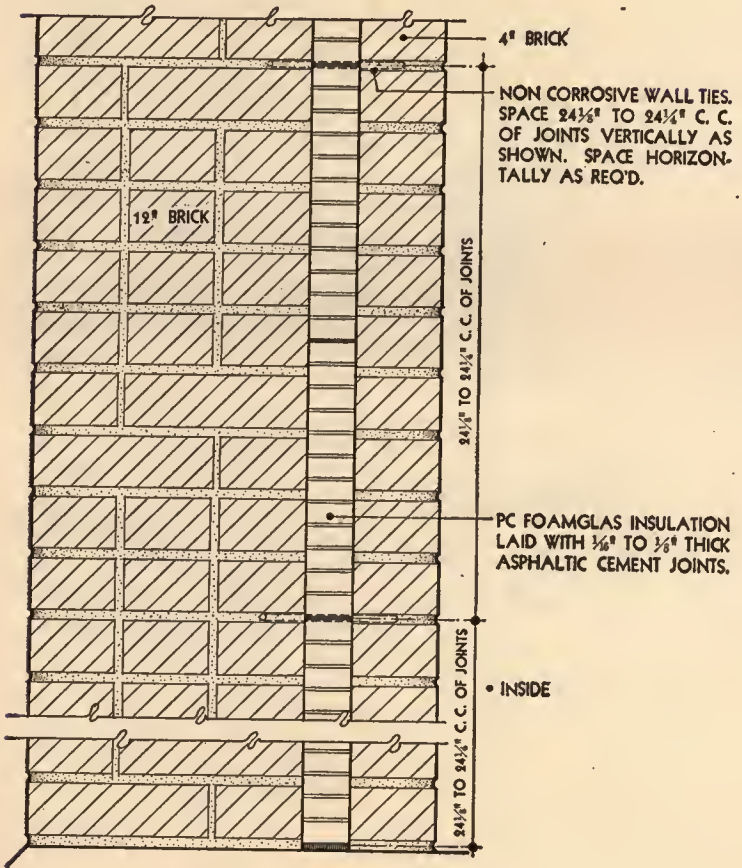
SPECIAL TYPES OF WALL APPLICATIONS



TYPICAL WALL TYPE "A"

• Wall Type "A" varies from other core wall details shown, in that the inner wall is considered a veneer. This veneer wall, having little stability during erection, requires additional bond between it, the Foamglas, and the outer masonry wythe. This additional bond is obtained with the use of asphaltic cement gobs and back bedding as well as wall ties (see detail).

In this type of construction the exterior wall can be erected before the Foamglas and inner veneer are laid, or it may be laid in lifts of approximately 24". The detail is also adaptable for insulating and veneering existing masonry walls. In existing work corrugated wall ties should be used.*



TYPICAL WALL TYPE "B"

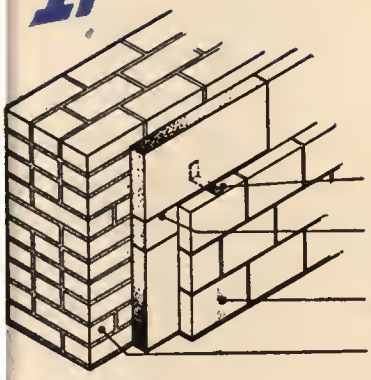
• Wall Type "B" is also different from other core wall details shown. This type of wall incorporates an interior veneer wall with considerable stability. This detail shows no space between Foamglas and masonry walls. This is permissible where the inside surface of the exterior wall can be laid plumb, level and straight, and where the interior wall surface does not necessarily need to be perfectly flush.

For ease of erection, this type wall shall be laid up in lifts of 24⅛" to 24¼" c.c. of joints.*

See "Specifications" on Page 7 for wall ties, laying of masonry, asphaltic cement mix, and other data pertaining to these special types of wall applications.

METHODS OF FITTING WALL TIES

1.



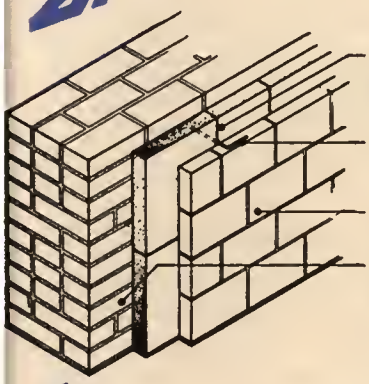
CORRUGATED OR RIBBED TYPE WALL TIES SPACE AS REQUIRED.

CUT PC FOAMGLAS INSULATION SLAB AT WALL TIE LEVEL AS SHOWN AND SET AS TWO INDI VIDUAL UNITS

GLAZED TILE OR OTHER MASONRY VENEER

EXISTING MASONRY WALL OR NEW WALL IN PLACE BEFORE INSULATION & MASONRY VENEER ARE LAID

2.



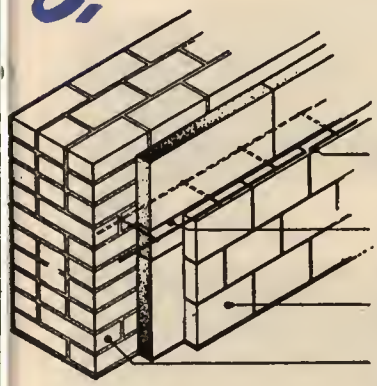
CUT PC FOAMGLAS INSULATION SLAB IN VERTICAL LINE WITH WALL TIE AS SHOWN AND SET AS TWO INDIVIDUAL UNITS

"Z" TYPE WALL TIES. SPACE VERTICALLY IN MATCHED MASONRY MORTAR JOINTS AS SHOWN

GLAZED TILE OR OTHER MASONRY VENEER

MASONRY WALL IN PLACE BEFORE INSULATION & MASONRY VENEER ARE LAID

3.



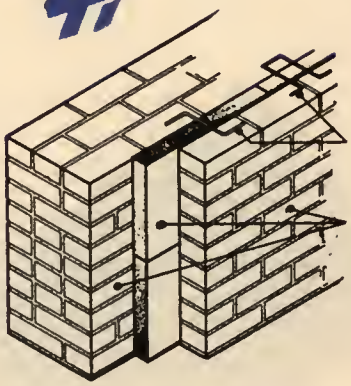
CONTINUOUS WIRE MESH WALL TIES. SPACE VERTICALLY IN MATCHED MASONRY MORTAR JOINTS AS SHOWN.

CUT PC FOAMGLAS INSULATION SLABS AT WALL TIE LEVEL AS SHOWN AND SET AS TWO INDIVIDUAL COURSES

GLAZED TILE OR OTHER MASONRY VENEER

MASONRY WALL IN PLACE BEFORE INSULATION & MASONRY VENEER ARE LAID

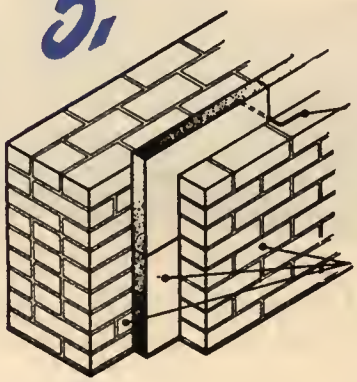
4.



"Z" OR "U" TYPE WALL TIES. SPACE VERTICALLY IN MATCHED MASONRY MORTAR JOINTS AS SHOWN.

RAISE EXTERIOR BRICK WALL, PC FOAMGLAS INSULATION AND INTERIOR BRICK WALL IN LIFTS OF 24⅛" TO 24¼" C. C. OF JOINTS

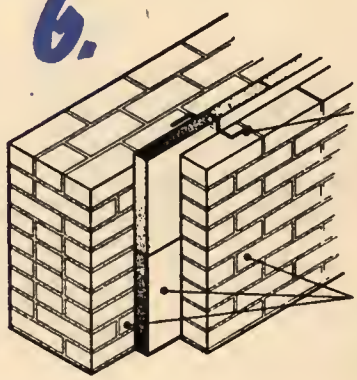
5.



"Z" TYPE WALL TIES. SPACE WALL TIES 36⅛" TO 36¼" C. C. HORIZONTALLY SO THAT THEY WILL OCCUR IN ALTERNATE VERTICAL JOINTS OF PC FOAMGLAS INSULATION SLABS. SPACE VERTICALLY IN MATCHED MASONRY MORTAR JOINTS AS SHOWN.

EXTERIOR & INTERIOR MASONRY WALL SHALL BE LAID IN LIFTS OF AS NEAR 24⅛" TO 24¼" C. C. OF JOINTS AS IS PRACTICABLE.

6.



"Z" TYPE WALL TIES NEAR TOP OR BOTTOM OF PC FOAMGLAS INSULATION SLAB MAY BE SET IN GROOVE AS SHOWN AND SEALED WITH SAME MATERIAL USED FOR FOAMGLAS JOINTS. GROOVE DEPTH SHOULD NOT EXCEED 1¼" SPACE WALL TIES VERTICALLY IN MATCHED MASONRY MORTAR JOINTS AS SHOWN.

EXTERIOR MASONRY WALL, PC FOAMGLAS INSULATION AND INTERIOR MASONRY WALL SHALL BE LAID IN LIFTS OF APPROXIMATELY 2 FEET

GENERAL NOTES

• Specifications for wall ties and spacing of same vary with building locale and local building code requirements.

• PC Foamglass Insulation readily adapts itself to these varying conditions because it is easy to cut and shape. It can be cut with a cheap saw, a roofer's knife or a mason's trowel.

• These details show several methods of fitting Foamglas slabs to various types of wall ties and wall tie spacing. Any one or a combination of these methods can be used.

• Building codes, in general, require one wall tie for a given area of wall surface. In order to avoid confliction with the individual building code requirements, the actual dimensions for wall tie spacing have been omitted from the details wherever possible.

• All joints created in fitting the insulation around wall ties shall be filled with the same material used in the joints of the whole Foamglass slabs.

FOAMGLAS INSULATION FOR FLOORS

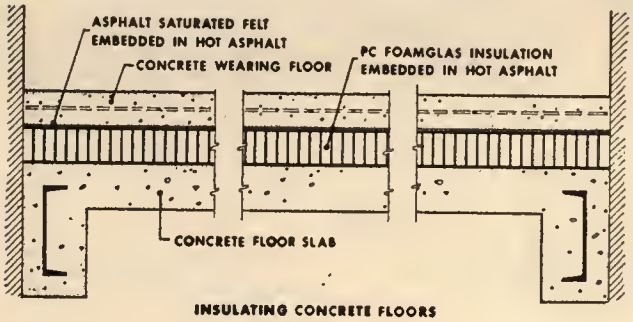
This hand truck, carrying the 400 lb. barrel, was dropped 100 times on the concrete cover floor without any damage to the Foamglas Insulation.

• This new, trouble-free insulation for floors is light, strong, economical. It is impervious to deteriorating elements that attack other insulating materials, maintains its insulating efficiency indefinitely.

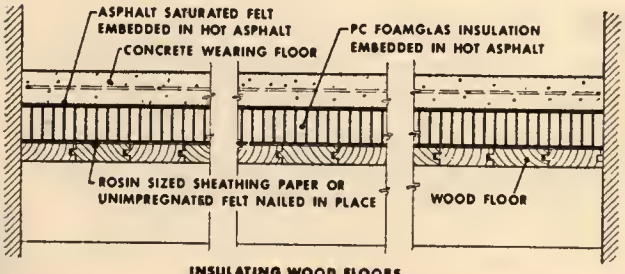
This cellular floor insulating material—PC Foamglas—should enjoy general acceptance among plant managers because of its permanent insulating efficiency and its ability to carry weights much heavier than normal floor loads.

TYPICAL INSTALLATIONS

• This is how PC Foamglas should be applied to insulate two kinds of floors which are widely used in industrial buildings. Recommendations for installing Foamglas for floors on ground are available upon request.



INSULATING CONCRETE FLOORS



INSULATING WOOD FLOORS

PITTSBURGH CORNING CORPORATION

SPECIFICATIONS FOR INSULATING FLOORS

The following specifications and details are for use in normal temperature applications, 50° to 120° F. Where temperatures over 120° F. are to be maintained, write us for special application specifications.

INSULATION:

Shall be PC Foamglas Insulation as manufactured by the Pittsburgh Corning Corporation in standard slabs 12″ x 18″ and shall be .... inches thick (2″, 3″, 4″ or 5″) laid in (one) (two) layer(s). (Indicate total thickness required where two layers are used.)

PREPARATION OF FLOORS:

WOOD FLOORS: The surface of all wood floors to be insulated shall be reasonably smooth and level, without depressions. All loose or springy boards shall be properly nailed in place. Floors shall be broomed clean, free from dirt, loose material, and thoroughly dry before proceeding. Over all wood floors to be insulated apply a layer of rosin-sized sheathing paper or unsaturated felt, lapping the edges at least 3″ and nailing along the edges to hold in place until the insulation is laid.

CONCRETE FLOORS: All new concrete floor slabs to be insulated shall be thoroughly cured. All floors shall be reasonably smooth and level, without depressions, and shall be broomed clean and free of grease or dirt.

LAYING INSULATION:

GENERAL: PC Foamglas Insulation shall be laid in parallel courses, staggered to break joints. Where two layers are used, the second layer shall break joints with the first. All insulation shall be laid with tightly butted joints.

OVER WOOD & CONCRETE FLOORS: All PC Foamglas Insulation over wood and concrete floors shall be firmly embedded in hot asphalt and shall be laid progressively as the hot asphalt is mopped on the floor. Avoid mopping large areas that cannot be covered with insulation before the hot asphalt cools. When more than one layer is used, the additional layers shall be laid in the same manner as the first.

LAYING ASPHALT SATURATED FELTS:

After PC Foamglas is laid, mop on a layer of 15-pound asphalt saturated felt with hot asphalt. When mopping the insulation and before the felt is laid, the hot asphalt shall be slushed into and fill all joints.

WEARING FLOOR:

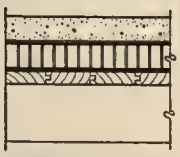
Install a reinforced monolithic concrete floor .... inches thick (3″ minimum) over the insulation.

The concrete shall be mixed to the following proportions by volume: 1 part Portland cement—2 parts clean, sharp sand—3 parts gravel.

Reinforce the concrete slabs with .... inch bars .... inch O.C., each way (or No. .... gauge welded wire mesh .... inch O.C., each way).

HEAT TRANSMISSION "U" THROUGH VARIOUS TYPES OF FLOORS

(U) VALUES ARE EXPRESSED IN B. T. U. PER SQ. FT. PER DEG. FAHR. TEMP. DIFFERENCE PER HOUR. CONDITIONS ASSUMED: MEAN TEMP. 50 DEG. FAHR. STILL AIR CONDITIONS BOTH SIDES.

FLOOR TYPE	CONSTRUCTION	IDENTITY	UNINSULATED (WEARING FLOOR NOT INCLUDED)	INSULATED WITH FOAMGLAS (WEARING FLOOR INCLUDED) 2″	3″	4″	5″	6″
FLOORS ABOVE GROUND WITH 3″ CONCRETE WEARING FLOOR								
CONCRETE								
3″ CONCRETE		A	.68	.15	.11	.085	.070	.060
4″ CONCRETE		B	.65	.15	.11	.085	.070	.060
5″ CONCRETE		C	.62	.15	.11	.084	.070	.059
6″ CONCRETE		D	.59	.14	.11	.084	.069	.059
7″ CONCRETE		E	.56	.14	.105	.083	.069	.059
8″ CONCRETE		F	.54	.14	.104	.083	.068	.058
WOOD								
1½″ WOOD		G	.35	.12	.094	.076	.064	.055
2″ WOOD		H	.31	.12	.091	.074	.063	.054
3″ WOOD		J	.22	.103	.082	.068	.058	.051

NOTE: Nominal thicknesses of wood floors are shown. Actual thicknesses have been used to determine "U" value.

Calculations for wood floors are based on yellow pine or fir.

PC FOAMGLAS... *the permanent insulation*

Avoid Costly Replacements

First cost is last cost when you insulate with PC Foamglas. Being waterproof, fireproof and verminproof, PC Foamglas automatically solves the three main problems encountered in insulating jobs. For a material that becomes wet and soggy, one that burns readily, or one that provides food and nesting room for rodents and destructive insects cannot do a satisfactory job over the years. So, when you consider insulation costs on a long-term basis, you will find that the *permanent* insulation, PC Foamglas will cost you the least money per annum.

Special Insulation Problems

Your building, like many others, may present unusual insulating problems. Our insulation engineers will be glad to consult with you, to find out just how and where you can use Foamglas to the best advantage. Additional engineering data, specifications and details for installing PC Foamglas for customary uses on roofs, in corewalls and floors will be furnished upon request.

When you insulate with FOAMGLAS . . . you insulate for good!

Weight is often an important factor when large areas of roofs and ceilings in existing buildings need insulation. No structural reinforcements are needed to carry the additional load when PC Foamglas is installed.

Big rigid blocks of PC Foamglas support their own weight in all types of corewall construction. They stay in place, do not swell, shrink or pack down. Wall ties can be run from backing to facing, right through the insulating material, as PC Foamglas is easily pierced by a trowel.

The crushing strength of PC Foamglas enables it to carry floor loads much heavier than normal. Installed under a concrete floor to reduce heat travel out of a building or between stories, PC Foamglas has withstood the most rigid tests for impact, has supported dead-weight loads up to 2600 lbs. per square foot, without any damage to the material.

PITTSBURGH CORNING CORPORATION
632 Duquesne Way · Pittsburgh 22, Pa.
PRINTED IN U.S.A.
G 8670- 6-48

10c
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OWENS-CORNING

FIBERGLAS

TM REG US PAT OFF

Insulations

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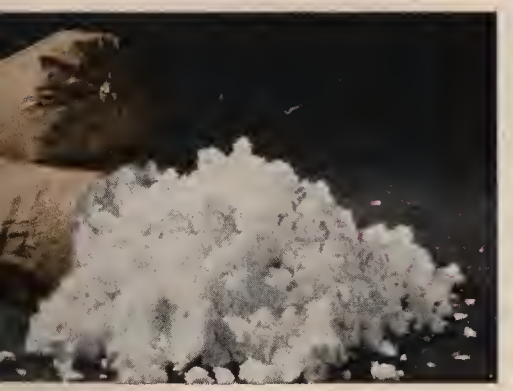
OWENS-CORNING

FIBERGLAS

TM REG US PAT OFF

Insulating Wool TYPE TW-F

For Temperatures to 1000°F.



DESCRIPTION

FIBERGLAS* Insulating Wool, Type TW-F is composed of long, fine fibers of glass formed into a white, light-weight resilient mass in which countless air spaces are entrapped to afford high insulating efficiency in the temperature range from sub-zero to 1000°F. "k" =.27 Btu at 75°F. mean temperature, based on its nominal density of 3 pounds per cu. ft. *(See below)*

PHYSICAL PROPERTIES

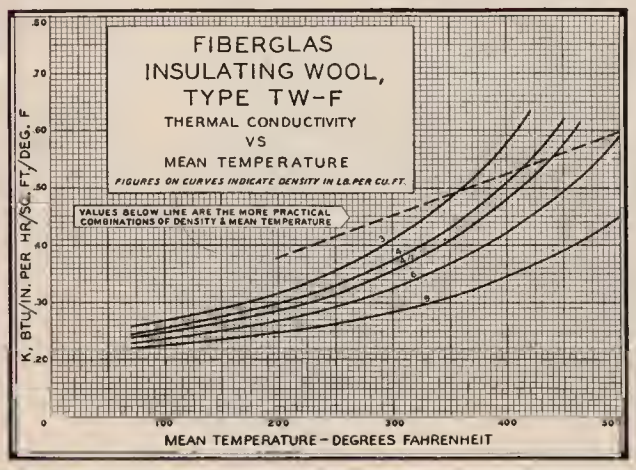
Since these fibers of glass are many times longer than those in other types of mineral wool, Fiberglas Insulation, Type TW-F does not "dust" or disintegrate—tends to expand rather than settle under vibration, making it practical for use at densities that are extremely low. Inorganic (except for small percentage of lubricant); noncombustible; has negligible moisture pick up; will not rot; is noncorrosive to metals in presence of moisture; chemically stable, will withstand repeated wetting, drying and changes in temperature; odorless and, because glass is noncellular, does not absorb odors; provides no sustenance for rodents, insects or other vermin.

FORMS AND USES

Fiberglas Insulating Wool, Type TW-F is produced in the form of blankets having a nominal density of 3 pounds per cu. ft., in thicknesses ranging from ¾" to 3"—cut into BATTS 24" wide and up to 8 feet in length and ROLLS of same width up to 20 feet in length . . . Batts and rolls used to insulate ranges, hotwater heaters, roasters, industrial ovens, processing vats and equipment, trailers, trucks and other rolling stock—in which the insulation is confined between surfaces and need not be self-supporting . . . Also available in BULK and SHREDDED form for use in stuffing, packing and filling irregular-shaped voids, hard-to-reach spaces, joints, etc.

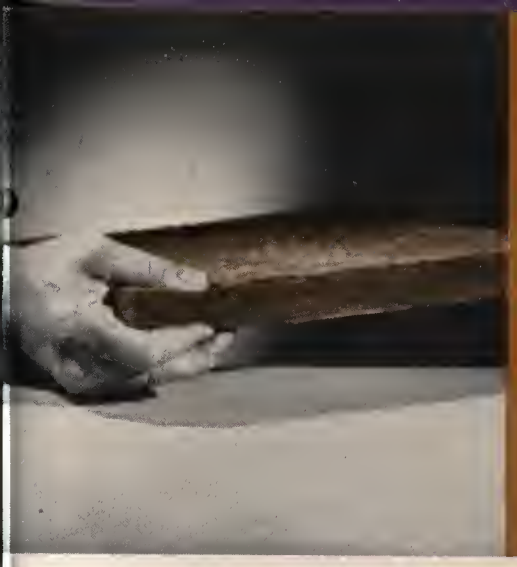
Fiberglas Insulating Wool is fabricated into blankets for thermal and acoustical insulating purposes. (An excellent sound-absorbing material, having a noise reduction factor of from .75 to .95 when suitably installed.) Stitched between facings of Sisalkraft or kraft paper, flameproofed muslin, or cloth woven of Fiberglas Yarn—blankets are made for specific uses in widely diversified fields. Complete information is available.

*FIBERGLAS is the trademark (Reg. U.S. Pat. Off.) for a variety of products made of or with glass fibers by Owens-Corning Fiberglas Corporation.



Extremely Low Thermal Conductivity

This condensed chart shows conductivity ("k") expressed in Btu/sq. ft./hr/inch thickness/°F. temperature difference for various installed densities and mean temperatures. Available are "Selection Charts" that permit the engineer quickly to determine heat losses, thermal efficiencies and cold-surface temperatures for various *thicknesses* and installed densities of Fiberglas Insulating Wool Type TW-F, at hot-surface temperaturcs from 250° F. to 1000°F.



OWENS-CORNING

FIBERGLAS

TM REG US PAT OFF

PF (Preformed) INSULATIONS

For Temperatures to 600°F.

BASIC FORMS—Fiberglas PF Insulation is made in eight standard densities, from 2 to 10.5 pounds per cu. ft., and in a wide variety of thicknesses ranging from ¾" to 4" depending upon the density. Cut to standard (24" x 48") or special sizes.

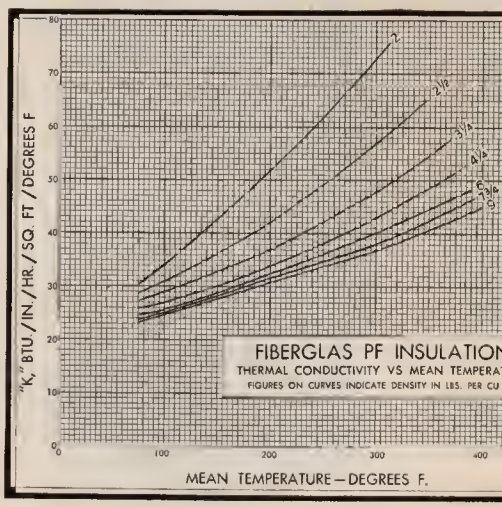
DESCRIPTION

Consists of Fiberglas Insulating Wool, Type TW-F (see opposite page), to which is added a small percentage of thermosetting resin. The insulation is compressed as the resin is cured to form basic materials of predetermined thicknesses, densities and degrees of flexibility and rigidity. Fiberglas PF Insulations have all the thermal and acoustical insulating properties of Type TW-F except that the resin, which is organic, limits uses to temperatures not to exceed 600°F.

FORMS AND USES

Fiberglas PF Insulations are available in the form of batts or boards in various densities and thicknesses that permit the engineer to select the material having the proper degree of flexibility or rigidity for a specific application. Easily notched, grooved, beveled, or cut into intricate forms and shapes . . . Used in domestic, commercial and industrial low-temperature equipment and appliances; cold storage plants and other buildings; as filler for sandwich-type panels; ship-building, etc.

These basic forms of Fiberglas PF Insulations are further processed or fabricated into materials, described on the following pages.



THERMAL CONDUCTIVITY—The above chart shows conductivity ("k") expressed in Btu/sq. ft./hr/inch thickness/° F. temperature difference for various standard densities and mean temperatures.

METAL MESH BLANKETS

To facilitate application and provide a surface for cement or mastic finishes Fiberglas Insulating Wool, Type TW-F (to 1000°F.) and Fiberglas PF Insulation (to 600°F.) are available in blankets 24" x 48" and 24" x 96"—faced on one or both sides with hexagonal wire mesh or laths of expanded metal, rib or hi-rib . . . The advantages of Fiberglas Type TW-F Wool and PF Insulation are strikingly significant in this application because it *permits the fabrication of insulating blankets with metal facing on one side*, affording a free, resilient surface to conform to any irregularities, such as laps, bolts, and rivet heads, on the insulated surface . . . For insulating boilers, cylinders, ovens, large ducts and breechings, railway tank cars, refinery and other processing equipment.

Insulating Blocks, Insulating and Finishing Cements, O-C Mastic

Supplement the line of Fiberglas Insulations and materials used in application. (Complete data available).

PF (Preformed) PIPE COVERING

DESCRIPTION—Made of Fiberglas Insulating Wool, Type TW-F, lightly coated with resin, compressed and cured in molds to form hemi-cylinders and segments 3 ft. in length, Standard and Double-Standard thick. For insulating pipes in all standard sizes up to 30" inclusive, temperatures not to exceed 600°F. Available either with canvas jacket (for normal application) or heavy roofing-felt jacket (for out-of-door application or where insulation may be subjected to occasional wetting).

OWENS-CORNING

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Building Insulation

Nailing flanges ease application of Fiberglas Roll and Batt Blankets to walls and ceilings. Self-contained vapor barriers are an important feature, eliminate one operation.

Because Fiberglas does not pack down, blowing wool gives greater coverage per inch of thickness. (Right) Cornices and eaves easily blocked off with Utility Batts.

A SUPERIOR THERMAL INSULATING MATERIAL FOR APPLICATION IN ALL TYPES OF BUILDINGS

DESCRIPTION

The basic material from which the several forms of Fiberglas Building Insulation are made is composed of a mass of long, fine fibers of glass, lightly bonded together with a thermo-setting resin to form a light-weight, resilient blanket in which countless air spaces are entrapped, affording high insulating value . . . For all practical purposes, this basic material is both inorganic and noncombustible (the small percentage of binder will not support combustion); will not rot or corrode; has negligible moisture pick-up; is odorless and does not absorb odors; provides no food for rodents, insects or other vermin . . . Conforms to Federal Specification HH-I-521c—"Insulation, Batt or Strip Form and Loose-Fill"

FORMS

ROLL and BATT BLANKETS — Low-density Fiberglas PF Insulation with an asphalted vapor-resistant paper on one side and a perforated, vapor-permeable paper on the other. The two papers are folded together at the sides of the blanket to form a flange for nailing to frame members. Two widths—for 16″ and 24″ on centers. Three thicknesses—Inch (nominally 1″); Medium (nominally 2″); Thick (nominally 3″). Roll lengths from 20′ to 80′, depending upon widths and thicknesses. Batt sizes—15″ x 24″ and 15″ x 48″ (with nailing flanges for 16″ on centers.)

UTILITY BATTS—Made of Fiberglas PF Insulation, 4″ thick. Have no paper cover or backing. (Vapor barrier paper should be placed on warm side prior to installation of batts).

POURING WOOL—Fiberglas PF Insulation, processed into small pellets for pouring from bag or hand packing.

BLOWING WOOL—Fiberglas PF Insulation, shredded into proper size and form for pneumatic installation with any standard mineral wool blowing machine equipped with a picker.

AVAILABILITY

Fiberglas Building Insulation in the form of *Roll and Batt Blankets*, *Utility Batts and Pouring Wool* is available locally through lumber and building supply dealers who are served by any of the following distributors: Armstrong Cork Company, Lancaster, Pa.; Certain-teed Products Corporation, Chicago, Ill.; The Flintkote Company, New York City; Kelley Island Lime & Transport Company, Cleveland, Ohio.

Fiberglas Blowing Wool is available in many localities through authorized Fiberglas Applicator-Contractors, experts in this particular branch of insulating residential and light commercial buildings.

NOTE: Complete details are given in a booklet—"Fiberglas Building Insulation in Residential Construction" (20 pages).

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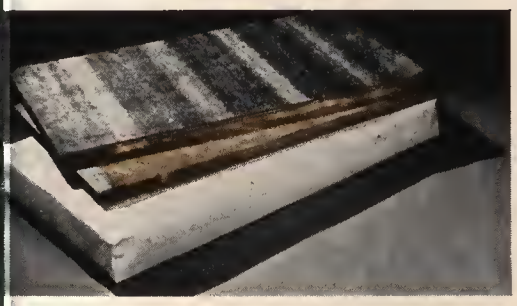
TM REG US PAT OFF

Roof Insulation

. . . made with an inorganic core of FIBERGLAS rigid PF *(Preformed)* Insulating Board

THE LIGHT-WEIGHT ROOF INSULATION FOR EFFICIENCY, ECONOMY, LASTING SATISFACTION



Fiberglas Roof Insulation is made in one standard size—24″ x 48″—and in thicknesses of 9/16″, 13/16″, 1″, 1½″ and 2″. Packaged in paper bundles weighing from approximately 48 lbs. to 54 lbs. each, according to thickness of material.

DESCRIPTION

Rigid Fiberglas PF Insulating Board with mopping surface provided by strong kraft paper adhered with asphalt to top surface and around and under both ends. This permits the use of either asphalt or pitch in the built-up roofing, and supplements the bond strength between the roofing and the deck.

CHARACTERISTICS

The table (right) points out two distinct advantages of Fiberglas Roof Insulation—its high insulating efficiency per inch of thickness, that permits use of minimum thickness for desired results; its comparative light weight, that permits easy handling during application—and imposes no significant dead load on the roof structure.

The insulating core will not rot or decay, and moisture does not materially affect it because the fibers are inorganic.

Fiberglas Roof Insulation has ample compressive strength and tough surface to withstand normal handling and traffic during installation, inspection and maintenance.

Fiberglas Roof Insulation is installed by standard methods for board-type or block-type materials.

NOTE: Complete data and Specifications are available on this subject for A.I.A. File No. 37.

FIBERGLAS ROOF INSULATION		
THICKNESS Inches	HEAT CONDUCTANCE at 75°F Mean Temp. (Btu/hr/sq. ft./°F)	WEIGHT Lbs. per Square Foot
9/16	.55	.93
13/16	.33	1.15
1	.27	1.31
1½	.19	1.75
2	.13	2.19
All values subject to normal manufacturing tolerances.		

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INSULATIONS FOR *Low-Temperature* STRUCTURES

PF *(Preformed)* INSULATION

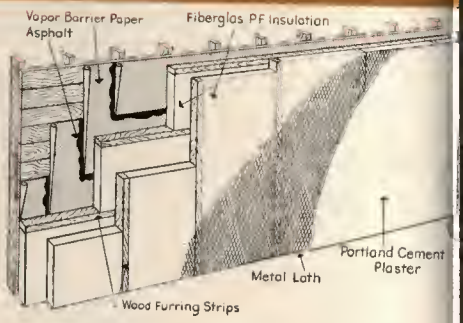
Complete Design Data and Short Application Specifications are available in literature for your A.I.A. File No. 37.

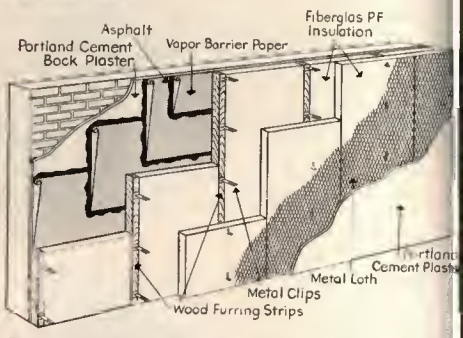
DESCRIPTION

Fiberglas PF (Preformed) Insulation consists of Fiberglas Wool, Type TW-F, to which is added a small percentage of thermosetting resin. The insulation is compressed as the resin is cured to form insulations of predetermined thicknesses, densities and degrees of flexibility and rigidity. Of the ten densities of Fiberglas PF Insulations, the 3¼-lb. density generally is used in low-temperature structures, since it has been found to offer optimum handling qualities and economy in this type of application. A semi-rigid and non-loadbearing material, it is installed between structural supports.

Standard production size of the material is 24″ x 48″—in thicknesses of 2″, 3″ and 4″. While design can generally utilize the pieces at full size, a certain amount of cutting to fit is necessary. Here time is saved, for Fiberglas PF Insulation is easily cut with a knife or hand saw.

Of particular importance is the elimination of heat loss through joints, since the fibers tend to knit themselves together giving the joint insulating efficiency equal to that of the body of the material. Methods for insulating low-temperature structures with Fiberglas PF Insulation conform to those published in Commercial Standards CS105-43.





Showing methods of applying Fiberglas AE Board on wood and masonry walls. Other drawings and informative data are presented in a 32-page manual on this subject.

AE BOARD *(Asphalt-Enclosed)*

Complete Design Data and Short Application Specifications are available in literature for your A.I.A. File No. 37.

DESCRIPTION

Fiberglas AE Board consists of a core of Fiberglas PF Insulation completely enclosed with a tough, durable, asphalt covering to form a rigid, self-supporting and semi-loadbearing material installed by the asphalt-dip method.

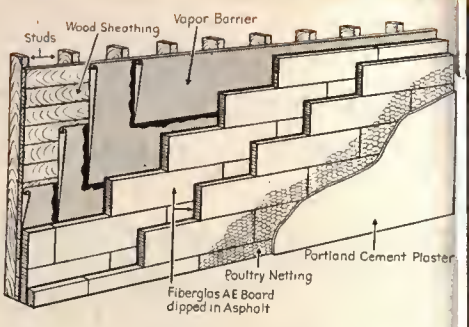
Fiberglas AE Board is made in one standard size, 12″ x 36″, and two types:

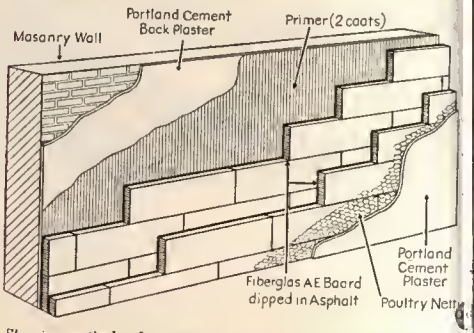
AE-9 Board—In which the core consists of Fiberglas PF Insulation having a density of approximately 9 lbs. per cu. ft. Used for floors and for self-supporting partitions up to 14 feet high. Made in thicknesses of 1″, 1½″ and 2″.

AE-6 Board—In which the core consists of Fiberglas PF Insulation having a density of approximately 6 lbs. per cu. ft. Because of its lesser rigidity and loadbearing capacity, AE-6 Board is recommended for insulating ceilings and may be used without structural support for partitions up to 9 feet high. Made in thicknesses of 1″, 1½″, 2″ and 3″.

Fiberglas AE Board may be cut with a knife, a hand saw (wetted in kerosene), or a power saw—the cut edges, exposing the PF Insulation, sealed with hot asphalt before installing.

Methods of installing Fiberglas AE-Board are those used in the application of block-type insulation in low-temperature structures.





Showing methods of applying Fiberglas PF Insulation on wood and masonry walls. Only two among the many drawings, tables and application photographs in a 32-page manual on this subject.

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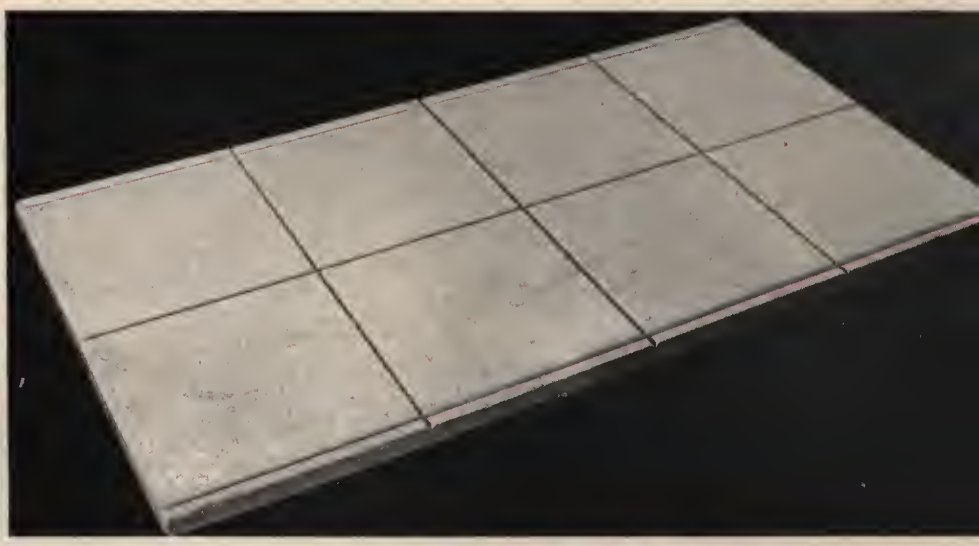
Acoustical Insulations

TILE and BOARD



IBERGLAS
Acoustical Tile

ESCRIPTION

erglas Acoustical Tile is made of rigid Fiberglas Insulation processed to a felted fiber surface, veled on all edges and painted white . . . The is exceptionally light in weight and provides a safe ceiling of high acoustical value. Fiberglas oustical Tile is available in standard tile sizes, thicknesses of ¾" and 1". May be applied by y of a number of methods that are standard ictice in the industry.

FIBERGLAS
Acoustical Board

DESCRIPTION

Fiberglas Acoustical Board is a large-sized acoustical unit, 1" thick, made of rigid Fiberglas PF Insulation, processed to a felted fiber surface, beveled and/or cross-scored in various standard dimensions to give the appearance of individual tile, with or without selvedge on each long side, painted white. For use with recessed-type fluorescent light troffers, its lightweight eases installation and removal for cleaning and repainting.

SOUND ABSORPTION COEFFICIENTS (Acoustical Materials Ass'n Data)

Thickness	Mounting[1]	Cycles 128	256	512	1024	2048	4096	Noise Red. Coefficient	Test No.
¾"	1	.12	.32	.75	.83	.70	.63	.65	A48-2
¾"	2	.08	.44	.79	.83	.74	.65	.70	A48-1
¾"	9	.47	.65	.75	.84	.83	.81	.75	A48-7
1"	1	.11	.31	.79	.94	.84	.79	.70	A48-4
1"	2	.17	.40	.83	.96	.85	.83	.75	A48-3
1"	9	.51	.52	.75	.87	.89	.91	.75	A48-5

[1]Mounting: #1—Cemented to a solid backing.
#2—Nailed to 1" x 2" wood furring 12" o.c
#9—Mechanically mounted to metal furring strips 24" o c 10½" from boundary surface of Sound Chamber

Incombustible and Light in Weight

Firesafe—Rated "incombustible" under Federal Specification SS-A-118.

Light Weight—*The lightest weight, incombustible, rigid acoustical material, a square foot 1" thick weighing less than 1 pound.*

Reaction to Moisture—Exposed to 95% relative humidity at 120°F. for 96 hours—absorbed less than 1% by weight—showed no warping or change of linear dimensions.

Light Reflectivity—Minimum light reflection coefficient of .70.

Rigidity—Material 1" thick will span 24 inches without sag and without cross support when mechanically installed.

Thermal Insulating Property—Being made of a highly efficient thermal insulating material, Fiberglas Acoustical Tile and Board contribute this desirable feature at no additional cost.

Fiberglas Acoustical Materials are installed by authorized applicators carefully selected for their experience and reputation for high quality of workmanship in this specialized field.

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Superfine INSULATIONS

FIBERGLAS IN ITS FINEST AND LIGHTEST FORM —for thermal and acoustical insulating applications

Series PF-310

DESCRIPTION

An extremely lightweight, resilient, thermal and acoustical insulation consisting of fine Fiberglas fibers averaging .00011″ diameter, lightly bonded with a thermosetting resin. Produced in the form of soft, downy blankets, 54″ wide and ½″ and 1″ thick, in two densities: (1) Type PF-314, weighing .5 lbs. per cu. ft. and (2) Type PF-316, weighing 1.0 lbs. per cu. ft. . . . Standard roll lengths: 50′ for ½″ thickness and 25′ for 1″ thickness . . . Complete data available, giving "k" values at mean temperatures ranging from 50°F. to 300°F.

END USES—The high insulating efficiency per inch of thickness, and its compressibility and resiliency, make this material exceptionally adaptable in applications where space-saving is important—refrigerators, freezers, coolers, air-conditioning units and similar equipment. It is finding wide utility in the automotive field for thermal insulating purposes and sound deadening.

Series PF-320

DESCRIPTION

An extremely lightweight, resilient material made of Fiberglas fibers averaging .00011″ dia. lightly bonded with a thermosetting resin and treated with a water-repellent silicone. Produced in the form of soft, downy blankets, 54″ wide and 1″ thick, in two densities: (1) Type PF-323, weighing .3 lbs. per cu. ft.; (2) Type PF-324, weighing .5 lbs. per cu. ft. Standard rolls contain 25′ of material . . . Complete data available giving "k" values at mean temperatures from 50°F. to 250°F.

END USES—The silicone treatment makes Fiberglas Series PF-320 particularly adaptable to applications in which moisture is encountered. Proved in use as a resilient, non-allergenic, dust-free filler for mattresses, comforters and pillows; as clothing thermal innerliner; as insulation for ice-cube buckets, carrying bags for frozen or hot foods and beverages.

Series PF-100

TYPE PF-105

DESCRIPTION

An extremely lightweight, noncombustible, resilient, thermal and acoustical insulation consisting of Fiberglas fibers in their finest form—averaging .00005″ in diameter—very lightly bonded with a thermosetting resin. Produced in the form of soft, downy blankets, ½″ thick, 48″ and 54″ wide, weighing .6 lbs. per cu. ft. Packaged in rolls of 50 lineal feet . . . Sound transmission tests made on all types of Fiberglas Superfine materials fabricated into aircraft blankets, indicate that Type PF-105 Insulation is the equivalent in efficiency to three to four thicknesses of the Series 300 materials described above.

END USES—Military and commercial aircraft. Type PF-105 meets Army-Navy Specifications An-S-32 requirements for flame-resistance and pick-up of water vapor from the air (moisture absorption less than 1% by weight).

FOR MORE INFORMATION ABOUT EACH TYPE AND FORM OF FIBERGLAS

These few pages serve more as a brief introduction to all Fiberglas Insulations rather than as an exhaustive catalog of each material. For complete technical data, information regarding applications other than those mentioned, prices, availability and sources of supply—communicate with any of the Fiberglas Offices listed below.

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OWENS-CORNING FIBERGLAS CORPORATION

General Offices: **TOLEDO 1, OHIO**

Branch Offices: ATLANTA · BALTIMORE · BOSTON · BUFFALO · CHICAGO · CINCINNATI · CLEVELAND · COLUMBUS, O. DALLAS · DENVER · DETROIT · HOUSTON · KANSAS CITY · LOS ANGELES · MILWAUKEE · MINNEAPOLIS NEW YORK · PHILADELPHIA · PITTSBURGH · PORTLAND · RICHMOND · ST. LOUIS SAN FRANCISCO · SEATTLE · TOLEDO · TULSA · WASHINGTON, D.C.

In Canada: Fiberglas Canada Ltd., Toronto, Ontario.

Form No. G48-6

Printed in U.S.A.

RIC-WIL

INSULATED PIPE CONDUIT SYSTEMS

FOR

UNDERGROUND AND

OVERHEAD

STEAM, HOT WATER, OIL, OR REFRIGERATION LINES

RIC-WIL Insulated Pipe Units (Prefabricated) . . . . . Page 2

Tile, Super-Tile, & Cast Iron Conduit Systems . . . . . Page 3

Foilclad Insulated Pipe Units (Prefabricated) . . . . . Page 4

INSULATED PIPE UNIT
Single Pipe

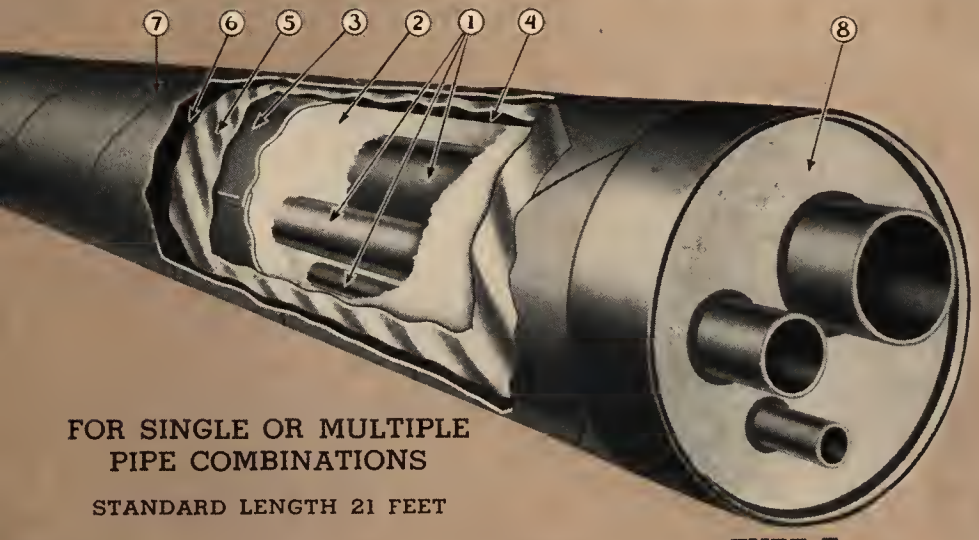
THE RIC-WIL COMPANY
Executive Offices • Cleveland, Ohio
Representatives in Principal Cities

FORM 4708 Printed in U. S. A.

RIC-WIL INSULATED PIPE UNITS

For Underground, Surface, Or Overhead Installations

Factory Prefabricated To Definite Specifications



1. Steam, oil, hot water or refrigeration pipes
2. Insulation Cylinder
3. Felt Jacket
4. Air Space
5. Helcor Conduit
6. Asphalt
7. Asbestos Felt
8. Preseal Ring

FOR SINGLE OR MULTIPLE PIPE COMBINATIONS

STANDARD LENGTH 21 FEET

TYPE F

AVAILABLE IN THE FOLLOWING TYPES:

TYPE F

All pipes insulated with machine molded asbestos fibre in a heavy asbestos felt cylinder.

TYPE SPC

Sectional pipe covering of any specified type and thickness applied to any or all pipes to meet job requirements.

TYPE UL

For oil or process liquids. Pipes are nested inside of laminated asbestos insulation liner which insulates pipes from the exterior but not from each other.

Ric-wiL Insulated Pipe Units are factory prefabricated in standard 21 foot lengths for underground, surface, or overhead distribution of steam, hot water, oil, and process liquids. High insulation factor assures efficient distribution, maintenance of desired temperatures, low heat loss.

Pipes and insulation are housed in a 16 gauge, helically corrugated, galvanized iron conduit of full-welded construction, over which a heavy coating of high temperature asphalt and a tension wrapping of asphalt saturated asbestos felt assure complete protection against moisture penetration. The inherent durability, strength and flexibility of the Helcor conduit permit installation underground in narrow, shallow trenches, even under highways and under or near railroad tracks, minimizing excavation and backfill. Conduit ends, with heavy iron collars welded to the ends of the Helcor, are sealed with a heavy preseal ring of insulating cement and made watertight by treated asbestos calking and a special waterproofing cement. **Ric-wiL Insulated Pipe Units** can also be furnished with Cast Iron Conduit instead of Helcor conduit to meet special conditions.

Single pipe or multiple pipe systems can be fabricated to meet any specifications — steel, iron, brass, or copper pipe — with ends beveled for welding or threaded and coupled. Heavy, sturdy, cement-reinforced, and steam cured pipe supports placed on not more than 10 ft. centers carry weight of pipe and assures proper alignment, with pipes free to expand and contract within the conduit, without injury to the insulation.

Insulation may be molded waterproof asbestos fibre (Type F **Dry-paC**) where all pipes are insulated, or sectional pipe covering (Type SPC) where pipes not requiring insulation may be left bare and others insulated to any thickness as required by specifications. A third method (Type UL) employs a laminated asbestos insulation liner to insulate pipes from the exterior but not from each other. This is used for piping oil or viscous fluids using a steam or hot water tracer line to maintain a constant temperature.

A simple mechanical drive wedge coupler is used for making positive, water-tight closures between units. For excessive water conditions the coupler may be welded and entire system air tested.

Ric-wiL Insulated Pipe Units are assembled by skilled workmen using high-grade materials, assuring an efficient, maintenance-free, permanent system. Prefabrication feature makes possible speedy installation with a minimum of field work — all units for straight runs, elbows, tees, anchor units, gland seals, and expansion loops are completely finished in the shop and delivered to job site with couplers for simple assembly in the field. Compact, durable units are carefully packed and braced for shipment and offer no shipping problems whether common carrier is truck, rail, or ship. Shipping space and transportation costs are held to a minimum.

CONDENSED SPECIFICATIONS

All distribution piping shall be installed in **Ric-wiL Insulated Pipe Units** furnished in approximately 21-foot lengths, housed in 16 gauge galvanized, spirally corrugated Armco ingot iron conduit, coated with high-temperature asphalt and tension wrapped with asbestos felt. Ends of each conduit shall be factory sealed for shipping, handling and installation. Insulation shall be machine molded water resistant asbestos fibre (**Ric-wiL Dry-paC**) contained within an asbestos felt jacket, or as specified. All pipe shall be supported in conduit, free to expand and contract without stress on the insulation. All expansion loops and other accessories shall be prefabricated similar in design to straight units. WRITE FOR COMPLETE SPECIFICATIONS.

Ric-wiL Insulated Pipe Units are covered by the following patents: U. S. Letters Patent Numbers — 1991455, 2330966, 2050968, Re. 19302; Canada Letters Patent Numbers — 360816, 324178. Others pending.

RIC-WIL Prefabricated Accessories Save Time And Labor In Field Installations.

Expansion Loops

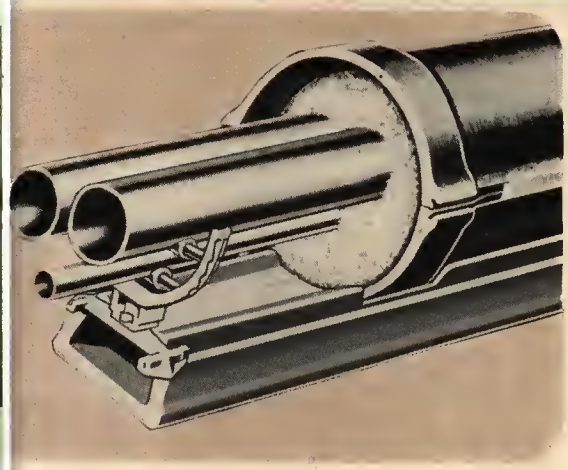
Elbow Units

T-Branch Units

Anchor Units

Gland Seals

RIC-WIL STANDARD TILE CONDUIT



For Underground Installation Under Ordinary Loads

Ric-wiL Standard Tile system consists of salt-glazed vitrified tile conduit and base-drain foundation. Conduit is shipped ready to install in full-round 2-foot sections, scored for easy splitting and resealing at job site.

- Lower half is cradled on non-settling base drain providing a substantial foundation and adequate drainage.
- Interlocking construction and Loc-Lip cemented joint insure abundant strength, permanent alignment, and unusual tightness.
- Pipes are carried by roller-type cast iron pipe supports which rest on shoulder of base drain independent of conduit.
- Only three pieces to handle for each two feet of system — speedy and economical installation.

Insulation (Type F) consists of **Ric-wiL Dry-paC** waterproof asbestos fibre, hand-packed into the conduit to form a permanent protective covering — water-repellant and non-settling. Other types to meet special conditions can also be furnished. Pipes not furnished.

RIC-WIL SUPER-TILE CONDUIT

For Heavy Ground Loads, Under Highways

Ric-wiL Super-Tile Conduit was developed for the protection of distribution lines laid under heavy ground loads, where great physicol strength and lood carrying capacity are demonded. It has the some physical features and easy-to-install advantages as Standard Tile except that walls are approximately double standord thickness with extra-heovy reinforcing at top, bottom, and sides, giving maximum strength. Base-drain foundation is of correspondingly heavy construction.

Insulation may be loose filler type **Ric-wiL Dry-paC** waterproof osbestos, same as for Standard Tile, or other types as shown at right.

Because of uniform dimensions, Super-Tile Conduit is interchongeable with Stondard Tile, and may be used in a run only where its superior strength is required. For installation under railroad tracks, **Ric-wiL Cast Iron Conduit**, shown below, is recommended.

RIC-WIL CAST IRON CONDUIT

For Installation Under Or Near Railroad Tracks

Ric-wiL Cast Iron Conduit is ideally suited for protection of insulated piping under or near railroad tracks. Heavy ribbed reinforcing imparts great structural strength to the conduit and the ability to withstand vibration and repeated load impacts.

Conduit is shipped in four-foot sections, with installation procedure same as for Tile Conduit. Metal drive-on type side clamps are provided for extra tightness and rigidity — insuring a system that is durable, watertight, and vibration-proof.

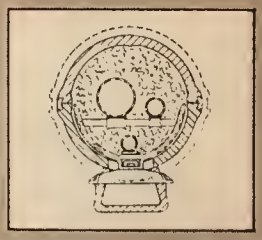
Cast Iron Conduit is furnished with heavy tile base drain — same as for Super-Tile. Special cast iron base drain may also be furnished.

Insulation may be loose filler type **Dry-paC** waterproof asbestos, same as for Standard Tile, or other types as shown at right.

Interchangeable in the same run with Standard Tile or Super-Tile Conduit to meet any varying ground load conditions.

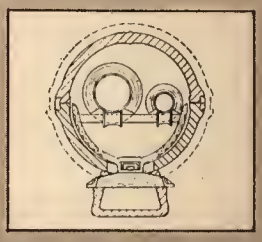
Ric-wiL Tile, Super-Tile, and Cast Iron Conduits for underground use are available in the following types adaptable to single or multiple pipe systems:

TYPE F



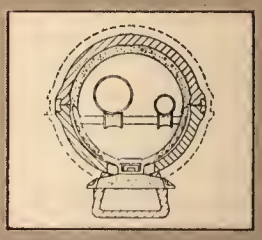
Loose filler type waterproofed asbestos insulation (Ric-wiL Dry-paC) surrounding all pipes — hand-packed into conduit to form a permanent protective covering.

TYPE SPC



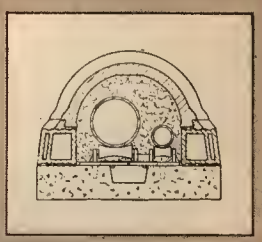
Sectional pipe covering applied directly to any or all pipes — where specific pipes require insulation and others need no insulation.

TYPE DA



For oil or process liquids. Diatomaceous earth lining molded and keyed to inside of conduit insulates pipes from the exterior but not from each other. TYPE DF — same as Type DA with addition of insulation (Ric-wiL Dry-paC) packed around pipes.

TYPE UB



Half-tile arch is supported on trapezoidal side blocks, resting on concrete pad laid on job site. Internal drainage.

ACCESSORIES FOR RIC-WIL TILE CONDUIT SYSTEMS

Reducer Fitting

Elbow Fitting

Tee Fitting

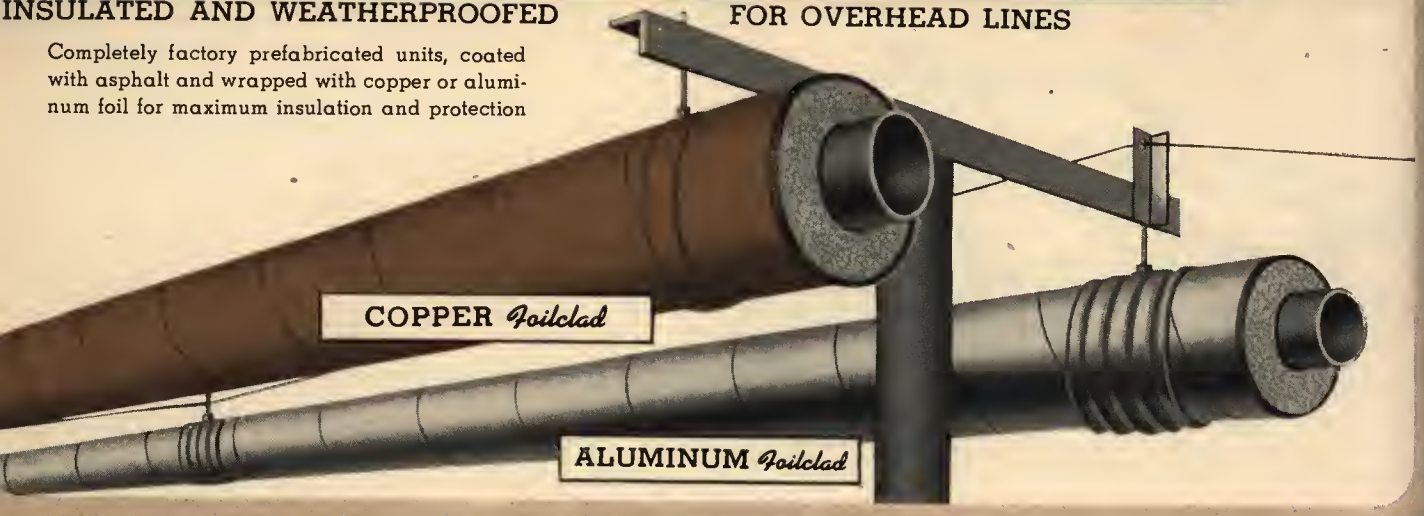
Alignment Guide

Shutter Sleeve

RIC-WIL *Foilclad* PIPE UNITS

INSULATED AND WEATHERPROOFED FOR OVERHEAD LINES

Completely factory prefabricated units, coated with asphalt and wrapped with copper or aluminum foil for maximum insulation and protection



Ric-wiL *Foilclad* Pipe Units are specifically designed to fulfill every requirement for protection of overhead steam, hot water, and brine distribution lines for oil refineries, railroad yards, or for any application where conditions make it desirable to run pipe lines overhead.

Pipe, as specified, is covered with loose-fitting (for pipe expansion) insulation of asbestos pipe covering to any desired thickness. Insulation is then machine coated uniformly with high-temperature asphalt and wrapped with asbestos felt, followed by an additional coating of asphalt to a thickness of 1/4", or more if desired. As a final operation, the outside is spirally wrapped with a sheet of thin electrolytic copper or pure aluminum, making a perfect bond with the hot asphalt. The finished product is a rugged, durable unit — completely waterproof and corrosion-resistant — with pipe and insulation amply protected from the elements.

Complete units are furnished to meet any specification as to kind of pipe or joint — beveled for welding or threaded and coupled.

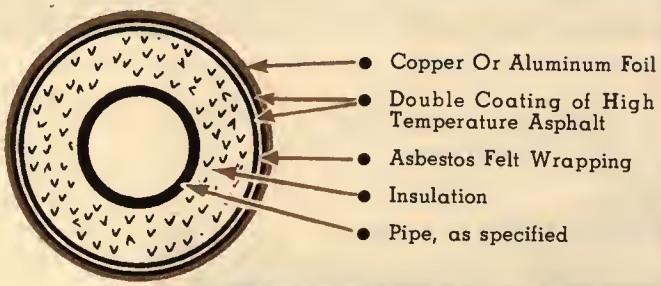
Detail at right shows method of supporting pipes overhead, using galvanized iron bands around outside of unit for pipes up to 3-1/2" dia., and pipe support rollers for pipes 4" and larger which suspend pipes independently of the insulation.

Completely shop fabricated by modern methods and special machinery, ***Foilclad* Pipe Units** are delivered to job site in standard 21-foot lengths ready to hoist into place, eliminating the field work of insulating, waterproofing, wrapping and wiring of conventional methods. Galvanized iron sleeves and wedge clips are also provided for making simple connection of units in the field. Expansion loops, fittings, etc., are furnished in the same design to make a complete system, ready for field erection at minimum cost.

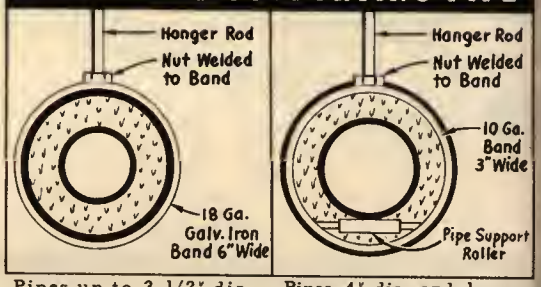
TYPICAL SPECIFICATIONS

All outside overhead piping requiring insulation shall be **Ric-wiL *Foilclad* Pipe Units**. Pipe, as specified, shall be covered with insulation as recommended by the manufacturer, coated with high-temperature asphalt and tension wrapped with asbestos felt to a minimum thickness of 1/4", followed by a spiral wrapping of thin electrolytic copper or pure aluminum foil sheet, as specified. Pipes shall be supported as shown on plans, and installation shall be in accordance with manufacturer's instructions.

CROSS SECTION OF *Foilclad* UNIT



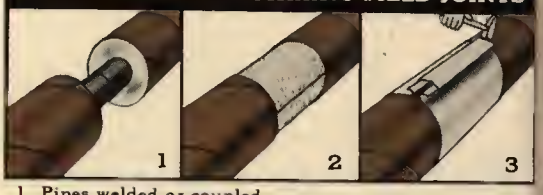
METHOD OF SUPPORTING PIPE



Pipes up to 3-1/2" dia. Galv. iron bands support units on 10-1/2 ft. centers.

Pipes 4" dia. and larger. Supported independently of insulation on pipe rollers spaced in center of unit.

3 SIMPLE STEPS IN MAKING FIELD JOINTS



1. Pipes welded or coupled.
2. Insulation applied over exposed pipe.
3. Galvanized iron coupler slipped over ends of units and drawn tight with wedge clip driven on, cement sealing all joints.

Ric-wiL Insulated Pipe Units (Page 2) are also available for overhead construction with bare Helcor conduit, omitting asphalt coating and felt wrapping.

Photos at left and right illustrate a recent installation of this type for overhead steam and hot water distribution in a railroad yard.

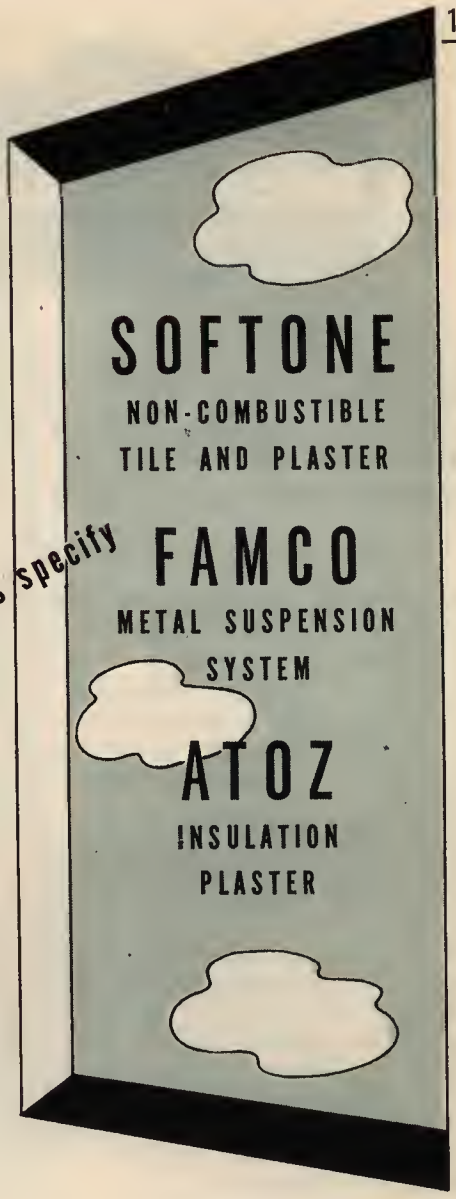
sound control

section 11

acoustical materials a

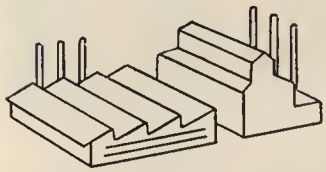
fastening systems b

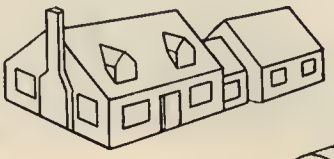
vibration isolation c

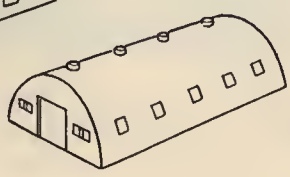


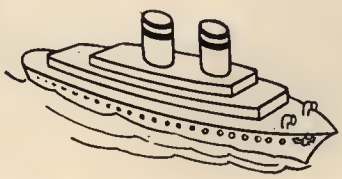
more and more "forward looking" architects specify

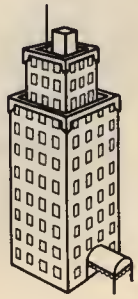
TURN TO THE PHOTOS, FACTS AND SPECIFICATIONS OF AMERICAN ACOUSTICS' PRODUCTS AND SERVICES











AMERICAN ACOUSTICS, INC., 74 TRINITY PLACE, NEW YORK, N. Y.

THE SUPERLATIVE ACOUSTICAL TILE THAT BLENDS SMARTLY WITH ALL ARCHITECTURAL INTERIORS

HERE ARE OUTSTANDING FEATURES THAT MAKE THESE MATERIALS IDEAL FOR CLASSROOMS, CORRIDORS, SWIMMING POOLS, OFFICES, CAFETERIAS AND AUDITORIUMS.

SOFTONE NON-COMBUSTIBLE ACOUSTICAL TILE

CHARACTERISTICS

ACOUSTICAL EFFICIENCY: SOFTONE possesses a high coefficient of noise reduction ranging from .65 to .80.

APPEARANCE: SOFTONE'S fine grain surface gives ceilings and walls a luxuriant finish.

INCOMBUSTIBILITY: SOFTONE is incombustible, has successfully withstood a flame test of 2800° F. for one hour.

LIGHT REFLECTION: The factory-painted "Sunny White Finish" has a light reflectivity, averaging 85%.

LOW MAINTENANCE: SOFTONE is a "non-breathing" material that stays cleaner longer because dust and dirt are stopped on the surface. Can be readily washed or cleaned with any standard wall paper cleaner.

PAINTING: SOFTONE may be repainted without noticeably affecting the acoustical efficiency. Spray painting is preferable, but either method may be used.

MOISTURE RESISTANT: SOFTONE will not shrink, warp, bulge or swell.

SANITARY: SOFTONE will not harbor vermin or permit fungus growth.

MODERATE COST: SOFTONE tiles may be cemented by adhesive directly on a solid backing. They may be nailed to wood furring strips or installed by any standard metal suspension system. Fibre splines on all sides prevent breathing at the joints and assures a true, level, ceiling surface. This variety of application permits a cost range to suit the budget. Lower construction costs are possible by using the famous FAMCO metal suspension system.

SUGGESTED SPECIFICATIONS FOR SOFTONE ACOUSTICAL CEILING WHEN CEMENTED

WORK INCLUDED: All ceiling areas and spaces as indicated in the room finish schedule or as otherwise noted in plans and specifications shall be treated with acoustical material as hereinafter specified.

MATERIAL: The acoustical material shall be SOFTONE tile, or equal, as manufactured by AMERICAN ACOUSTICS, INC. The tile shall be furnished in units, size 12" x 12" x 1", having beveled edges on all sides and slotted on two edges which receive fibre splines. The tile shall be composed of ground cork and a mineral cement binder. The tile shall be of such density as to prevent breathing and its resultant discoloration. The exposed face of the tile shall be factory painted sunny-white providing a light reflectivity of 85%. The noise reduction coefficient shall be not less than .65. The acoustical tile shall be incombustible, and capable of being repainted, washed, or cleaned without injury to the material or its acoustical efficiency.

APPLICATION: The tile shall be applied directly to a level brown coat plaster surface or rock lath base furnished in place by others, using an approved acoustical adhesive as recommended by the manufacturer. The tile shall be applied in straight lines or broken line pattern.

Acoustical units shall be laid out so as to leave borders of equal width on opposite sides of each area. The border units shall be the same as the field units and shall not be less than 4" nor more than 12" wide. Acoustical units shall not be required on sides or soffits of beams, ducts, cornices or pilasters.

Concealed splines shall be fitted into slots in the edges of SOFTONE so that one spline will engage the corners of four acoustical units and bring same to a true and level plane.

Where acoustical treatment intersects walls, ducts, columns, etc., place cove molding, where specified, and securely fasten in position.

All work to be performed by factory recognized acoustical applicators in a satisfactory and workmanlike manner.

SUGGESTED SPECIFICATIONS FOR SUSPENDED SOFTONE ACOUSTICAL CEILING

WORK INCLUDED: All ceiling areas and spaces as indicated in the room finish schedule or as otherwise noted in plans and specifications shall be treated with acoustical material as described hereinafter.

MATERIAL: The acoustical material shall be SOFTONE, or equal, as manufactured by AMERICAN ACOUSTICS, INC. The tile shall be furnished in unit size, 12" x 24" x 1", and center scored to simulate 12" x 12" tile with edges beveled and kerfed on all sides. The tile shall be of such density as to prevent breathing and its resultant discoloration. The exposed face of the acoustical tile shall be factory painted Sunny-White having a light reflection of 85%. The noise reduction coefficient shall be .80. The acoustical tile shall be incombustible, capable of being repainted, washed, or cleaned without injury to the material or its acoustical efficiency.

APPLICATION: No cross furring, metal lath, or plastering is required in areas where acoustical materials is installed with Famco Metal Suspension System, or equal, consisting of Tee runners and Clip splines secured by hanger and channels from structure above.

1½" carrying channels shall be acurately leveled and spaced by others, not over 4' on centers, with the first channel not over 1' from the wall line. They shall be supported by ¼" round, mild, steel hanger rods or 1" x 3/16" flats spaced approximately 4' on center both ways. The Tee runners shall be placed 2' on centers and secured to the carrying channels by Famco Channel clamps. The acoustical units shall be supported continuously on the 24" sides with metal clip splines. Splines shall be installed between the units on the 12" ends completely sealing each unit to prevent breathing. The perimeter of each ceiling shall be finished off with a suitable molding where specified and securely fastened in position.

All work to be performed in a satisfactory and workmanlike manner, erected by approved and experienced applicators according to manufacturers instructions.

SOUND ABSORPTION COEFFICIENTS

Thickness	* Mounting	COEFFICIENTS 128	256	512	1024	2048	4096	Noise Red. Coef.	Surface
1"	10	.51	.88	.72	.71	.83	.74	.80	Factory painted two coats
1"	2	.10	.26	.72	.90	.75	.65	.65	Factory painted two coats
1"	1	.11	.26	.66	.90	.74	.79	.65	Factory painted two coats
1"	1	.07	.21	.57	.95	.89	.82	.65	Factory painted 2 coats plus 2 additional coats

* #10, Metal suspension: #2 nailed to 1"x3" wood furring strips: #1 cemented to plaster.

In addition to our own tests, our products are also tested by independent laboratories throughout the nation.

We will be glad to mail copies of all reports as they are issued, or only on those products and tests that interest you.

Let us know which you prefer.

PRODUCTS WORTHY OF AN

Acoustics play an important role in selling GAROD Radios. That's why Bell Electronics, Inc., New York Distributors of GAROD, have installed Softone Acoustical Tile in their showrooms.

James A. Phillips, Inc., Installation Contractor, N. Y. C. Sohn & Weston, Architects, Brooklyn, N. Y.

NATIONAL BISCUIT COMPANY of New York City has installed 60,000 square feet of Softone Acoustical Tile on the ceilings of their General Offices. The result:—Less Noise . . . Greater Efficiency.

Installed by William J. Scully

TYPE IDENTIFICATION OF SOFTONE TILE UNITS

Type A
"Cemented"
Size 12"x 12"x 1"
Beveled 4 sides
Not kerfed
Slotted 2 opposite sides
Painted or unpainted

Type B
"Cemented"
Size 12"x 12"x 1"
Not beveled
Not kerfed
Slotted 2 opposite sides
Painted or unpainted

Type 1010
"Cemented"
Size 10"x 10"x 15/16"
Beveled 4 sides
Not kerfed
Slotted 2 opposite sides
Painted or unpainted

Type 612
"Cemented"
Size 6"x 12"x 1"
Beveled 4 sides
Not kerfed
Painted or unpainted

Type F
"Famco"
Size 12"x 24"x 1"
Beveled 4 sides
Kerfed 4 Sides
Center scored
Painted or unpainted

Type H
"Cemented"
Size 12"x 24"x 1"
Beveled 4 sides
Not center scored
Kerfed 4 sides
Painted or unpainted

Type I
"Famco Border"
Size 12"x 24"x 1"
Beveled 2 long sides
Square 2 short sides
Kerfed 4 sides
Not center scored
Painted or unpainted

Type J
"Famco"
Size 12"x 24"x 1"
Not beveled
Square edge 4 sides
Kerfed 4 sides
Not center scored
Painted or unpainted

Width of Bevel: 3/16"

Available in 8 colors.

SEE NEXT PAGE FOR FAMCO FEATURES

FAMCO

METAL SUSPENSION SYSTEM
FOR ERECTING ACOUSTICAL TILE

"FAMCO" MATERIALS AND SERVICES

"FAMCO" presents a variety of erection systems especially designed to cover the field of Sound and Thermal Insulation. This system, for the mechanical erection of suspended ceilings, permits the mechanical fastening of Acoustical and Thermal Tile directly to the underside of existing ceilings.

Constant research and development of our product keeps pace with the latest improvements in acoustical and insulation tile and perforated pans. These erection systems have been developed through years of laboratory and field research, offering the best possible solutions to the many problems encountered.

This superior method for erecting ceiling tile offers advantages in old as well as new structures. It can be installed directly over sheet metal ceilings without its removal. Because of its greater flexibility and fewer parts—ceilings are easily and more quickly installed in perfect alignment and at lower cost.

Competent engineering service is available to assist the architect, without obligation, on any problem involving the erection of acoustical and thermal materials.

SUGGESTED SPECIFICATIONS

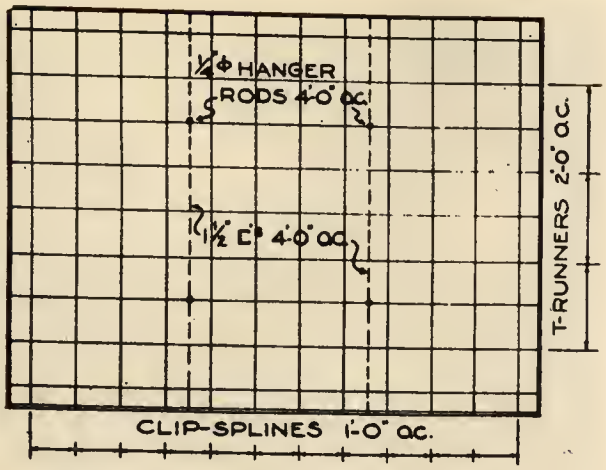
WORK INCLUDED: List and locate all areas of walls and ceilings to be covered with acoustical tile.

MATERIAL: Insert the name and type of acoustical tile to be installed (non-combustible tile is recommended for all suspended acoustical ceilings and most building codes in the various cities insist that such tile be used when suspended without benefit of fireproof base above acoustical tile). All tile shall be 12" x 24", center grooved to simulate the appearance of 12" x 12" tile.

INSTALLATION: The acoustical contractor shall furnish and install 1½ in. x .0625 cold formed carrier channels, painted, 7/16 in. flange outside measurement, accurately leveled, and spaced not over 4 ft. on centers, with first channel not over 4 ft. from wall line. Round mild steel hanger rods, 3/16 in. diameter for supporting the channels shall be furnished and placed by general contractor in locations as designated by acoustical contractor. Hanger rods shall be spaced approximately 4 ft. on centers both ways. The acoustical contractor shall furnish and attach "FAMCO" tee-runners 2 ft. on centers at right angles to the carrier channels with special "FAMCO" channel clamps.* "FAMCO" clip-splines shall be furnished and placed in long edge of factory-kerfed acoustical tile, and snapped into the tee-runners. Fibre splines shall be inserted between adjacent tile in slots provided on the 12 in. edges of tile, to inhibit breathing.

The acoustical contractor shall furnish and place special wall plate for supporting the tee-runners, 1½ in. channels and acoustical tile at intersection of tile with vertical surfaces. The acoustical contractor shall place appropriate molding as specified and furnished under Mill Work.

*"FAMCO" tee-runner splices shall be inserted in the abutting ends of tee-runners.



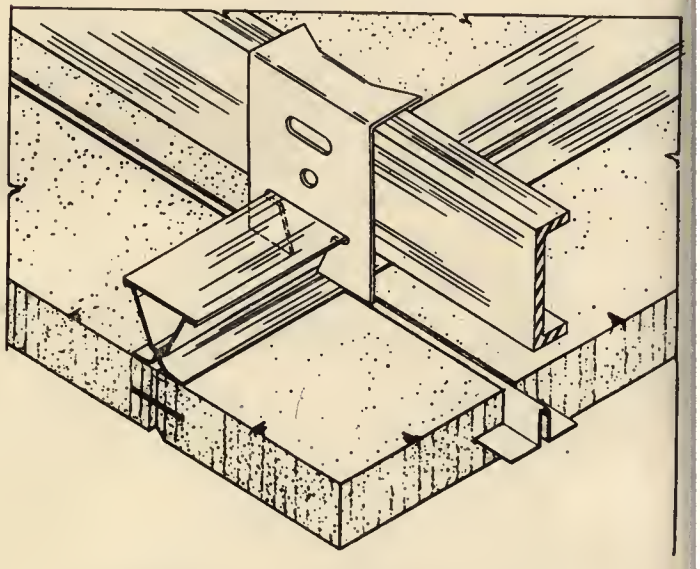
TYPICAL REFLECTED CEILING PLAN
12"×24", CENTER GROOVED, ACOUSTICAL TILE

ERECTION INSTRUCTIONS

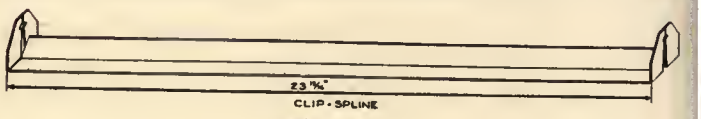
Measure ceiling area and determine location of channel grillage and ceiling height — then erect tile in 4 simple steps as follows:

1. PLACE WALL PLATE at proper height on all vertical surfaces.
2. ERECT CHANNEL GRILLAGE (place first channel a maximum of 4'-0" from wall — channels usually run LONG way of room).
3. PLACE TEE-RUNNERS (start at center of ceiling and work both ways — first runner will be on ℄ or 6" off ℄ depending on border treatment).
4. PLACE CLIP-SPLINE IN TILE AND SNAP INTO TEE-RUNNER (Tile are factory grooved).

NOTE: The system is self-aligning, but can be moved or adjusted by driving to desired location. Cut clip-splines to fit border tile.

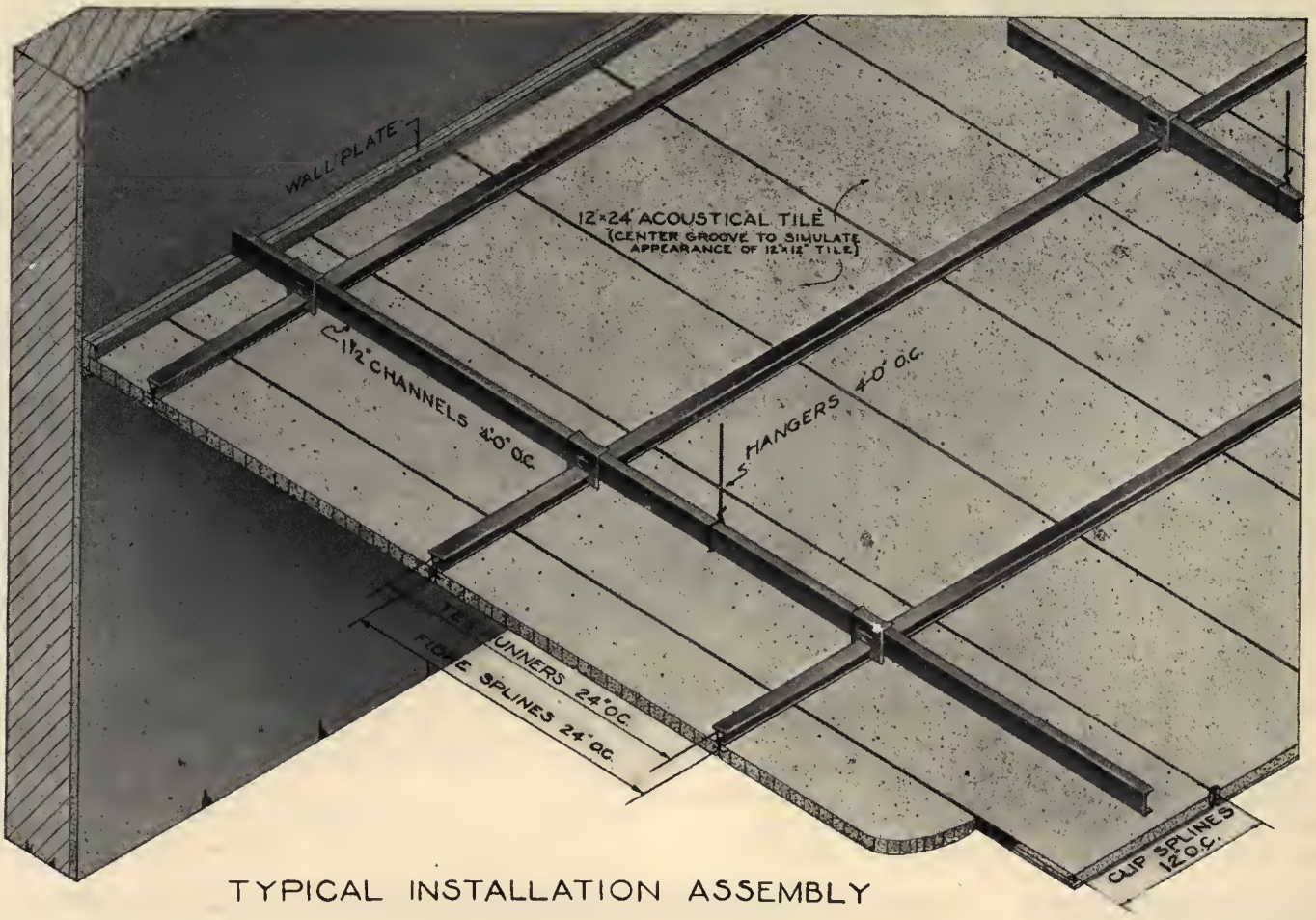


LARGE SCALE ASSEMBLY DETAILS

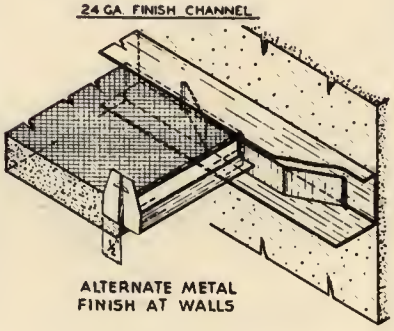


No.-421

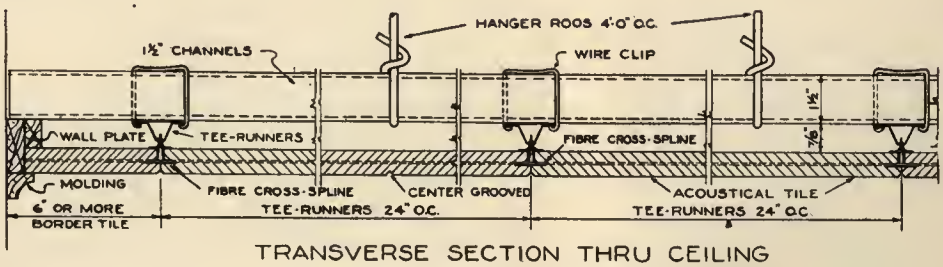
PRODUCTS WORTHY OF AN



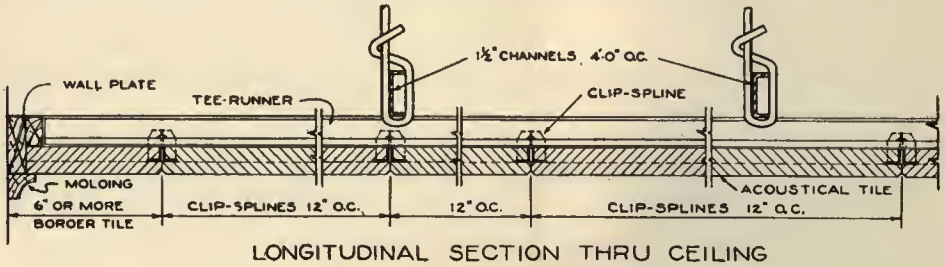
TYPICAL INSTALLATION ASSEMBLY



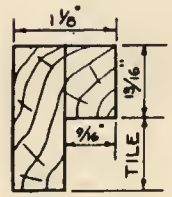
ALTERNATE METAL FINISH AT WALLS



TRANSVERSE SECTION THRU CEILING

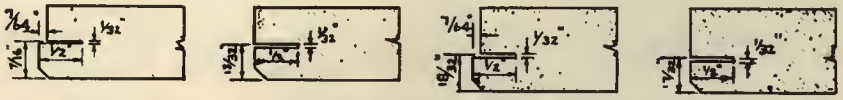


LONGITUDINAL SECTION THRU CEILING



WALL PLATE
(ONE OR TWO PIECE)

TEE-RUNNER
No.-697



TRANSVERSE SECT. LONGITUDINAL SECT. TRANSVERSE SECT. LONGITUDINAL SECT.
TILE UP TO ⅞" THICK TILE OVER ⅞" TO 1" THICK

KERFING OF ACOUSTICAL TILE FOR "FAMCO" SYSTEM

"Famco" manufacturing rights owned by Famco, Inc., Moline, Illinois

ARCHITECT'S RECOMMENDATION

SOFTONE

NON-COMBUSTIBLE ACOUSTICAL PLASTER

THE MODERN PLASTER THAT MEETS THE MOST ADVANCED ARCHITECTURAL REQUIREMENTS!

SOFTONE offers a simple and inexpensive solution to the problem of permanently applying a fine appearing, acoustical efficient material to any type of surface—flat, curved or irregular. Because of its extreme simplicity of installation (applied like regular plaster), it can be applied to any clean surface free from loose particles, dust or oil.

SOFTONE is mixed with water and troweled directly to wood, metal, brick, tile, rock lath, plaster or concrete —producing the most pleasing results. Its high bonding strength assures permanent adhesion without the use of any type of mechanical bond. **SOFTONE** plaster is used both for the scratch and finish coats. A one inch thickness is applied to walls and ceilings in two coats.

When applied, **SOFTONE** produces a light warm gray stipple finish, fine or coarse as desired, that can be left unpainted or can be finished with any standard non-bridging resin emulsion paint to any shade desired.

SOFTONE PLASTER CHARACTERISTICS

ACOUSTICAL EFFICIENCY: SOFTONE possesses a high coefficient of noise reduction ranging from .65 to .80.

APPEARANCE: SOFTONE fine grain surface gives ceilings and walls a luxuriant finish.

VERSATILITY: SOFTONE was developed to meet specific insulation and acoustical requirements. Its use in varying thicknesses will cover a wide range as of job requirements.

BONDING STRENGTH: SOFTONE Plaster has the highest bonding strength in the plastic insulation field. It will adhere to any clean surface, whether smooth, curved or irregular.

LOW MAINTENANCE: SOFTONE is a "non-breathing" material that stays cleaner longer because dust and dirt are stopped on the surface. Can be readily washed or cleaned with any standard wall paper cleaner.

PAINTING: SOFTONE may be painted many times without noticeably effecting the acoustical or insulation efficiency. Spray painting is preferable, but either method may be used.

MOISTURE RESISTANT: SOFTONE will not shrink,

SANITARY: SOFTONE will not harbor vermin or permit fungus growth.

INCOMBUSTIBILITY: SOFTONE is incombustible, has successfully withstood a flame test of 2800° F. for one hour.

MODERATE COST: SOFTONE works easily and like ordinary plaster can be applied to any clean surface, such as brick, rock lath, metal lath, concrete, cement blocks, etc. A one inch thickness of SOFTONE can be applied to walls and ceilings in two coats. No other operations are necessary. SOFTONE drys quickly.

Write for copies of latest laboratory reports to:

AMERICAN ACOUSTICS, INC., 74 Trinity Place, New York 6, N. Y.

SOUND ABSORPTION COEFFICIENTS

Thickness	Sample	COEFFICIENTS						Noise Red. Coef.
		128	256	512	1024	2048	4096	
1"	1	.42	.79	.66	.64	.82	.87	.75
¾"	2	.50	.86	.74	.67	.81	.92	.75
½"	3	.44	.24	.26	.44	.78	.93	.45
¾"	4	.46	.90	.78	.70	.83	.91	.80
1"	5	.50	.89	.75	.70	.87	.87	.80

Sample 1 on metal lath; Sample 2 on metal lath;
Sample 3 on ⅜" gypsum wallboard; Sample 4 on metal lath; Sample 5 on metal lath.

SUGGESTED SPECIFICATIONS FOR SOFTONE ACOUSTICAL PLASTER

WORK INCLUDED: All wall and ceiling areas as indicated in the room finish schedule or as otherwise noted in plans and specifications shall be covered with two coats of SOFTONE Acoustical Plaster, or equal, as described hereinafter.

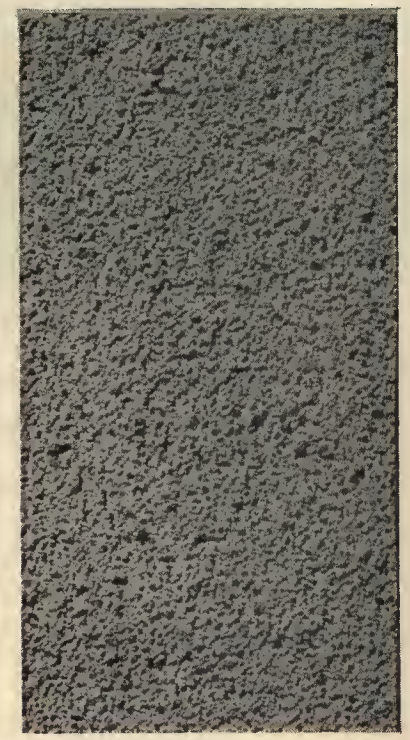
MATERIAL: The Acoustical plaster shall be Softone as manufactured by American Acoustics, Inc. The material will be furnished premixed at the factory in bags containing sufficient material for two square yards 1" thick. It shall be composed of finely ground fillers with a mineral cement binder together with an aerating agent to insure a light weight body filled with air cells. The material will not ignite or support combustion and when set, form a non-breathing, smooth firm surface sufficiently strong to resist normal use. The thermal conductivity shall be not less than .51. It shall have a noise reduction coefficient of not less than .80 for one inch thickness on metal lath.

The finish surface of the plaster shall be of a porous texture, free from waves, ridges, or depressions and when dry ready to receive a paint finish.

APPLICATION: Softone Acoustical Plaster shall be applied directly to metal lath, rock lath, cement blocks or concrete. Full instructions are furnished by the manufacturer for mixing and applying the product. The scratch coat is usually ¼" thick while the finish coat can be applied as much as 1" thick in one operation. All work to be performed in a satisfactory and workmanlike manner, erected by approved and experienced applicators according to manufacturer's instructions.

Eating becomes a pleasant pastime at LORD & TAYLOR'S BIRD CAGE RESTAURANT in Mamaroneck, New York because its distinctive, charming atmosphere is fully appreciated by patrons who relax as they dine. The Softone Acoustical Plaster ceiling with its "Bird-motif" throughout, lends an atmosphere of elegance and charm.

Starrett & Van Vleck, Architects, Raymond Loewy Associates, Interior Designers



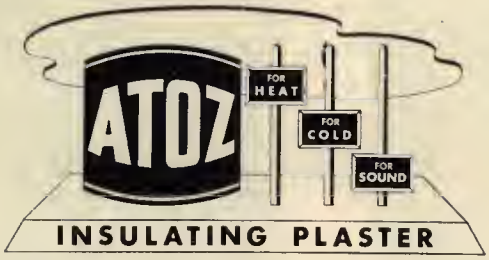
Actual size photograph of Softone Acoustical Plaster.

SOFTONE Acoustical Plaster combines with smart design, to give quiet dignity to the Executive Offices of the CONTAINER CORPORATION OF AMERICA, Chicago, Illinois.

Architect: Morton L. Pereira & Associates, Chicago, Illinois

Softone Acoustical Plaster magnified 18 times to show the interstices in which sound waves are trapped.

ARCHITECT'S RECOMMENDATION



THE MODERN MULTI-PURPOSE PLASTER

THAT PERFORMS WELL IN . . .

FACTORIES, HOUSING PROJECTS, ENGINE ROOMS, SHIPS, SHEET METAL BUILDINGS (QUONSET HUTS), CONCRETE BLOCK WALLS, STORAGE TANKS, AIR DUCTS, PRE-FABRICATED HOUSES, BOILER ROOMS, AND LOADING DOCKS.

ATOZ CHARACTERISTICS

INCOMBUSTIBILITY: ATOZ is incombustible, has successfully withstood a flame test of 2800° F. for one hour.

INSULATION EFFICIENCY: ATOZ has shown, through recent laboratory reports, to have a thermal conductivity of .51 B.T.U. This high value assures large economies in fuel costs during cold months and beneficial cooling effects in summer.

BONDING STRENGTH: ATOZ Plaster has the highest bonding strength in the plastic insulation field. It will adhere to any clean surface, whether smooth, curved or irregular.

VERSATILITY: ATOZ was developed to meet specific insulation and acoustical requirements. Its use in varying thicknesses will cover a wide range as to job requirements.

ACOUSTICAL EFFICIENCY: ATOZ possesses a high coefficient of noise reduction ranging from .65 to .80.

APPEARANCE: ATOZ fine grain surface gives ceilings and walls a luxuriant finish.

LOW MAINTENANCE: ATOZ is a "non-breathing" material that stays cleaner longer, because dust and dirt are stopped on the surface. Can be readily washed or cleaned with any standard wall paper cleaner.

PAINTING: ATOZ may be painted many times without noticeably effecting the acoustical or insulating efficiency. Spray painting is preferable, but either method may be used.

MOISTURE RESISTANT: ATOZ will not shrink, warp, bulge or swell.

SANITARY: ATOZ will not harbor vermin or permit fungus growth.

MODERATE COST: ATOZ works easily like ordinary plaster, and can be applied to any clean surface, such as brick, rock lath, metal lath, concrete, cement blocks, etc. A one inch thickness of ATOZ can be applied to walls and ceilings in two coats. No other operations are necessary. ATOZ drys quickly.

For copies of latest laboratory reports, write to:

AMERICAN ACOUSTICS, INC., 74 Trinity Place, New York 6, N. Y.

TECHNICAL DATA

K. Factor: AV. .40
Adhesion: 41.7 lbs. square inch
Modulus of rupture: 125 lbs. sq. in.
Compressive strength: 97 lbs. sq. in.
Sound absorption: .40 to .90 at 512 c.p.s.
Thermal conductivity: .51 B. T. U.

ATOZ—is a patented dry mix formula of finely ground cork and fire proof minerals that is easily prepared for use by adding only water. When mixed according to directions, the contents of a 35 pound bag will cover two square yards to a thickness of 1" (can be done in two coats.) A layer 1" thick weighs only 1.7 lbs. per square foot.

ATOZ—combines the porosity of cork created by nature, with millions of air cells created by science, to form one of the world's finest insulating materials. In the mixing process, each granule of cork is coated with a fireproof mineral shell; tiny aircells are formed between these coated granules by an aerating agent as the material is chemically activated.

THERE IS NO GUESS WORK WITH ATOZ—THE RESULTS ARE ALWAYS UNIFORM.

Official Coast Guard Photo

ALL'S WELL! Installed in the wash room of the famous AMBROSE LIGHTSHIP more than 18 months ago, ATOZ is performing where competitor materials have failed. ATOZ meets or surpasses engineers' and architects' rigid specifications even under the most adverse conditions.

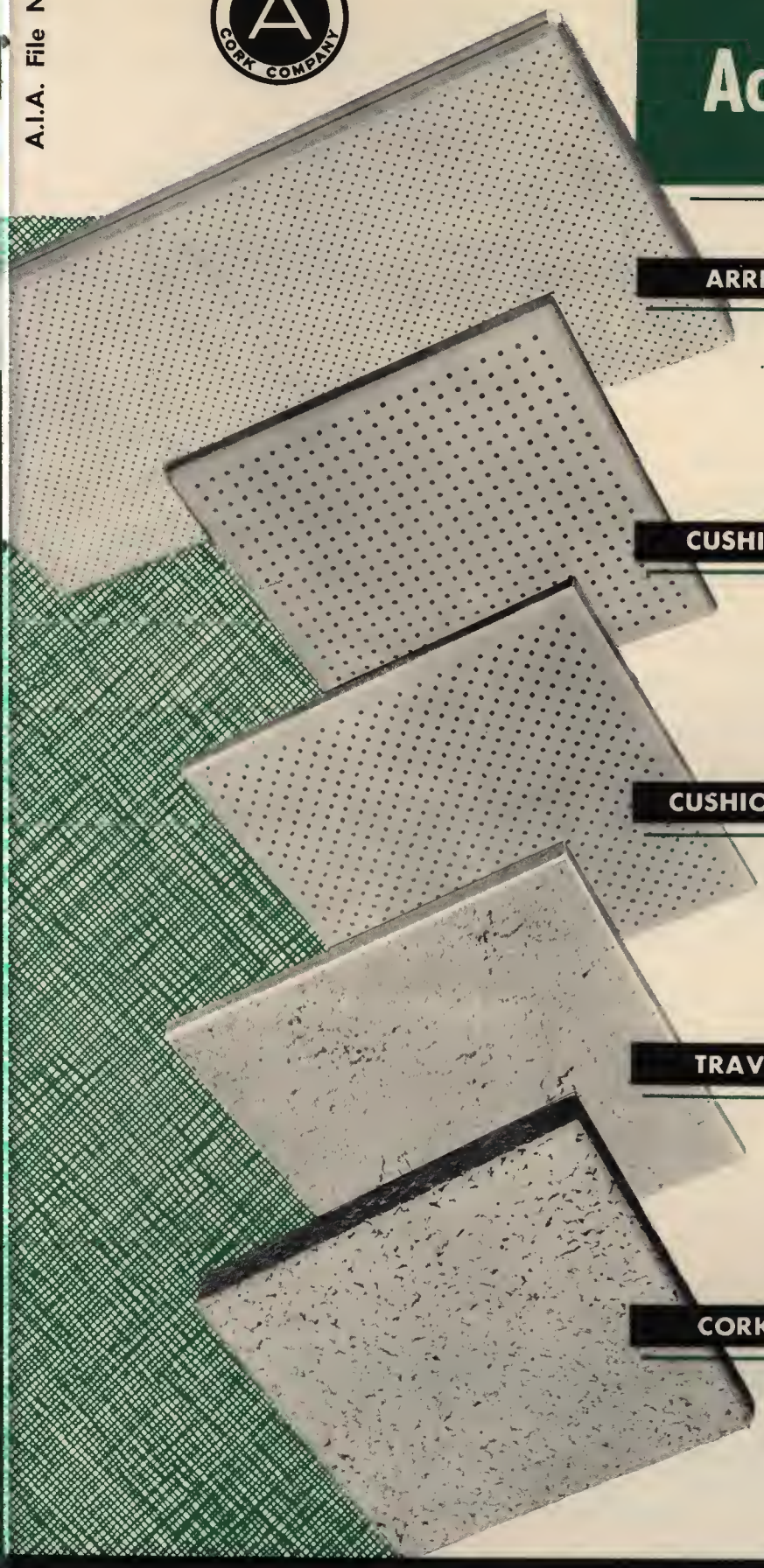
SUGGESTED SPECIFICATIONS FOR ATOZ INSULATING PLASTER

WORK INCLUDED: All wall and ceiling areas as indicated in the room finish schedule or as otherwise noted in plans and specifications shall be covered with two coats of ATOZ Insulating Plaster, or equal, as described hereinafter.

MATERIAL: The insulating plaster shall be Atoz as manufactured by American Acoustics, Inc. The material will be furnished premixed at the factory in bags containing sufficient material for two square yards 1" thick. It shall be composed of finely ground fillers with a mineral cement binder together with an aerating agent to insure a light weight body filled with air cells. The material will not ignite or support combustion and when set, form a non-breathing, smooth firm surface sufficiently strong to resist normal use. The thermal conductivity shall be not less than .51. It shall have a noise reduction coefficient of not less than .85 for one inch thickness on metal lath, and a sound absorption coefficient of not less than .80. The finish surface of the plaster shall be of a porous texture, free from waves, ridges, or depressions and when dry ready to receive a paint finish.

APPLICATION: Atoz insulating plaster shall be applied directly to metal lath, rock lath, cement blocks or concrete. Full instructions are furnished by the manufacturer for mixing and applying the product. The scratch coat is usually ¼" thick while the finish coat can be applied as much as 1" thick in one operation. All work to be performed in a satisfactory and workmanlike manner, erected by approved and experienced applicators according to manufacturer's instructions.

Armstrong's Acoustical Materials



ARRESTONE

Perforated metal pan containing a sound-absorbing mineral wool pad. Pad separated from pan to expose its full surface to sound. Pan finished in white baked-on enamel.

CUSHIONTONE

Rigid wood-fiber tile with a surface perforated by drilled holes in a rectangular pattern. Surface and beveled edges are factory-finished with two coats of white paint.

CUSHIONTONE F

Incombustible mineral wool tile with surface perforated in a diagonal pattern. Factory-finished with a white resin-emulsion paint on face and on all beveled edges.

TRAVERTONE

Mineral wool tile with a fissured surface resembling Travertine marble. Incombustible. Finished with two coats of white resin-emulsion paint. Edges beveled or square.

CORKOUSTIC

Cork tile with fissured cellular surface. Extremely moisture resistant and high in insulating value. Face and beveled edges are finished with white resin-emulsion paint.

A.I.A. File No. 39-B

ARMSTRONG CORK COMPANY

Lancaster, Pennsylvania

PROPER SELECTION OF ACOUSTICAL MATERIALS

High acoustical efficiency should not be the only consideration in selecting an acoustical material. Materials of relatively low efficiency will quiet areas of average noise level if there is enough space to install a sufficient amount of material. Except in areas where noise levels are high and space for acoustical material is limited, small points of difference in efficiency can be overlooked. Other characteristics, such as fireproofness, insulation value, or appearance may well be more important to the selection. Whatever characteristics are most important, you will find an Armstrong Acoustical Material to meet your requirements. Armstrong contractors are always ready to help you solve special acoustical problems.

1. EFFICIENCY

Since noise is the mixture of confused sounds at many frequencies, acoustical efficiency is measured by the "noise reduction coefficient" of a material or the average percentage of sound it absorbs at all frequencies. ARRESTONE is the most highly efficient (.85) of the Armstrong materials (see chart). Where a predominating frequency exists, a material should be considered for its performance at that level. For example, in auditoriums, where clarity is desired, the frequency of the human voice (512 cycles) is most important.

MATERIAL		Sound-absorption coefficients						
Mounting †	Thickness	128 Cycles	256 Cycles	512 Cycles	1024 Cycles	2048 Cycles	4096 Cycles	Noise Reduction Coefficient
ARRESTONE mechanically supported	2½"	.25	.56	.99	.99	.77	.60	.85
CUSHIONTONE No. 1	½"	.05	.18	.56	.76	.77	.73	.55
	¾"	.10	.28	.66	.91	.82	.69	.65
	⅞"	.09	.28	.74	.98	.78	.70	.70
No. 2	½"	.07	.47	.55	.70	.77	.74	.60
	¾"	.14	.51	.59	.87	.81	.70	.70
	⅞"	.17	.51	.73	.95	.75	.72	.75
CUSHIONTONE F* No. 1	¾"							
TRAVERTONE No. 1	¾"	.06	.23	.78	.97	.84	.80	.70
CORKOUSTIC No. 1	1½"	.04	.13	.44	.76	.43	.55	.45
No. 2	1½"	.14	.25	.61	.43	.52	.54	.45

Acoustical Materials Association Tests

*Test figures available at later date

How to use this chart: For each of the Armstrong acoustical materials listed in the column at left, sound-absorption figures are given at six frequencies. "Noise Reduction Coefficient," shown at right, is average percentage of sound absorbed. This figure is the measure of acoustical efficiency and is used for most noise problems which involve sounds at many frequencies.

†MOUNTINGS: No. 1—Cemented to plaster. No. 2—Nailed to furring 12" O.C.

Copyright 1948, Armstrong Cork Company, Lancaster, Pa.

ARMSTRONG'S ACOUSTICAL MATERIALS

2. COST

Armstrong's acoustical materials cover a cost-range from low to high. In general, they can be ranked as follows: lowest, CUSHIONTONE; next, CUSHIONTONE F and TRAVERTONE; then CORKOUSTIC; and highest, ARRESTONE. Cost is usually dependent upon the necessary method of application, and is lowest where material can be applied by nailing or cementing to an existing surface (see diagrams on page 7).

3. APPEARANCE

While the marble-like fissured surface of TRAVERTONE is generally considered most desirable from an appearance standpoint, there are other appearance features common to the Armstrong materials. Most important of these is that all bevels are factory painted like the face of the material. TRAVERTONE units are available with square edges, if desired. In perforated materials, holes are cleanly drilled. Unusual design arrangements are possible by the use of rectangular sizes and unperforated border units.

4. FIRE RESISTANCE

Three of Armstrong's acoustical materials are rated as incombustible. Two of them, TRAVERTONE and CUSHIONTONE F, are made of mineral wool. The third, ARRESTONE, consists of a steel pan containing a mineral wool pad wrapped in flame-proof paper. CUSHIONTONE is also available with a factory-applied paint finish, approved as fire retardant.

5. MOISTURE RESISTANCE

Where moisture conditions are extreme, only CORKOUSTIC is recommended. Its cork composition makes it an ideal material for natatoriums and other high-humidity areas.

6. WEIGHT

Structural reinforcement should almost never be necessary with the use of the Armstrong materials, as all are light in weight. However, where loads must be figured accurately, the following weights per square foot (excluding mounting) may be used:

CORKOUSTIC	1.50 lbs.
CUSHIONTONE (½" thick)	.70 lb.
CUSHIONTONE (¾" thick)	.92 lb.
CUSHIONTONE (⅞" thick)	1.09 lbs.
CUSHIONTONE F	lbs.
TRAVERTONE	1.37 lbs.
ARRESTONE	1.02 lbs.

7. INSULATING VALUE

All of Armstrong's acoustical products, being low density materials, have considerable thermal insulation value. CORKOUSTIC, 1½" thick, having a thermal conductance of only 0.18 B.T.U., is outstanding as an insulator.

8. LIGHT REFLECTION

Among the Armstrong products, there is very little variation in light reflection percentages. CORKOUSTIC ranks highest (.80), followed closely by TRAVERTONE (.79), CUSHIONTONE (.78), and ARRESTONE (.76).

9. MAINTENANCE

While Armstrong's acoustical materials require no more frequent cleaning or painting than any ordinary painted surfaces, they can be cleaned and repainted when necessary without noticeable impairment of acoustical efficiency. A folder of maintenance instructions is available.

SIZE OF UNIT

Material	Length	Width	Thickness	Material	Length	Width	Thickness
ARRESTONE	24"	12"	2½"	TRAVERTONE	12"	12"	¾"
CUSHIONTONE	12"	12"	½", ¾", ⅞"	TRAVERTONE	12"	6"	¾"
CUSHIONTONE	24"	12"	½", ¾", ⅞"	CORKOUSTIC	12"	12"	1½"
CUSHIONTONE F	12"	12"	¾"	CORKOUSTIC	12"	6"	1½"

SPECIFICATIONS FOR ARMSTRONG'S ACOUSTICAL MATERIALS

HOW TO USE THESE SPECIFICATIONS

In the following pages of specifications, all essential subject matter is presented as pre-written specification clauses in regular type. Material in italics is explanatory or indicates where the architect must fill in dimensions, brand names, or similar information.

To form a complete specification, simply copy all paragraphs except those not pertinent to the job in hand.

In certain cases, especially in remodeling, some details delegated to related trades may better be assigned to the Acoustical Contractor; for example, the installation of furring.

BRIEF SPECIFICATIONS

Furnish and install Armstrong's (Cushiontone, Cushiontone F, Corkoustic, Travertone, or Arrestone) in the finishes, designs, and sizes as herein specified, in the areas listed below, or where shown on the drawings. The acoustical material is to be installed according to the (state method or system to be used).

All products covered by these specifications are to be installed in accordance with the latest edition of Armstrong's standard specifications by a qualified Armstrong Acoustical Contractor whose bid shall include all the labor and materials required.

(List areas, sizes, and designs here.)

COMPLETE SPECIFICATIONS

Specifications for Acoustical Contractor

SCOPE

The General Conditions of the Contract Are a Part of These Specifications.

1. Work Included

This contractor shall furnish all labor and material required to complete all the acoustical work shown on the drawings, or herein specified, as follows:

a. Install (Armstrong's Cushiontone, Cushiontone F, Corkoustic, Travertone, Arrestone)
   (1) Where shown on drawings, or
   (2) Where shown on schedule of finishes.

b. Acoustical treatment, unless specified, shall not include (surfaces of all beams, girders, soffits, arches, etc.).

c. Ceilings: Apply (name material) to (brown coat of plaster, plaster board, wood furring, bottoms of masonry arches or slabs, plaster of suspended ceilings, mechanical suspension system).

d. Walls: Apply (name material) to (brown coat of plaster, plaster board, wood furring, masonry, wood furred masonry walls, mechanical suspension system).

e. Provide all fastenings, hangers, anchors, temporary facilities and materials, and other accessories as required to complete the work of this section.

f. Do all bracing, cutting, fitting, shimming, reinforcing, and temporary protection for proper installation of the work of this section of the specifications.

g. Examine preparatory work by others; and report any defects to the architect prior to proceeding with the work. Starting of the work shall imply acceptance by this contractor of the preparatory work.

h. Submit shop drawings of acoustical work in the following areas: (list areas).

i. Tests: Submit with estimate test reports of the Acoustical Materials Association for each kind or type of material listed in the estimate.

j. Submit: . . . (number) samples of each type of material.

k. Guarantee.

2. Work Excluded

(Items which could be considered as part of this section, but which are usually included in the specifications for other trades.)

a. Foundation surfaces for all beams, girders, soffits, arches, etc.

b. Insulating for sound transmission, except as specifically included.

c. Soundproof doors (wood), etc.

d. Floating wall and ceiling insulation.

e. Floating floor insulation.

f. Metal or wood moldings.

g. Moving electric fixtures.

h. Plaster board foundation.

i. Plastering foundation.

j. Furring and other wood construction.

MATERIALS

3. Cushiontone

a. Acoustical material shall be

(1) Cushiontone as manufactured by the Armstrong Cork Company.

(2) Perforated wood fiber tiles (6″ x 12″, 12″ x 12″, 12″ x 24″) and shall be (½″, ¾″, ⅞″) thick.

(3) Tile shall have 484 perforations per 12″ x 12″ unit.

(4) Tiles shall have 78% light reflection.

(5) The tiles, when applied to a solid backing, shall have a noise reduction coefficient of (.55 for ½″, .65 for ¾″, .70 for ⅞″).

b. Adhesive

(1) Adhesive for installing Cushiontone shall be Armstrong's Acoustic Cement, applied in accordance with the manufacturer's instructions.

c. Moldings

(1) Wood moldings shall be of stock pattern as approved (or special as detailed) all to be made of (white pine or .....).

(2) Metal moldings shall be of (stainless steel, chromium plated metal, solid aluminum, brass, copper, bronze, or black with polished or satin velvet finish, or .....).

d. Nails

(1) Nails for the erection of Cushiontone shall be (flat head or collar) nails, the head about ⅛" to $\frac{5}{32}$" in diameter.

(2) Nails shall be at least ½" longer than the thickness of the Cushiontone.

e. Screws

(1) Screws for the installation of Cushiontone shall be No. 3 screws, (⅛" longer than the thickness of the Cushiontone), either round or oval head.

4. Cushiontone F

a. Acoustical material shall be

(1) Cushiontone F as manufactured by the Armstrong Cork Company.

(2) Perforated mineral wool tiles (12" x 12" or 12" x 24") with face and all bevels painted.

(3) Tile shall have 685 perforations per 12" x 12" unit.

b. Adhesive for installing Cushiontone F shall be Armstrong's Acoustic Cement, and shall be applied in accordance with manufacturer's instructions.

c. Moldings.

(1) Wood moldings shall be of stock pattern as approved (or special as detailed) all to be made of (white pine or .....).

(2) Metal moldings shall be of (stainless steel, chromium plated metal, solid aluminum, brass, copper, bronze, or black with polished or satin velvet finish, or .....).

5. Corkoustic

a. Acoustical material shall be

(1) Corkoustic as manufactured by Armstrong Cork Company.

(2) Baked cork acoustical tile (6" x 12" or 12" x 12") x 1½" thick, beveled on all edges, and with face and bevels painted.

(3) Tile shall have 79% light reflection.

(4) Sound absorption—The tiles when applied to a solid backing shall have a noise reduction coefficient of .45.

b. Adhesive

(1) Adhesive for installing Corkoustic shall be Armstrong's Acoustic Cement, applied in accordance with the manufacturer's instructions.

c. Moldings

(1) Wood moldings shall be stock pattern as approved (or special as detailed) all to be made of (white pine or .....).

(2) Metal moldings shall be of (stainless steel, chromium plated metal, solid aluminum, brass, copper, bronze, or black with polished or satin velvet finish, or .....).

6. Travertone

a. Acoustical material shall be

(1) Travertone as manufactured by the Armstrong Cork Company.

(2) Mineral wool fissured acoustic tile (12" x 12", 6" x 12", 12" x 24") with edges (beveled or square) with face and all bevels painted. Tiles shall be ¾" thick.

(3) Sound absorption—The tiles when applied to a solid backing shall have a noise reduction coefficient of .70.

(4) Tile shall have 78% light reflection.

b. Adhesive

(1) Adhesive for installing Travertone shall be Armstrong's Acoustic Cement, applied in accordance with the manufacturer's instructions.

c. Moldings

(1) Wood moldings shall be of stock pattern as approved (or special as detailed) all to be made of (white pine or .....).

(2) Metal moldings shall be of (stainless steel, chromium plated metal, solid aluminum, brass, copper, bronze, or black with polished or satin velvet finish, or .....).

7. Arrestone

a. Acoustical material shall be

(1) Arrestone as manufactured by the Armstrong Cork Company.

(2) Perforated 26 ga. metal units containing a mineral wool sound absorbing pad and suspended from a mechanical suspension system. Tile shall be in 12" x 24" units with a center bevel to simulate 12" x 12" units.

(3) Tile shall have 1105 perforations per square foot, .093" in diameter.

(4) Tile shall have a baked-on finish which shall reflect 76% of the incident light.

(5) Sound absorption coefficients shall be .99 for 512 and 1024 cycles and the noise reduction coefficient shall be .85.

b. Suspension System

(1) Tile shall be supported on steel T bars supported as specified under "mechanical installation."

c. Moldings

(1) Tile at walls shall fit into a metal channel

finished to match the tile.

(2) Wood moldings shall be of stock pattern as approved (or special as detailed) all to be made of (white pine or .....).

(3) Metal moldings shall be of (stainless steel, chromium plated metal, solid aluminum, brass, copper, bronze, or black with polished or satin velvet finish, or .....).

INSTALLATION

8. Installation—General

a. This contractor shall consult and cooperate with trades whose work precedes and follows acoustical installation to permit orderly and expeditious procedure, in executing work of this section of the specification.

b. Acoustical material (insert name) shall be installed over a surface of (state material) by means of (adhesive, nails, screws, or mechanical suspension system). Square edge tile shall have metal or fiber splines inserted in kerfs to keep faces flush.

9. Preparation

a. Plaster Surfaces

(1) New plaster. Apply acoustical material direct to dry and thoroughly seasoned brown coat.

(2) Treat white coat finish with zinc sulphate (or prime with one coat of Armstrong's Wall Size).

(3) Old plaster. Remove previous coverings (such as paper or burlap).

(4) Unpainted. Unpainted plaster which is sound and firm may receive acoustical material without other preparations. Surfaces which are porous or dusty shall be treated with Armstrong's Wall Size.

(5) Painted. Test painted surfaces for soundness under action of acoustic cement. If the paint does not soften in 48 hrs., apply acoustical material directly to the surfaces. If paint is soft it must be thoroughly removed before the application of acoustical materials.

b. Concrete Surfaces

(1) When concrete surfaces are thoroughly dry wash with zinc sulphate solution and apply high quality spar varnish after ceiling has dried.

(2) If concrete forms have been oiled, thoroughly remove oil from concrete by scrubbing with washing soda, rinsing, and then treating with zinc sulphate and spar varnish.

10. Cementing (Cushiontone and Cushiontone F, Travertone, and Corkoustic)

a. Erect acoustical material with Armstrong's Acoustic Cement. Spot-cement back of tiles and apply tiles to the base, sliding them back and forth about one inch to spread the adhesive. Apply adhesive in spots of even thickness in order to insure leveling of the tile.

11. Nailing (Cushiontone)

a. Apply building paper to furring.

b. Erect acoustical tiles direct to wood furring by the use of flat-head needle-pointed (or collar) nails in one of the shallow holes in each corner of every 12″ x 12″ unit. Unperforated tile shall be toe-nailed at the edge and the nails countersunk with the holes concealed (or touched up).

12. Screw Installation (Cushiontone)

a. Apply building paper to furring.

b. Install Cushiontone to wood furring strips with No. 3 (⅛″ longer than thickness of tile) round or oval head wood screws in one of the shallow holes in each corner of every 12″ x 12″ unit.

13. Mechanical Installation

a. Arrestone

(1) Arrestone shall be installed on a mechanical suspension system consisting of T bars, clipped to 1½″ plasterer's channels supported from the ceiling construction above by means of flat bar hangers in accordance with the manufacturer's instructions. T bars shall be not over 2 feet apart and channels not over 4 feet apart.

(2) Arrestone shall be installed by suspending the T bars directly from the ceiling construction on flat bar hangers at 4-foot intervals, the T's being spaced 2 feet apart.

(3) Arrestone shall be applied to T bars directly attached to furring strips or to the ceiling construction.

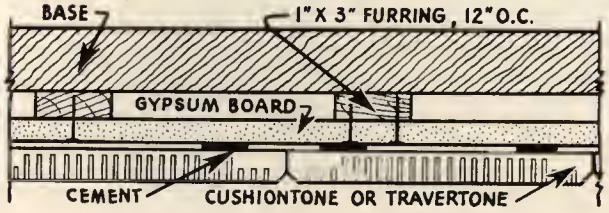
14. Painting

a. The finished installation shall be cleaned and all abraded spots touched up to form a satisfactory installation.

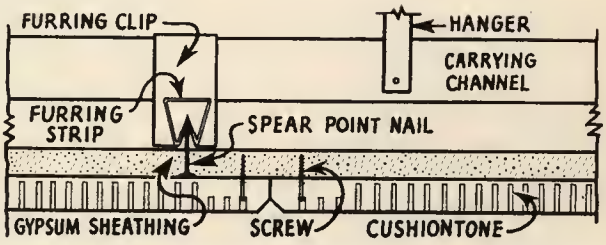
15. Guarantee

This contractor shall guarantee that all work executed under this section of the specification will be free from defects of materials and workmanship, provided any such defect is brought to the attention of the contractor in writing within one year after completion of the work. On such notice, the contractor shall, at his own expense, make the necessary repairs or replacements of the defective work in question. The owner shall be responsible only for the removal and replacement of fixtures or other equipment which may interfere with the work to be done.

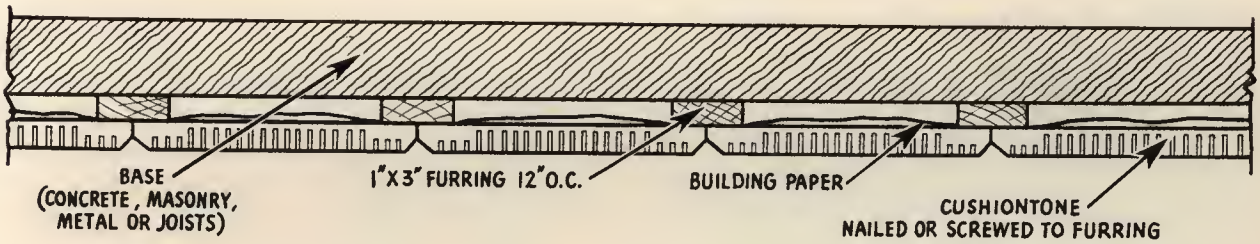
INSTALLATION DETAILS



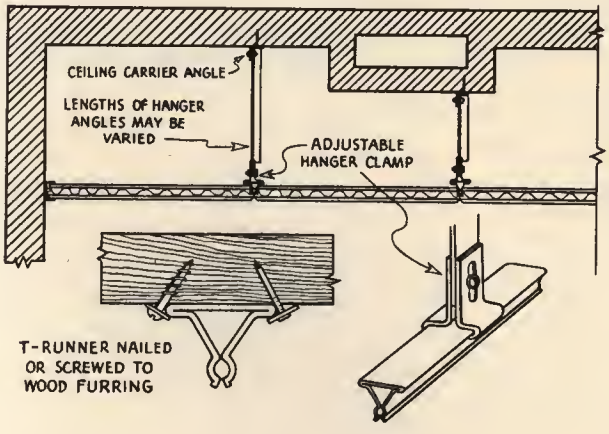
Cement application over furring. When the base surface (masonry, rough plaster, rough concrete, or open joists) does not provide a satisfactory base for cement application, a recommended method is to install 1"x3" cross furring, 12" o.c., and cover with gypsum board or lath. This provides a sound base for cementing.

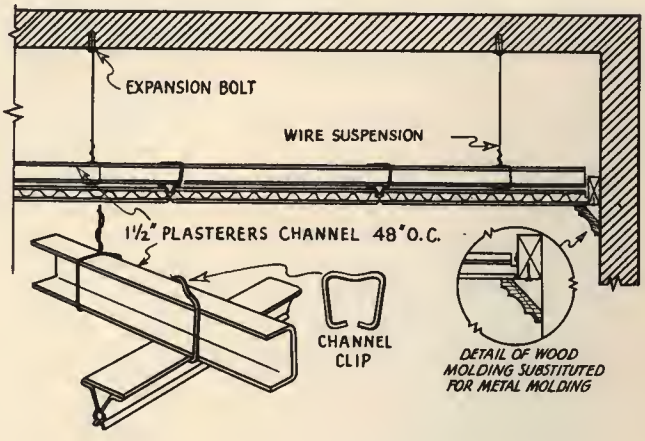


Mechanical installation of Cushiontone. There are several mechanical suspension systems which can be used for application of Cushiontone. The diagram above shows one recommended method. Metal carrying channels and furring strips support a surface of gypsum sheathing. Cushiontone is screwed to this surface.



Application of Cushiontone to wood furring by nails or screws. By the use of cross furring 12" o.c., Cushiontone may be applied by nailing or screwing, in spite of an unsatisfactory base surface. When this method is used, it is important to cover the furring with a layer of building paper to prevent "breathing" at the joints.





Mechanical suspension of Arrestone. The metal T-runners, to which the Arrestone metal pans are clamped, may be nailed or screwed directly to wood, or suspended from metal hanger angles, as shown above at left. Another method, shown at right, calls for wire suspension of channels, to which the T-runners are clipped 24" o.c.

ARMSTRONG'S BUILDING MATERIALS

ACOUSTICAL MATERIALS

Cushiontone®
Arrestone®
Travertone*
Corkoustic®

INSULATIONS

Low Temperature

(See Sweet's File, Architectural, section 10b)
Corkboard
Cork Pipe Covering
Foamglas**
Mineral Wool Board
Fiberglas***

HEAT

85% Magnesia High Temperature Insulation
Air-cell Other Heat Insulation Materials

HIGH TEMPERATURE

Insulating Refractories

COMFORT

Corkboard and Temlok Roof Insulation (See Sweet's File 10a)
Temlok Lath
Temlok Sheathing
Armstrong's Insulating Wool (a Fiberglas product)

WALL AND CEILING MATERIALS

Temlok®
Monowall®
Linowall®

RESILIENT FLOORINGS AND WALLS

(See Sweet's File 13e)
Asphalt Tile
Standard
Industrial
Greaseproof
Conductive

Linotile®
Rubber Tile
Cork Tile
Linoleum

Detailed information about any of these products and their application may be obtained promptly from Armstrong Cork Company, Building Materials Division, Architects' Service Bureau, Lancaster, Pennsylvania.

®Pittsburgh Corning Corp. *®Owens-Corning Fiberglas Corp.
*Trade-mark for which registration has been applied.

ARMSTRONG OFFICES

Albany 5
64 Northern Boulevard
Atlanta
727 W. Peachtree Street, N.E.
Baltimore 2
114 South Street
Birmingham 3
501 American Life Building
Boston 16
131 Clarendon Street
Buffalo 2
822 Genesee Building
Charlotte 2
508 Johnston Building
Chicago 54
13th Floor Merchandise Mart
Cincinnati 2
138 East Court Street
Cleveland 15
209 Hanna Building Annex
Cor. Prospect Ave. and E. 14th St.
Columbus 12
1282 Edgehill Road
Dallas 1
Ervay St. and Patterson Avenue
Denver 2
510 Interstate Trust Building
Detroit 26
Free Press Building
321 Lafayette Avenue, West
Hartford 5
8 Hurlburt Street
Houston 2
841–844 Electric Bldg.
Fannin and Walker Streets
Indianapolis 2
1120 Central Avenue
Jacksonville 4
1277 Houston Street
Kansas City 6
Twenty W. Ninth Street Building
Los Angeles 15
719 Bendix Building
Louisville 2
221 Heyburn Building
Memphis 3
201 Washington Avenue
Milwaukee 4
1102 W. Bruce Street
Minneapolis 2
511 Plymouth Bldg.
Sixth Street & Hennepin Ave.
New Orleans 12
928 Tchoupitoulas Street
New York 16
295 Fifth Avenue
Omaha 2
309 Patterson Building
305 South 17th Street
Philadelphia 6
Public Ledger Building
6th and Chestnut Streets
Pittsburgh 22
24th Street and Allegheny River
Providence 3
1525 Industrial Trust Building
111 Westminster Street
Richmond 20
1615 West Broad Street
Rochester 4
217 East Avenue
St. Louis 3
1205 Olive Street
Salt Lake City 1
225 Kearns Bldg.
136 S. Main Street
San Francisco 3
Western Merchandise Mart
1355 Market Street
Seattle 1
1932 First Avenue
Tulsa 3
219 East Archer Street
Washington 6, D. C.
1713 K Street, N. W.

ARMSTRONG CORK COMPANY

Acoustical Department **Building Materials Division**
Lancaster, Pennsylvania

CELOTEX

REG. U. S. PAT. OFF.

Acoustical Materials

ACOUSTI·CELOTEX

Reg. U. S. Pat. Off. Trade Mark

Sound Conditioning

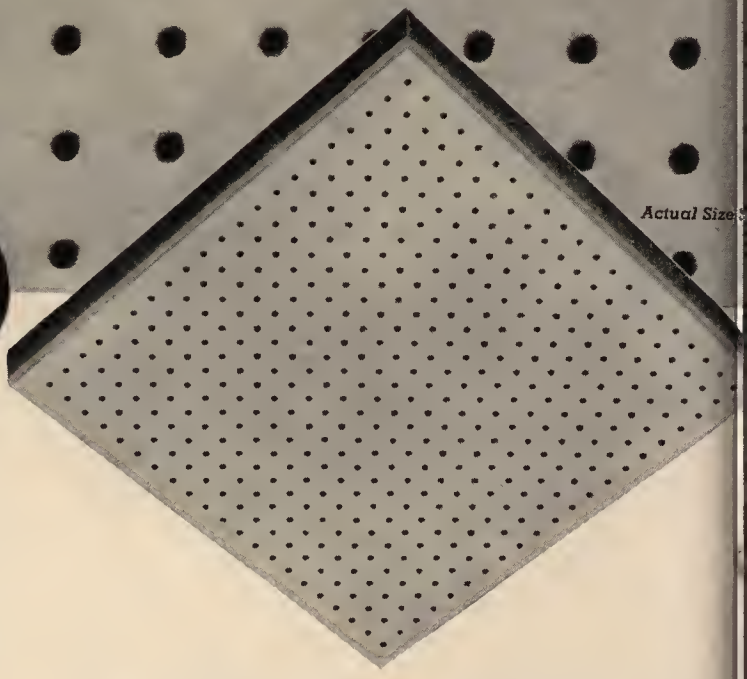
PRODUCTS FOR EVERY SOUND CONDITIONING PROBLEM

THE CELOTEX CORPORATION

Chicago 3, Illinois

ACOUSTI-CELOTEX CANE FIBRE TILE

REG. U.S. PAT. OFF.



Actual Size

Acousti-Celotex ("C" series) is a rigid, lightweight tile made from *bagasse*, the tough fibre of sugar cane. Bagasse fibres are unusually long, strong, and resilient and are highly resistant to deterioration. Their unique serrations cause the fibres to cling tightly together, producing an exceptionally strong tile. In the completed tile, there are countless minute interstices between the fibres; these tiny voids, exposed by perforations, give cane fibre tile its high sound-absorbing quality.

SOUND ABSORPTION—Amount of sound-absorption varies according to (1) thickness of the tile, (2) method of application, and (3) frequency or pitch of sound. Acousti-Celotex Cane Fibre Tile provides Noise Reduction Coefficients of .50 to .75. (See table on page 7.)

THERMAL CONDUCTIVITY—The thermal conductivity of C-Series Acousti-Celotex tile is 0.33 Btu per hour, per square foot, per degree F., per inch thickness.

MOISTURE RESISTANCE—During the manufacturing process the cane fibres are integrally coated by a chemical treatment which makes them highly moisture-resistant. Only in rooms where conditions of excessive humidity prevail is C-Series Acousti-Celotex not recommended.

FEROX* PROCESS—Acousti-Celotex cane fibre tile is effectively protected against termites and dry rot fungi by the exclusive Ferox (patented) process, whereby the individual fibres, before formation into tile, are coated with a chemical complex which is toxic to fungi, termites, and other cellulose destroying organisms. The Ferox treatment presents no hazard to humans or domestic animals, is non-volatile, odorless, permanent, and in no way alters the physical properties of the product.

RODENT AND VERMIN RESISTANCE—Containing no food for rats, mice or other rodents and vermin, C-Series Acousti-Celotex is never attacked by these pests for itself alone. They may gnaw through it where it is a barrier between them and food or water, just as they go through plaster or wood in similar circumstances.

PAINTABILITY—Acousti-Celotex Cane Fibre Tile may be painted repeatedly without impairing its sound-absorption efficiency. The size and spacing of the perforations is such that brushing with paints of usual consistencies does not clog the perforations.

RESISTANCE TO IMPACT AND ABRASIONS—Because of its toughness and resiliency, C-Series Acousti-Celotex is not easily damaged in service. In gymnasiums, where subjected to the impact of indoor baseballs, basketballs, etc., the tile should be placed directly against a solid backing such as wood or plaster board.

SIZES AND EDGES—Standard sizes: 12" x 12" and 12" x 24". Thicknesses: ½", ¾", 1¼". Beveled edges, butt joint. Type C-8, 1" thick, is 24" x 24", 24" x 48" with beveled edge, tongue and grooved on all four sides. Type C-7, 1" thick, 12" x 24", kerfed for erection on Celotex metal suspension system.

FINISHES

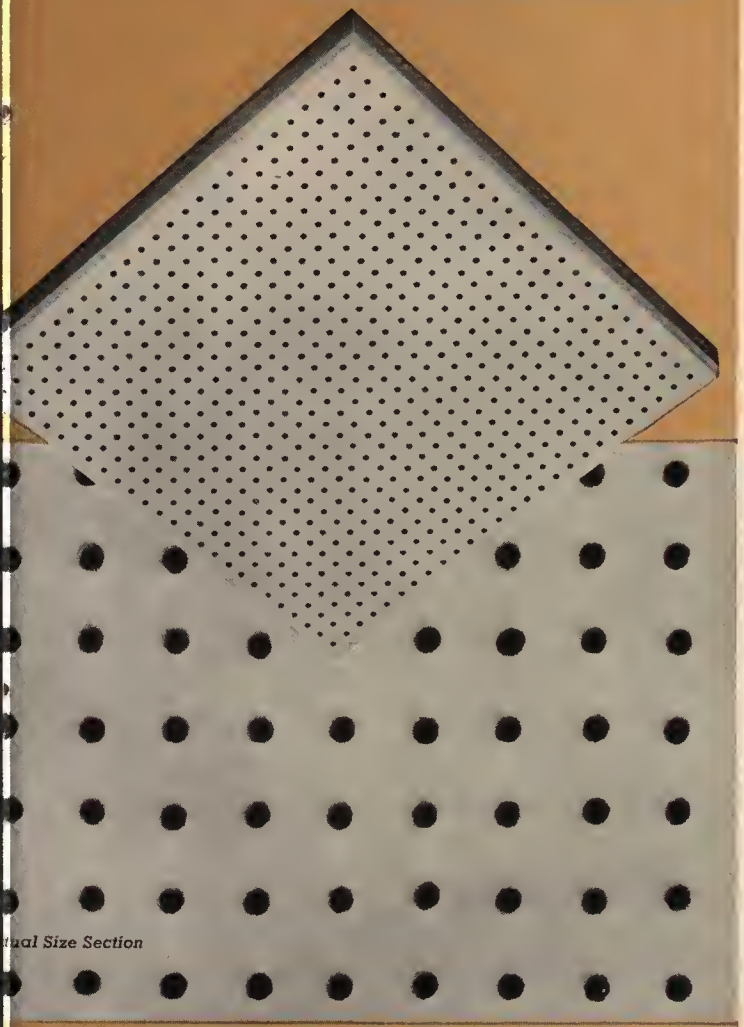
NO. 5 FINISH—A two-coat off-white finish rolled on the surface of the tile during manufacture. A smooth finish suitable for subsequent painting when desired. Light reflection factor, .78.

NO. 2 FINISH—A deluxe oil base flat-white paint coating applied at the factory on a pre-finish base. Slightly textured, providing pleasing appearance and high light reflection factor of .81.

SB FINISH—Factory-applied flame-retardant coating. May be repainted with oil base paint without destroying its flame-retardant qualities. Acousti-Celotex Cane Fibre Tile with SB Finish is rated Slow-Burning.

*Reg. U. S. Pat. Off.

Acousti-Celotex Perforated Mineral Tile



tual Size Section

Acousti-Celotex Fissured Mineral Tile

tual Size Section

ACOUSTI-CELOTEX MINERAL TILE

REG. U. S. PAT. OFF.

Acousti-Celotex Mineral Tile ("M" series) is a highly sound-absorbent tile made of mineral fibres (rock wool) in combination with special binders.

TWO TYPES

PERFORATED MINERAL TILE—Illustrated upper left.

FISSURED MINERAL TILE—Illustrated lower left. Has decorative random fissured surface simulating a travertine texture. Fissures vary in location, size, and depth within each tile.

SOUND ABSORPTION—Depending on type, thickness, and application, Acousti-Celotex Perforated Mineral Tile provides Noise Reduction Coefficients of .65 to .75 (see table on page 7). For sound absorption data on Fissured Mineral Tile, write The Celotex Corporation.

THERMAL CONDUCTIVITY—The thermal conductivity of M-Series Acousti-Celotex is 0.35 Btu per hour, per square foot, per degree F., per inch thickness.

MOISTURE RESISTANCE—During manufacture, the individual fibres are waterproofed by means of a chemical treatment. The finished tile is sufficiently moisture-resistant, with a safe margin, for use under all normal humidity conditions. It is not recommended for use in rooms having abnormally high humidities.

FIRE RESISTANCE—Rated as incombustible.

RODENT AND VERMIN RESISTANCE—Made of mineral fibres, M-Series Tile will not attract rats, mice, other rodents, or vermin.

PAINTABILITY—M-Series Acousti-Celotex may be repeatedly painted with any standard paint without impairing its sound-absorbing efficiency.

RESISTANCE TO IMPACT AND ABRASION—M-Series Acousti-Celotex is not recommended for traffic bearing surfaces as on lower wall areas, or where subjected to impact or abrasion.

SIZES AND EDGES—Standard sizes: 12" x 12". Thicknesses: Perforated Tile, ⅝" and 1". Fissured Tile, ¾". Beveled edges, butt joint.

FINISHES—Acousti-Celotex Mineral Fibre Tile is furnished with a factory applied coat of white paint. It may be repainted with either water or oil base paint, or enamel. Light reflection factor, .80.

Actual Size Section

CELOTEX MUFFLETONE
REG. U. S. PAT. OFF.

Actual Size Section

Celotex Standard Muffletone

Celotex Fissured Muffletone

Celotex Muffletone is a porous cast gypsum tile with a decorative textured surface. It is a rigid, highly sound-absorbent tile. A corrugated backing prevents breathing and provides an excellent bond for adhesives. Celotex Muffletone is adaptable for use in churches, public buildings, and wherever a textured surface is desired to harmonize with special architectural effects.

TWO TYPES

FISSURED—Has random irregular fissures which vary in size and location in each tile.

STANDARD—A fine-textured, non-fissured surface.

SOUND ABSORPTION—Noise reduction coefficient: Fissured, .70; Standard, .65. (See table on page 7.)

FIRE RESISTANCE—Incombustible.

SIZE—12" x 12" x 1" thick. Beveled edges, butt joint.

FINISHES—White or integrally colored ivory.

CELOTEX Q-T DUCTLINER
REG. U. S. PAT. OFF.

Celotex Q-T Ductliner is an acoustical material designed especially for use in absorbing sounds usually transmitted through ventilating and air-conditioning ducts. Composed of rock wool and a special binder, it is made in rigid block form. Will not support combustion. Weight is approximately 1½ lbs. per sq. ft. per 1 in. thickness.

THERMAL CONDUCTIVITY—0.30.

SIZE—24" x 36" in ½" and 1" thicknesses.

tual Size Section

Detail shows:

1. Steel facing.
2. Rock wool pad in flame-proof wrapping.
3. Wire grid.
4. Steel T-bar support.

CELOTEX ACOUSTEEL

REG. U. S. PAT. OFF.

Celotex Acousteel tile units are composed of (1) a perforated 26-gauge steel facing, (2) a pad of sound-absorbing rock wool wrapped in flame-proof paper, (3) a wire grid which provides an air space between facing and pad, and (4) steel T-bar sections which support the assembly. The T-bar provides for mechanical application, holds the unit firmly in place, and permits easy removal and replacement of individual tiles.

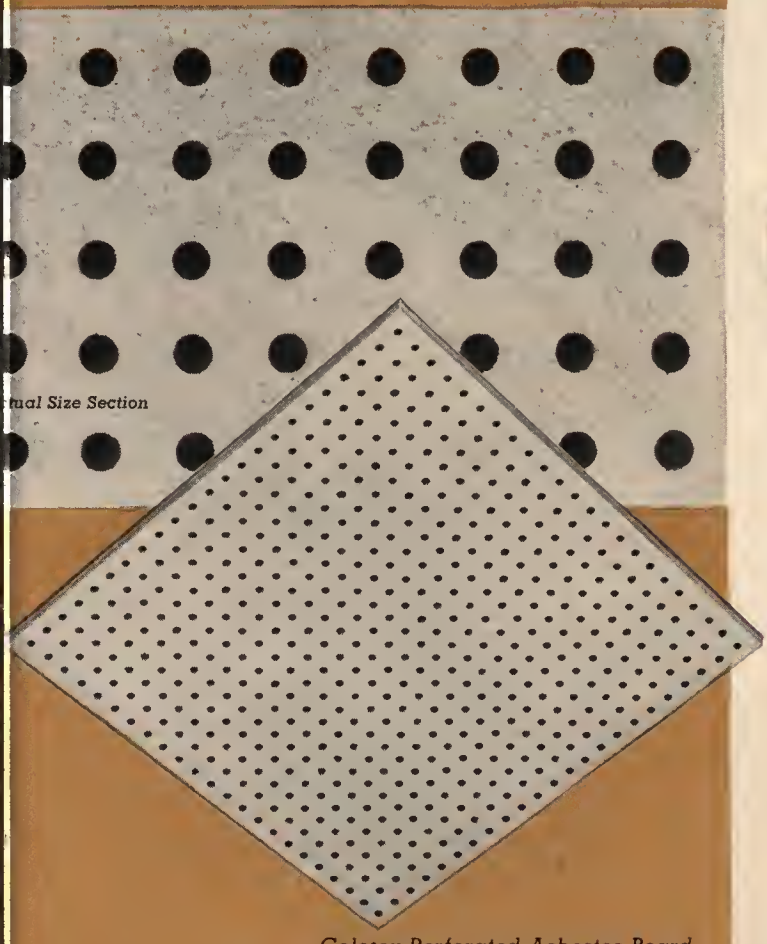
SOUND ABSORPTION—Noise Reduction Coefficient, .85.

FIRE RESISTANCE—Incombustible.

SIZE—12" x 24" with center scoring to represent 12" x 12" tile. Thickness of assembly, 1⅝". Beveled edges.

FINISH—Two coats baked-on white enamel. Washable and paintable. Light reflection factor, .76.

ACOUSTEEL also available in unperforated units for border or other decorative use.



tual Size Section

Celotex Perforated Asbestos Board

CELOTEX PERFORATED PANEL BOARD AND CELOTEX PERFORATED ASBESTOS BOARD

These are sound-transparent facing materials for use in combination with rock wool or other sound-absorbing units where special construction and/or special sound absorption coefficients are required.

PERFORATED PANEL BOARD is a hardboard (wood fibre) product with smooth natural brown finish. **Size:** 12" x 12", 12" x 24", 24" x 24" and 24" x 48". **Thickness:** ⅛". Beveled edges.

PERFORATED ASBESTOS BOARD is a fireproof material made from Portland cement and asbestos fibres. It has a smooth, hard finish, light gray in color. **Size:** 12" x 12", 12" x 24", 24" x 24" and 24" x 48". **Thickness:** 3/16". Edges beveled or cut square. Also obtainable with a trimmed edge for over-all hole pattern.

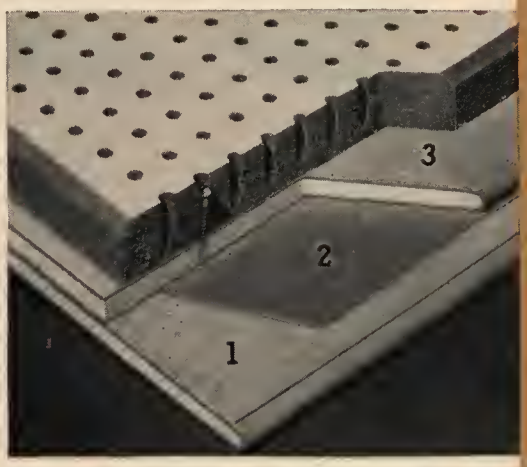
CELOTEX ACOUSTI* LOCK BOARD*

FOR SUSPENDED CEILINGS

Acousti Lock Board is a special screw holding gypsum board assembly. Its screw holding power is provided by means of an extra membrane selected for that purpose, laminated into the assembly. It is 9/16" thick, 96" long by 24" wide and the long edges are ship-lapped. End joints are closed with tightly fitting H-runner clips, or taped, making tight joints over the entire ceiling.

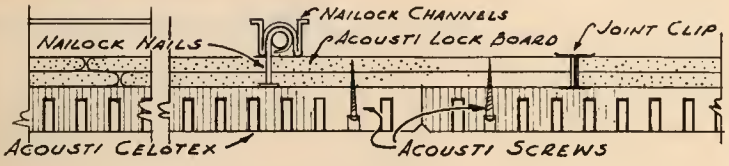
Acousti Lock Board is fire resistant and vermin-proof. Its use permits dry construction with little muss, and the premises can be occupied the moment the work is finished. It makes a substantial, non-breathing ceiling backing and gives a smooth and even surface to which Acousti-Celotex may be attached with screws.

*Trade Marks

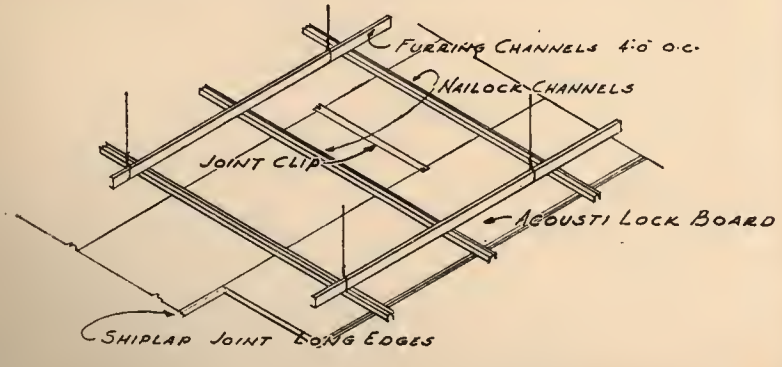


Above: Cut-away section showing Acousti-Celotex screwed to Acousti Lock Board. Note screw holding membrane (2) between layers of board (1 and 3)—and the ship-lapped edges.

Left: The jig, used for driving screws, fits snugly over screw hole and is held firmly in place by guides. Screws are driven quickly and cleanly, without marking tile.



SECTION



HOW TO USE APPLICATION SELECTOR →

The Application Selector and accompanying construction drawings at right present a ready means of choosing the proper material to fit job conditions.

For general sound conditioning where noise reduction is the primary object, the noise reduction coefficient (NRC) in the left hand column is used. This coefficient is the average, to the nearest 5% (established by the Acoustical Materials Association) of coefficients at 256, 512, 1024 and 2048 cycles.

For acoustical correction of auditoriums, churches, lecture halls, etc., where good hearing conditions for speech and music are the primary object, the coefficient of 512 cycles is used.

When the required coefficient has been determined, locate that coefficient in the appropriate column. Reading straight across, all characteristics of the material are given.

The last column indicates construction methods possible with this material to obtain the absorption indicated in the coefficient columns. Complete specifications for these methods may be obtained from your Acousti-Celotex Distributor.

CONSTRUCTION DETAILS

Celotex Acoustical Products are installed by any one of three methods: (1) adhesives, (2) screws or nails, (3) mechanical suspension. Following are POINTS TO NOTE:

Adhesives

Old plaster should be cleaned to eliminate loose or peeling paint, calcimine or cold water paint, grease, etc.

In new construction a sound, level brown coat of plaster provides an acceptable backing.

In the case of Acousti-Celotex Cane and Mineral Tile, supplementary nailing may be used if desired. The Celotex Acoustical Distributor will advise whether this is necessary. He uses only adhesives of proper consistency and proved performance.

Screws or Nails

Acousti-Celotex Cane Tile may be screwed or nailed to wood decks or furring, the screw or nail being countersunk in special perforations provided for that purpose. A special electrically driven screw jig is used for speedy, economical application.

Where application is on furring, a layer of building paper or felt between the tile and the furring will prevent breathing at the joints. This is standard practice with Celotex Acoustical Distributors.

Acousti-Celotex Cane Tile may also be screwed to a rigid insulating board or plywood backing.

Mechanical Suspension

The Celotex Metal Suspension System provides a method for complete ceiling construction. Tile are kerfed to fit onto the supporting metal cross members. Minimum tile thickness 1".

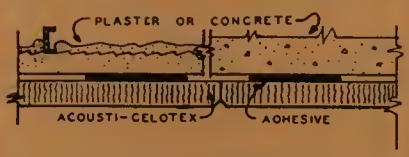
Acousteel (perforated metal tile with sound absorbing rock-wool pads) is installed as a suspended ceiling against 1½" furring channels 4'0" o.c. These tile are removable as desired, providing accessibility to any utilities concealed by the ceiling.

APPLICATION SELECTOR

NRC	SOUND ABSORPTION COEFFICIENTS						PRODUCT	TYPE	THICK.	ADAPTABLE DETAIL (See drawings below)
	128	256	512	1024	2048	4096				
.55	.09	.15	.61	.77	.70	.64	Acousti-Celotex Cane Fibre Tile	CS-1	½"	A, B, C
.55	.10	.24	.63	.61	.63	.63	Acousti-Celotex Cane Fibre Tile	C-1	½"	A, B, C
.65	.11	.23	.80	.93	.58	.50	Acousti-Celotex Cane Fibre Tile	C-9	¾"	A, B, C
.70	.14	.42	.99	.74	.60	.50	Acousti-Celotex Cane Fibre Tile	C-4	1¼"	A, B, C
.70	.15	.34	.99	.94	.61	.61	Acousti-Celotex Cane Fibre Tile	C-6 ¼" Holes	1¼"	A, B, C
.65	.07	.21	.64	.86	.93	.83	Acousti-Celotex Perf. Mineral Tile	M-1	⅝"	A, C
.75	.08	.27	.92	.95	.80	.71	Acousti-Celotex Perf. Mineral Tile	M-2	1"	A, C
.65	.12	.30	.74	.76	.71	.67	Muffletone Cast Gypsum Tile	Standard	1"	A
.70	.09	.29	.83	.97	.77	.71	Muffletone Cast Gypsum Tile	Fissured	1"	A
.60	.14	.46	.52	.71	.72	.64	Acousti-Celotex Cane Fibre Tile	CS-1	½"	D
.70	.12	.45	.79	.89	.61	.60	Acousti-Celotex Cane Fibre Tile	C-9	¾"	D
.75	.25	.58	.99	.75	.58	.50	Acousti-Celotex Cane Fibre Tile	C-4	1¼"	D
.75	.27	.57	.91	.91	.67	.58	Acousti-Celotex Cane Fibre Tile	C-6 ¼" Holes	1¼"	D
.70	.53	.58	.93	.70	.55	.48	Acousti-Celotex Cane Fibre Tile	C-4	1¼"	F (12" x 24" only)
.70	.41	.48	.68	.79	.75	.55	Acousti-Celotex Cane Fibre Tile	C-7	1"	F (12" x 24" only)
.65	.25	.49	.69	.78	.61	.48	Acousti-Celotex Cane Fibre Tile	C-8	1"	D (24" x 24" and 24" x 48")
.75	.40	.44	.79	.99	.77	.71	Acousti-Celotex Perf. Mineral Tile	M-2	1"	F (12" x 24" only)
.65	.25	.66	.71	.71	.55	.49	Acousteel		1⅝"	E (50-50 Perf. and Unperf.)
.85	.25	.52	.99	.99	.81	.60	Acousteel		1⅝"	E (All Perf.)

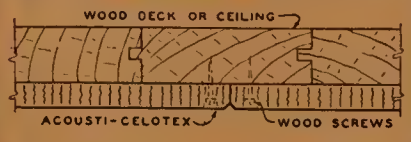
Coefficients listed are AMA Data. Consult The Celotex Corporation for latest data.

DETAIL A AMA MOUNTING NO. 1



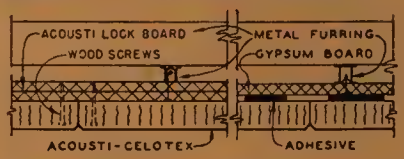
Acousti-Celotex or Muffletone tile cemented direct to concrete slab or plaster surface.

DETAIL B AMA MOUNTING NO. 1



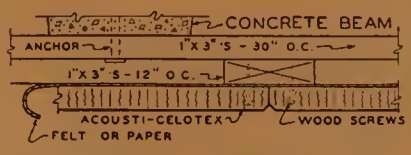
Application of Acousti-Celotex tile to timber or plank construction using wood screws.

DETAIL C AMA MOUNTING NO. 1



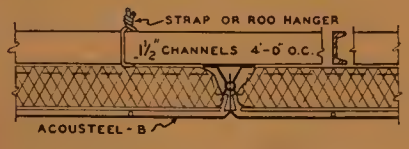
Acousti-Celotex cemented to a suspended gypsum board backing or screwed to suspended Acousti Lock Board.

DETAIL D AMA MOUNTING NO. 2



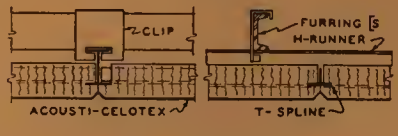
Application of Acousti-Celotex Cane Tile to wood furring. Use of wood screws provides improved anchorage.

DETAIL E AMA MOUNTING NO. 3



Acousteel installed as a suspended ceiling. The T-bars may be applied to other suitable surfaces.

DETAIL F AMA MOUNTING NO. 7



The Acousti-Celotex Metal Suspension System as a means of establishing the entire ceiling construction.

NOTE: Since an efficient acoustical absorbent may also be an efficient thermal insulator, care should be exercised to prevent condensation on the underside of roof decks or slabs. A complete thermal analysis is suggested.

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Jamestown.....Collum Acoustical Co., Inc.
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Brunswick, Regina,
Windsor...Dominion Sound Equipments Ltd.

ACOUSTI-CELOTEX SOUND CONDITIONING SERVICE

Useful knowledge in science grows with practical experience. Such experience in the field of architectural acoustics consists in the number and variety of problems dealt with. To develop this experience rapidly, The Celotex Corporation in 1925 chose to seek out, school, and establish in all principal market centers an authorized engineering, sales, and contract service by independent, locally owned and operated enterprises.

The combination of this merchandising policy with Celotex Acoustical Products rapidly won and has steadily maintained a position of leadership in this industry.

This policy, controlled through territory franchises, has been the means of providing architect and owner dependable engineering and application service. With profits coming only from material sales, The Celotex Corporation has the same interest as architect and owner in seeing fair job prices established and maintained.

The Celotex Corporation is proud of the service ideals which its acoustical distributor organization, no less than its own personnel, have woven into the fabric of this business. Ability in diagnosing acoustical problems, honesty in surveys and recommendations, considerateness as well as promptness in contract application work, and timeless interest in the satisfactory performance of every job—these are what we mean by service ideals. They constitute plus values in every specification for a Celotex Acoustical Product.

THE CELOTEX CORPORATION

120 South LaSalle Street,
Chicago 3,
Illinois

HEERWAGEN

ACOUSTIC DIAPHRAGM TILE

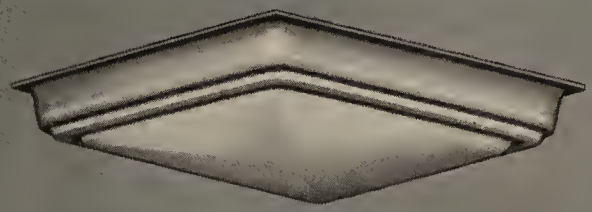
absorption
by diaphragmatic action

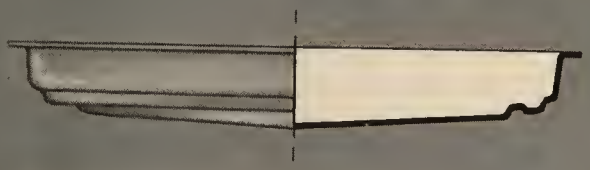
diffusion
by non-symmetrical
movements of diaphragm

liveliness
by combination of both
plus damped air space

ACOUSTIC HEERWAGEN DIAPHRAGM TILE

. . . . absorbs sound by resonant vibration of surface





description

Heerwagen Acoustic Diaphragm Tile is featherweight, a square foot, which is the size of the tile, weighs only 3 oz. The color is the blended Caen Stone and the tile is fireproof as tested by the Columbia University. This acoustical tile is based on the diaphragmatic principle of sound control and each tile is a synthetic ear.

features

High Absorption — Low Frequencies — At 128 frequency Heerwagen Acoustic Diaphragm Tile have a coefficient of .62. At 256 frequency the coefficient is .75. Check these coefficients at these important low frequencies with other acoustical materials.

Diffusion — Due to non-symmetrical movements of the diaphragm of Heerwagen Acoustic Diaphragm Tile sound waves are minutely diffused. Diffusion of sound is just as important as absorption in sound control.

Diaphragmatic — Heerwagen Acoustic Diaphragm Tile absorbs sound by resonant vibration of their diaphragmatic surfaces. The high frequencies are scattered and diffused by the type of surface while the lower frequencies are variably dispersed because of the unequal resonant absorption peaks at several frequency intervals.

Trapped — Air Space — Air is the finest purifier of sound. Behind each Heerwagen Acoustic Diaphragm Tile is slightly more than one tenth of a cubic foot of trapped or damped air.

Liveliness — Heerwagen Acoustic Diaphragm Tile do not deaden an interior but create just the opposite — an alive natural tone interior both for music and speech. Neither will there be any fluttering at high frequencies with this tile.

Decorative — Heerwagen Acoustic Diaphragm Tile are a much appreciated relief from the institutional look of other acoustic materials. They add quite a distinctive decorative touch. The color of Heerwagen Acoustic Diaphragm Tile is a Caen Stone color and harmonizes with any color design. However this tile can be tinted any desired color.

Low Maintenance — Heerwagen Acoustic Diaphragm Tile have a low maintenance cost. Can be easily cleaned, we recommend using a vacuum cleaner. In the course of time can be refinished with our special Acoustical Paint which will not impair the acoustical properties. Most acoustical tile are markedly damaged acoustically by improper painting.

Psychological Effects — Ease of listening as well as ease of talking created by Heerwagen Acoustic Diaphragm Tile—not deadening lifeless interiors—produce highly desired psychological reactions.

applications

Any flat surface, such as plaster, plaster board, wall board, wood or concrete afford a good base for the application of Heerwagen Acoustic Diaphragm Tile.

It is necessary to have solid surface for this diaphragmatic tile due to trapped air space behind each tile.

Installation is made with our special adhesive — no tacks, staples or patented fasteners required.

Adaptable to all climatic conditions of humidity, dryness, heat and cold.

You can not over-correct with Heerwagen Acoustic Diaphragm Tile, nor will there be any dead areas or fluttering in the extreme high frequencies.

tests and practice

Dr. Paul E. Sabine, Riverbank Laboratories, made the absorption tests illustrated in the graph below. Note the high absorptive coefficient at 128 and 256 frequencies — compare these tests with all other acoustical materials.

Dr. L. B. Ham, Volume II of Journal of the Acoustical Society of America, January, 1940, sets out the non-symmetrical movements of the diaphragm surface of Heerwagen Acoustic Diaphragm Tile. These non-symmetrical movements give this tile outstanding diffusion qualities.

Bell Telephone Laboratories tests show that Heerwagen Acoustic Diaphragm Tile have variable coefficients depending on the sound. This adaptability of variable reverberation time to either the speaking voice or music creates the ideal acoustical effect in interiors.

Electrical Testing Laboratories tests show that Heerwagen Acoustic Diaphragm Tile have a high light reflection factor, 0.715.

Columbia University tests show under duration of flame seconds, none, and glow seconds, none.

University of Arkansas tests show that Heerwagen Acoustic Diaphragm Tile have some insulation qualities, adding 16.3 to insulation of an interior.

Speakers, performers and musicians all comment on the ease and naturalness of speaking and singing in interiors treated with Heerwagen Acoustic Diaphragm Tile.

simplicity of application

Any flat surface, such as plaster, plaster board, wall board, wood or concrete afford an acceptable base for the installation of Heerwagen Acoustic Diaphragm Tile.

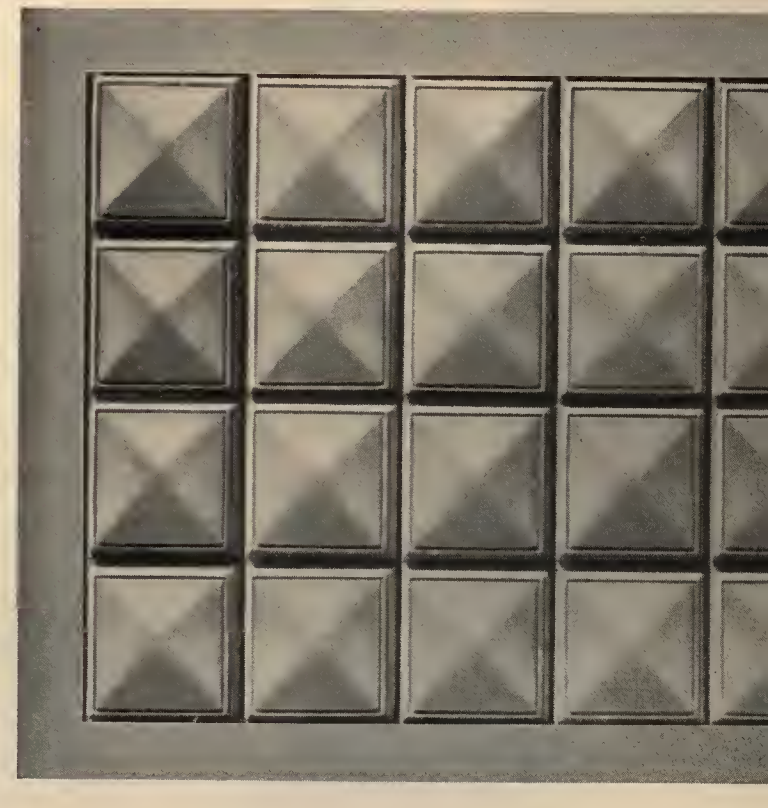
1. Ceiling and walls are first lined off in 12" squares.

2. Adhesive placed on underside of flange of tile using the installation frame to hold tile while adhesive is being applied. Then frame and tile are pressed against ceiling or walls, frame is removed leaving tile in place.

3. Joints and cracks are sealed and covered up with pointing-up compound by applying with small brush.

specifications

Heerwagen Acoustic Diaphragm Tile to be installed in accordance with manufacturer's directions. Use sufficient adhesive; should any ooze out at edges and appear unsightly, the pointing-up compound will cover up the adhesive. The pointing-up compound dries out the same color as tile — Caen Stone. Drop down ¾" on wall to start first row of tile to allow joint with adjoining ceiling tile. Heerwagen Acoustic Diaphragm Tile come finished and do not require painting when installed.



Ideal for broadcast studio sound control

Broadcasting stations appreciate th
clarity and high fidelity produced
studios with Heerwagen Acoustic T
Regardless of the music group, th
is no feed back from the low fre
cies, nor fluttering from the ex
high frequencies.

Heerwagen Acoustic Diaphra
does for the radio studio and
room just what the diaphragm
for the loud speaker.

One chief engineer wrote,

> "Many musicians and other artists have made it a point to tell us how well they like to perform in these studios."

installations in broadcast studios from coast to coast

Arkonsos
KARK
KELD
KFFA
KFSA
KGRH
KRKN
KUOA
KXAR

Califfornio
KGER

Canodo
CHNS
CKCL

Colorado
KRDO

Florida
WEAR

Illinois
WCFL
WJBC

Iowo
KSTT
WMT

Konsos
KVGB

Louisiono
KCIL
KROF
WJBO

Michigon
WLDM

Mississippi
WLOX

Missouri
KCMO
KDMO
WMBH

Montono
KGEZ
KOJM

New York
WJTN

North Corolino
WBBB
WMLS

North Dokota
KFGO
WDAY

Ohio
WLW

Oklahoma
KBYE
KTUL

Oregon
KUIN

Pennsylvonio
WIP

Tennessee
WHBQ
WMAK

Texos
KCNC
KCTX

Texos (Cont.)
KFJZ
KHUX
KMAC
KMHT
KNOW
KONO
KPET
KRJG
KRRV
KTEM
KWBU
WRR

Wisconsin
WCLO
WKOW

engineering service and information

We are gladly at your service with your acoustical problems. Our acoustical physicist, designers and acoustical consultants will be only too glad to work with you, for in the main our interest is that your installation of Heerwagen Acoustic Diaphragm Tile be perfection.

HEERWAGEN
ACOUSTIC DECORATION COMPANY

Factory
Fayetteville, Arkansas

Offices
Los Angeles, California
Memphis, Tennessee

Johns-Manville

SOUND control

noise quieting

acoustical correction

vibration isolation

RESPONSIBLE INSTALLATION

FOR best results Johns-Manville acoustical materials are installed only by Johns-Manville's own construction department or by J-M Approved Acoustical Contractors. Trained construction crews, under the supervision of competent acoustical engineers, insure that your project will receive the maximum in noise quieting benefits.

Whether large or small, simple or complex, every J-M acoustical project receives this same careful and painstaking responsibility. Johns-Manville maintains a staff of acoustical engineers in the principal cities who are prepared to make analyses of acoustical problems in buildings of all types and give specific recommendations. Their services are available without cost or obligation. When you use J-M Acoustical Materials you not only get quality products but also a workmanlike and competently engineered job.

Copyright 1948 Johns-Manville

Johns-Manville
PIONEER IN SOUND CONTROL

FOR the past 35 years, Johns-Manville has pioneered the development of acoustical materials and their proper method of application. J-M is, therefore, able to provide a scientifically correct solution to virtually any problem involving control of sound.

As a result of years of research and experience, Johns-Manville has developed several types of acoustical materials, each eminently adapted for specific conditions. Outstanding among them are J-M Sanacoustic Units, J-M Transite Panels and Units, and J-M Fibretone.

J-M SANACOUSTIC* UNITS: A perforated metal panel backed up with a sound-absorbing element. Desirable for offices because of its low maintenance cost, good light reflection and non-combustibility. Highly recommended for hospitals because it is easily kept clean.

J-M TRANSITE* PANELS AND UNITS: A perforated asbestos-cement facing backed with a sound-absorbing element. Recommended for kitchens, utility rooms, swimming pools, dishwashing rooms, and any place where excessive moisture is also a problem. It is the standard acoustical product for use in broadcasting studios. Non-combustible, easily maintained, withstands severe impacts.

J-M FIBRETONE UNITS: A drilled fibreboard unit. Fibretone is a low-cost acoustical product for modest budgets. As with all perforated acoustical products it can be painted and repainted without reducing its efficiency. Because of its comparatively low cost and ease of maintenance, it has a wide usage in schools, institutions, restaurants, banks, factory offices, bowling alleys, court houses, etc.

Johns-Manville Studio Control

Studio control includes both sound isolation and acoustical treatment. The isolation is necessary to prevent extraneous noise from entering the studio areas and to isolate against rehearsal programs in adjoining studios. The acoustical materials consist of perforated Transite panels backed with special sound-absorbing elements developed for the broadcasting field. The acoustical materials must provide absorption characteristics to the studio that will retain fidelity of the broadcast. They must be strong and durable to withstand wear and tear when installed on the wall surfaces.

Johns-Manville Unit Construction

To meet the basic requirement for flexibility in modern building construction, J-M Sanacoustic Units are often combined with J-M Transite Movable Walls, and J-M Asphalt Tile Flooring to provide room or building interiors. Because Sanacoustic units are demountable and the Transite Walls easily dismantled and re-erected, and because Asphalt Tile Floors permit alteration and expansion of floor areas, the use of these three products in Unit Construction is an ideal solution to the problem of meeting changing space requirements.

*Reg. U. S. Pat. Off.

MEMBER OF

ACOUSTICAL MATERIALS ASSOCIATION

JOHNS-MANVILLE SANACOUSTIC UNITS

Sanacoustic Units on ceiling of this modern office are attractive as well as acoustically efficient

Description: Johns-Manville Sanacoustic Units consist of perforated metal with a baked enamel finish containing a rock wool pad of predetermined thickness and density which serves as a highly efficient sound absorbing medium. The units are held in place by special tee bars. For sizes, finishes and test data see pages 14 and 15.

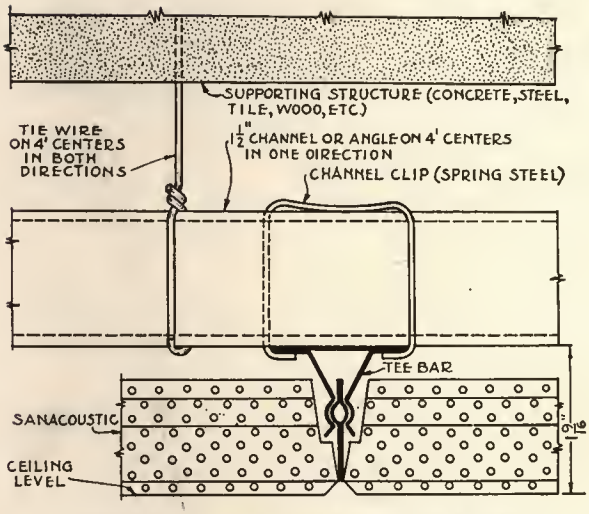
Advantages: Sanacoustic Units combine exceptionally high sound absorbing qualities with a high coefficient of light reflection.

Composed of metal, rock wool and asbestos, these units will not burn, rot or disintegrate. They may be washed repeatedly without injury to the finish or painted without loss of sound-absorbing efficiency. Their baked enamel finish permits them to be kept clean and sanitary at minimum maintenance cost. They are particularly fitted for use in hospitals, schools, offices, stores, public lobbies, restaurants and many other locations where a durable, attractive, easy to clean acoustical material is required.

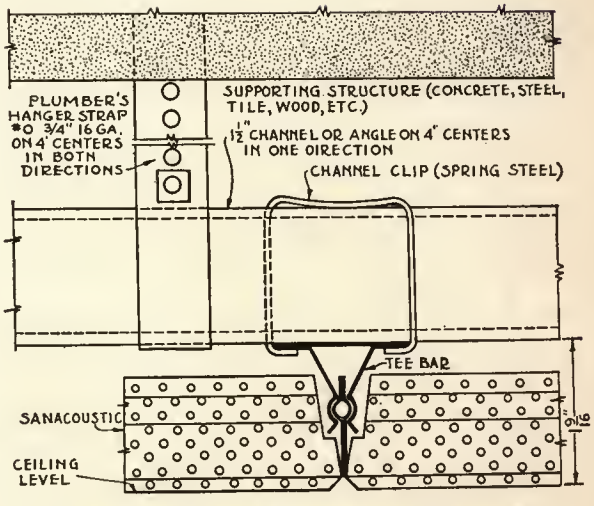
Application: Sanacoustic Units may be applied to existing ceilings or hung as a suspended ceiling from furring channels as shown in sketches on the opposite page. In either case the Units are snapped into tee bars that are mechanically fastened to the surface to be treated. This method of installation assures perfect alignment and also permits any part of the ceiling to be taken down and relocated without loss of materials.

JOHNS-MANVILLE SANACOUSTIC UNITS

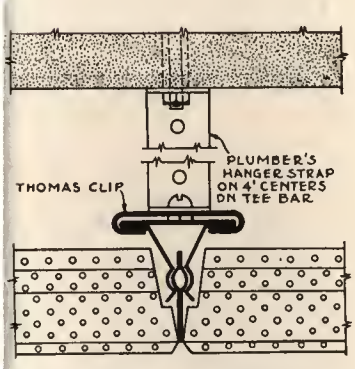
CONSTRUCTION DETAILS



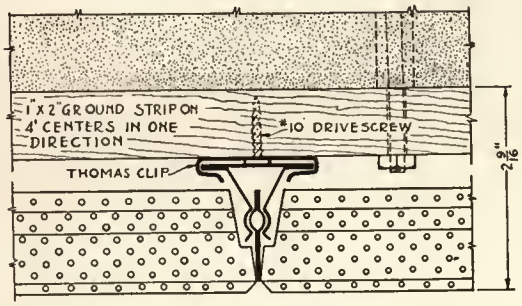
Attached to channels suspended by tie wires



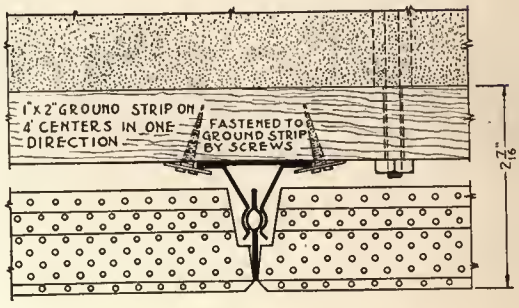
Attached to channels suspended by straps



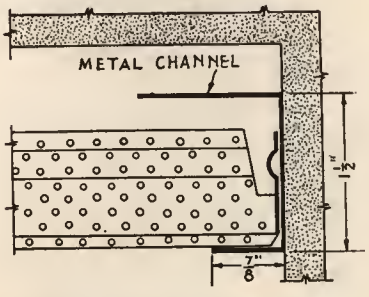
Tee bars suspended by Thomas clips and straps



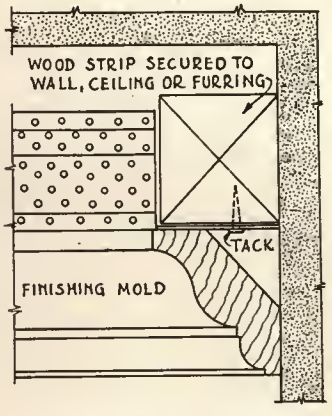
Tee bars attached to grounds by Thomas clips and drive screws



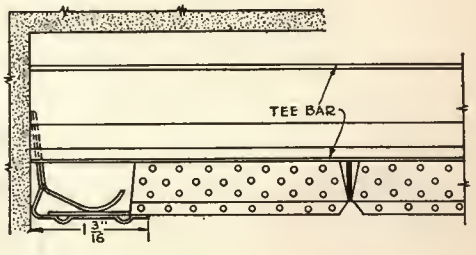
Tee bars fastened to grounds by wood screws



Metal channel supports Units at wall and acts as moulding



Typical installation with wood moulding



Typical installation with metal edge moulding

J-M SANACOUSTIC UNITS WITH FLUORESCENT LIGHTING

Fluorescent troffers may be spaced in Sanacoustic ceiling to give desired lighting results

Description: An exclusive Johns-Manville patented construction system makes possible the interchangeability of flush type fluorescent lighting with J-M Sanacoustic ceiling units. The fluorescent troffers are held in place by the same tee bars that support the acoustical units and they may be installed or easily relocated to provide the lighting results desired by the architect.

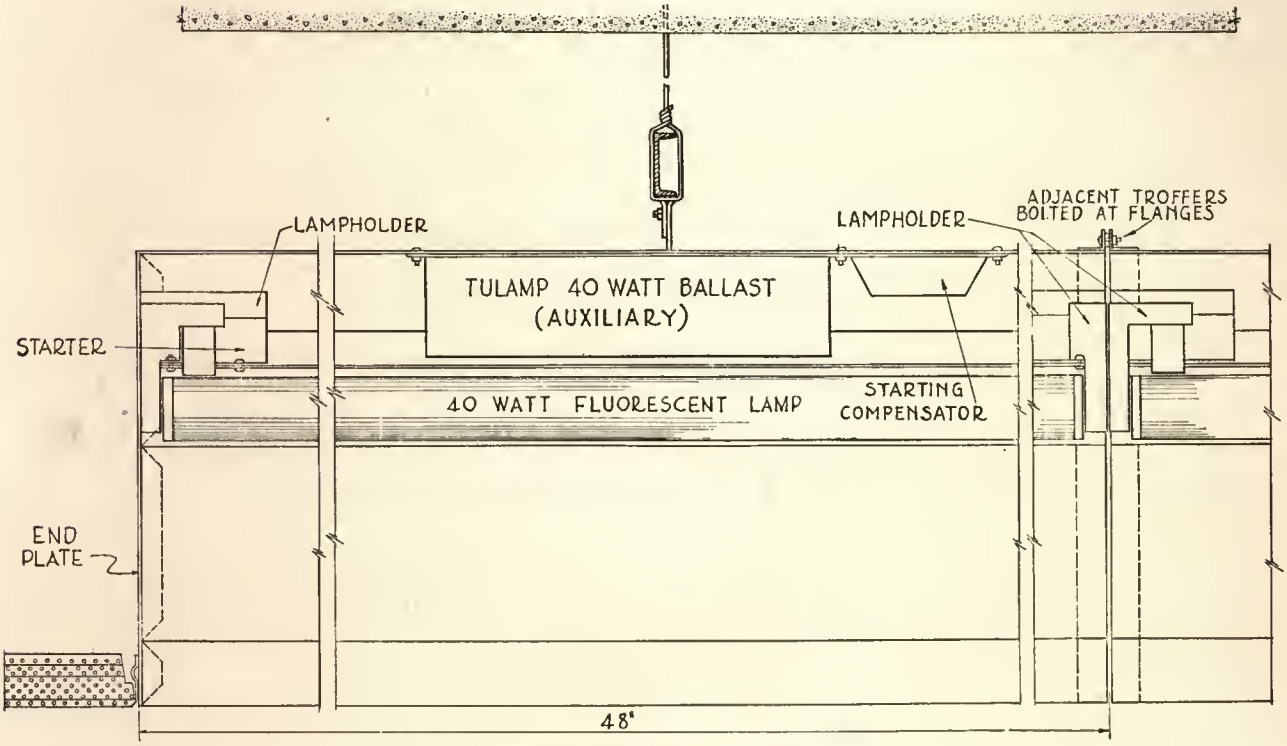
Advantages: Sanacoustic Units with fluorescent troffers combine two important developments for modern interiors—good lighting and efficient sound control. Moreover, the design and construction methods employed permit interchangeability of the units; give complete flexibility in arrangement; and permit ready accessibility to wiring or any portion of the installation.

Application: Metal tee bars are first secured in the same manner as shown on page 5. The troffers are then located and snapped into place as shown in drawings on opposite page. Sanacoustic Units are then inserted into the tee bars to complete the installation.

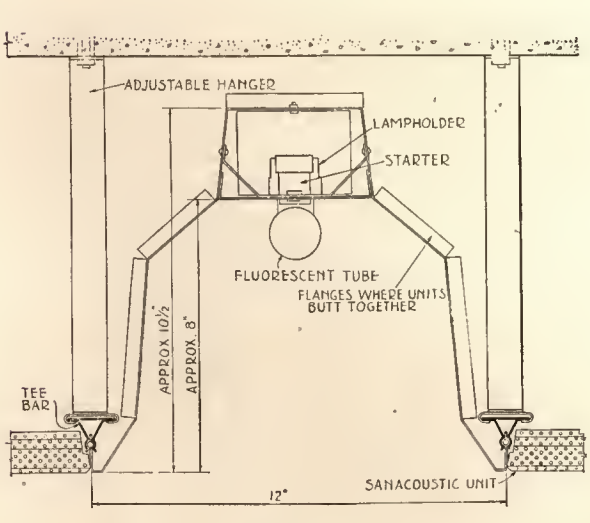
Fluorescent troffers may also be installed in a continuous pattern depending on the lighting and architectural effect required

J-M SANACOUSTIC UNITS WITH FLUORESCENT LIGHTING

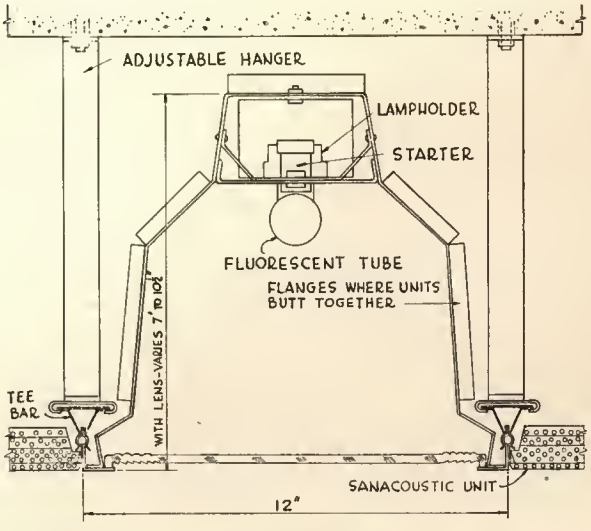
CONSTRUCTION DETAILS



Longitudinal section of fluorescent troffer



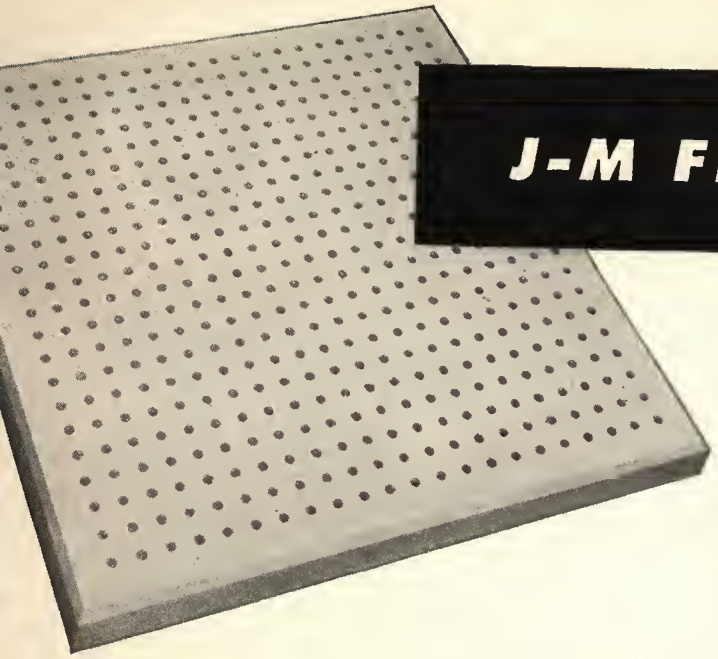
Open type



With Holophane lens

Cross sections of fluorescent troffers showing details of tee bar supports

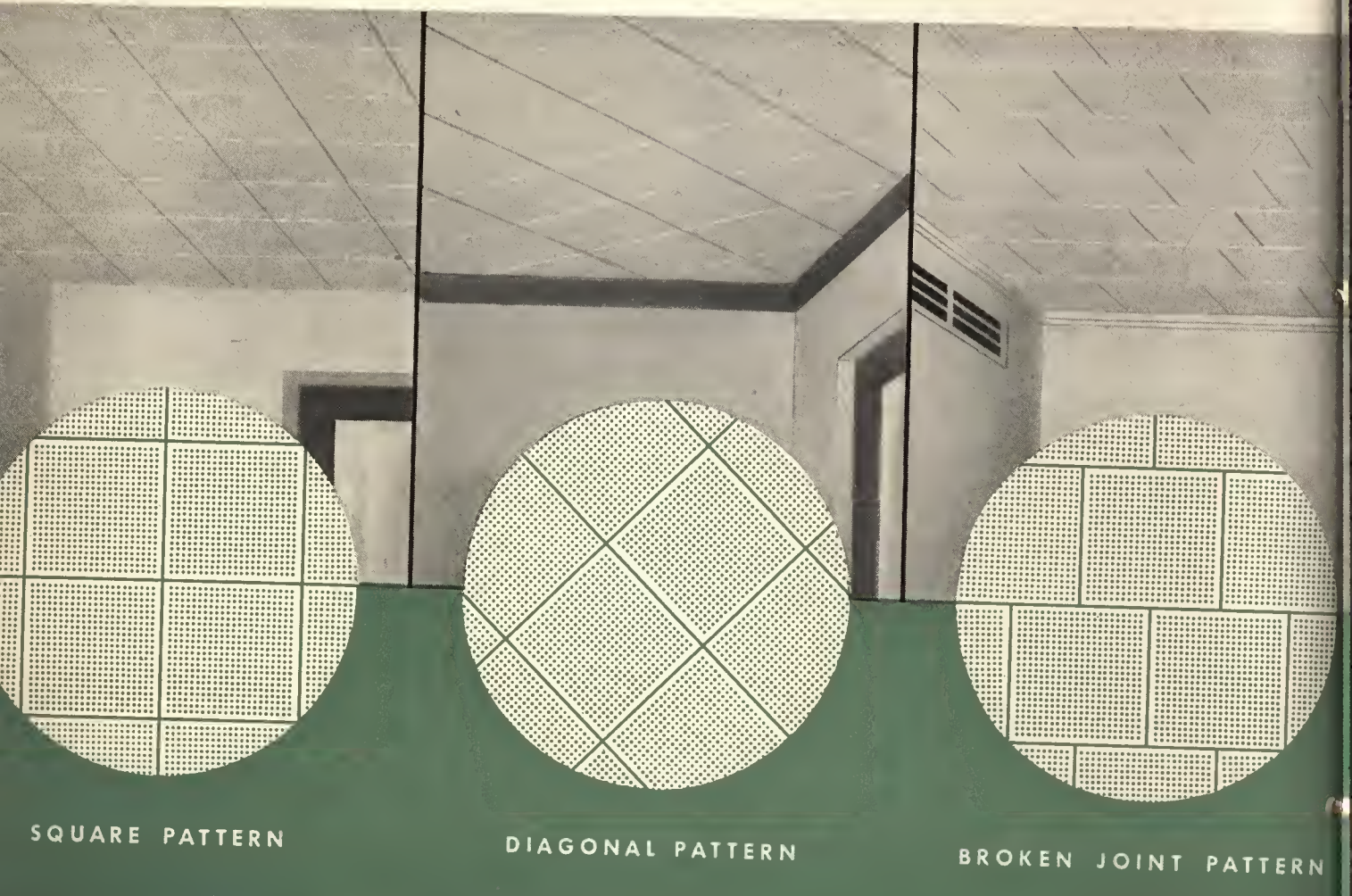
J-M FIBRETONE—THE QUIE



Each Fibretone panel is an attractive beveled unit 12" square containing 484 drilled holes

Description: The development of Fibretone Acoustical Units by Johns-Manville is based on more than 30 years of research and experience in the manufacture of acoustical products. From Johns-Manville's own pine forests in Virginia and Mississippi come the selected wood fibers from which Fibretone is made. By controlling each step, from raw material to finished Fibretone Unit, J-M is able to insure quality and at the same time effect important economies in the manufacture of this outstanding acoustical product.

Like all Johns-Manville acoustical materials, Fibretone is scientifically designed to effectively quiet unnecessary noise. It is manufactured in the form of attractive beveled units, 12" square. Drilled holes extend into the Fibretone unit to increase its sound absorbing effectiveness. Sound waves, as they strike the unit, enter the holes where the sound energy is dissi-

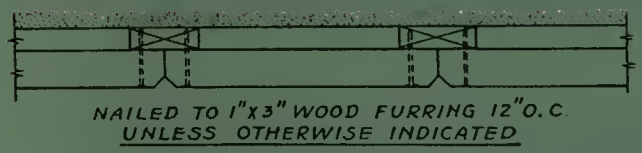


SQUARE PATTERN

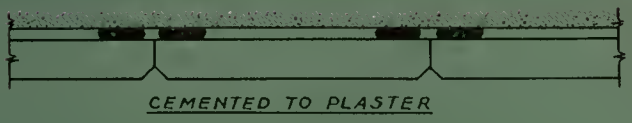
DIAGONAL PATTERN

BROKEN JOINT PATTERN

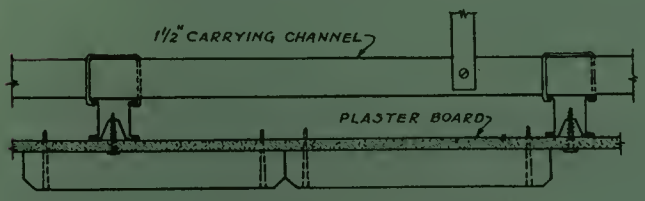
CEILING WITH 100,000 NOISE TRAPS



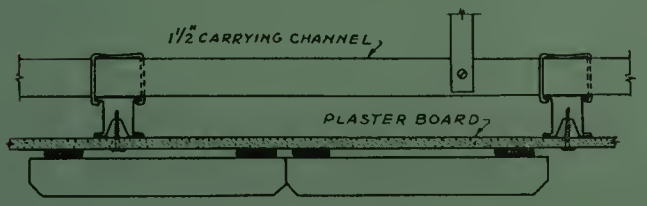
NAILED TO 1"X3" WOOD FURRING 12"O.C.
UNLESS OTHERWISE INDICATED



CEMENTED TO PLASTER



MECHANICALLY FASTENED TO PLASTER BOARD
SUSPENDED BY METAL FURRING



CEMENTED TO PLASTER BOARD
SUSPENDED BY METAL FURRING

Illustrated above are four installation methods that are commonly required or specified. As drawings show, it is equally simple to apply Fibretone on new construction or to existing ceiling areas. Special construction problems should be discussed with the J-M Sales Representative. On the back cover are listed the J-M Regional Offices, where trained acoustical engineers are available, at no obligation, to help you in solving any noise quieting problem you may have.

pated. Because the average ceiling, 15′ by 15′, contains 108,900 of these holes, Fibretone is called the "ceiling with 100,000 noise traps."

Advantages: The great advantage of Fibretone is that it brings the cost of Johns-Manville sound control within the reach of almost anyone having a noise quieting problem. It can be installed at a cost which compares favorably with that of ordinary noise reflecting ceilings. Fibretone is very efficient acoustically as the tables on pages 14 and 15 demonstrate. The panels give an attractive appearance which is preferred by many to that of conventional ceiling construction. Fibretone units are factory painted and require no finishing treatment on the job. They may be painted and repainted without suffering any loss in sound absorbing efficiency. The drilled holes are so spaced and designed that the application of paint does not bridge them. The use of Fibretone does not require any structural changes in existing rooms or buildings.

Application: Fibretone may either be cemented to plaster, concrete, or plaster board ceilings, or nailed to 1″ x 3″ wood furring. The more usual methods of application are diagrammed above. Units may be installed in a variety of patterns as illustrated on the left.

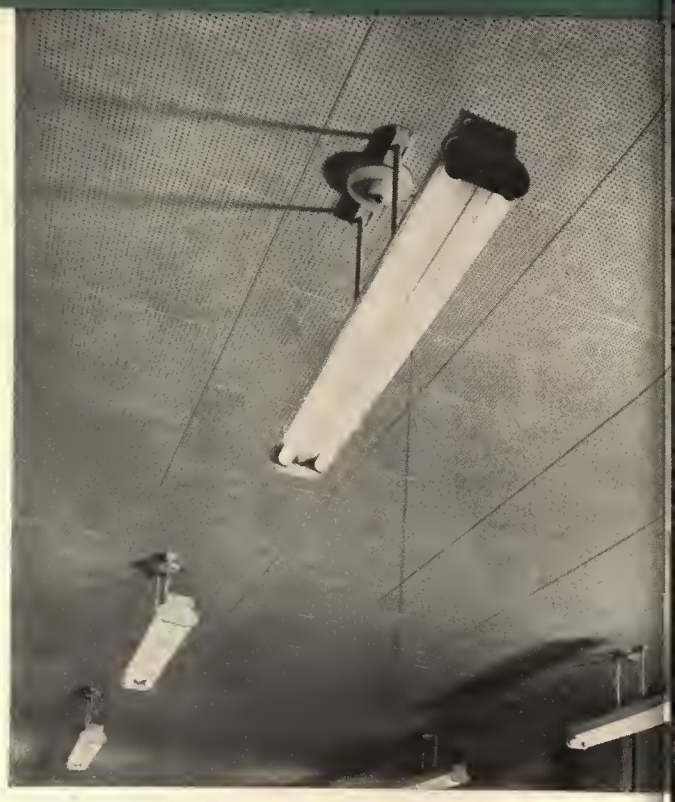
Bank office shows the attractive appearance obtained when Fibretone is used for quieting unnecessary nois

JOHNS-MANVILLE TRANSITE ACOUSTICAL MATERIALS

Transite Acoustical Panels and Units

Description: Transite Acoustical *Panels* consist of a perforated asbestos-cement Transite facing, 3/16" thick, used in conjunction with a sound-absorbing element. The Transite facing is used mostly in the 24" x 24" size which is particularly suitable for large areas. In many instances, however, the facing is installed with square edges and butt joints thus minimizing or eliminating all tile lines. The sound-absorbing element is available in a number of thicknesses and types depending on the acoustical requirements.

Transite Acoustical *Units* consist of a Transite perforated facing, 1/8" thick, backed up by a rock wool sound-absorbing element. The component parts are held together by brass grommets which also contain openings for nailing the units in place. Sizes, finishes and data are given on pages 14, 15.



Transite Acoustical Panels provide ceilings that are exceptionally flat and true

Advantages: Both of these materials are particularly resistant to fire and moisture. The *Panels* are especially adapted for use in broadcasting studios, music rooms, and auditoriums. Both *Units* and *Panels* are used in swimming pools, kitchens, gymnasiums and chemical laboratories. Both are easy to clean and may be repainted without loss of acoustical efficiency.

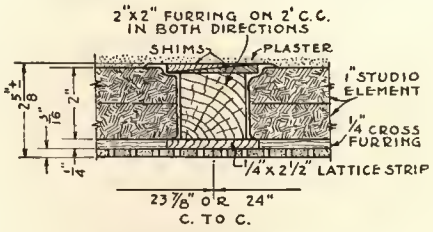
Application: In the case of Transite *Panels*, the sound-absorbing element is installed between furring strips (wood or special metal) to which the Transite facing is fastened by nails and screws. Transite *Units* are installed by nailing to the supporting structure. See drawings on opposite page.

Transite Acoustical Panels, in size 24" x 24", are architecturally desirable in many areas

JOHNS-MANVILLE TRANSITE ACOUSTICAL MATERIALS

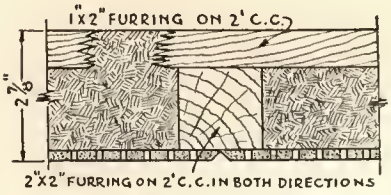
CONSTRUCTION DETAILS

TRANSITE ACOUSTICAL PANELS

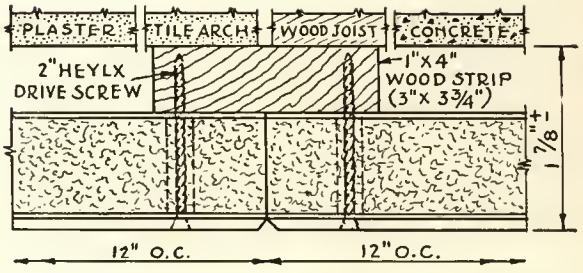


with 2" Studio Element

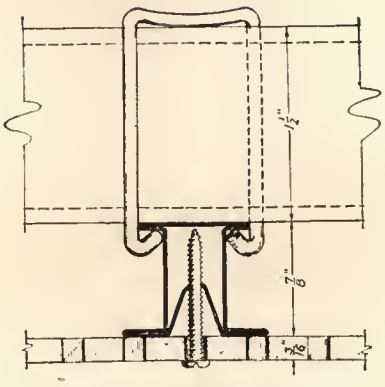
with 1" Rock Wool Blanket



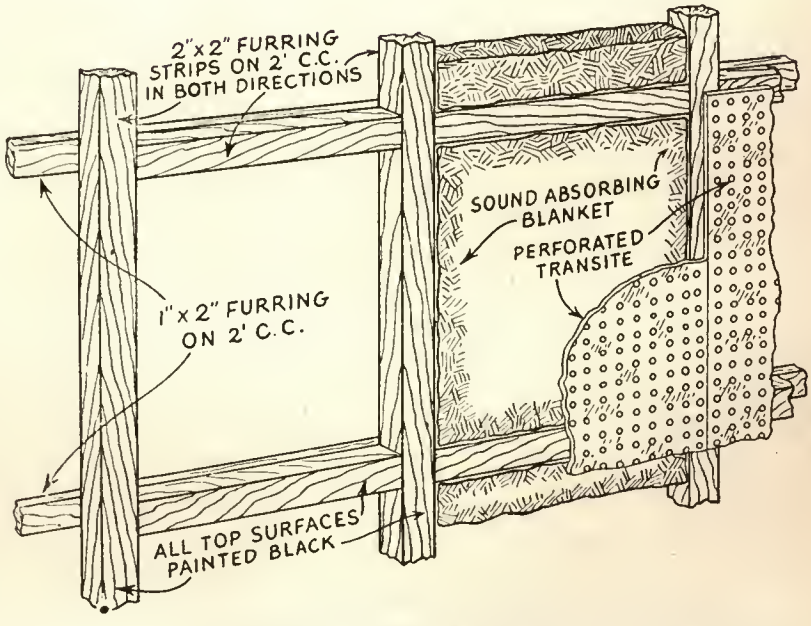
with 2" Rock Wool Blanket



Drawing shows a common method of installing Transite Acoustical Units

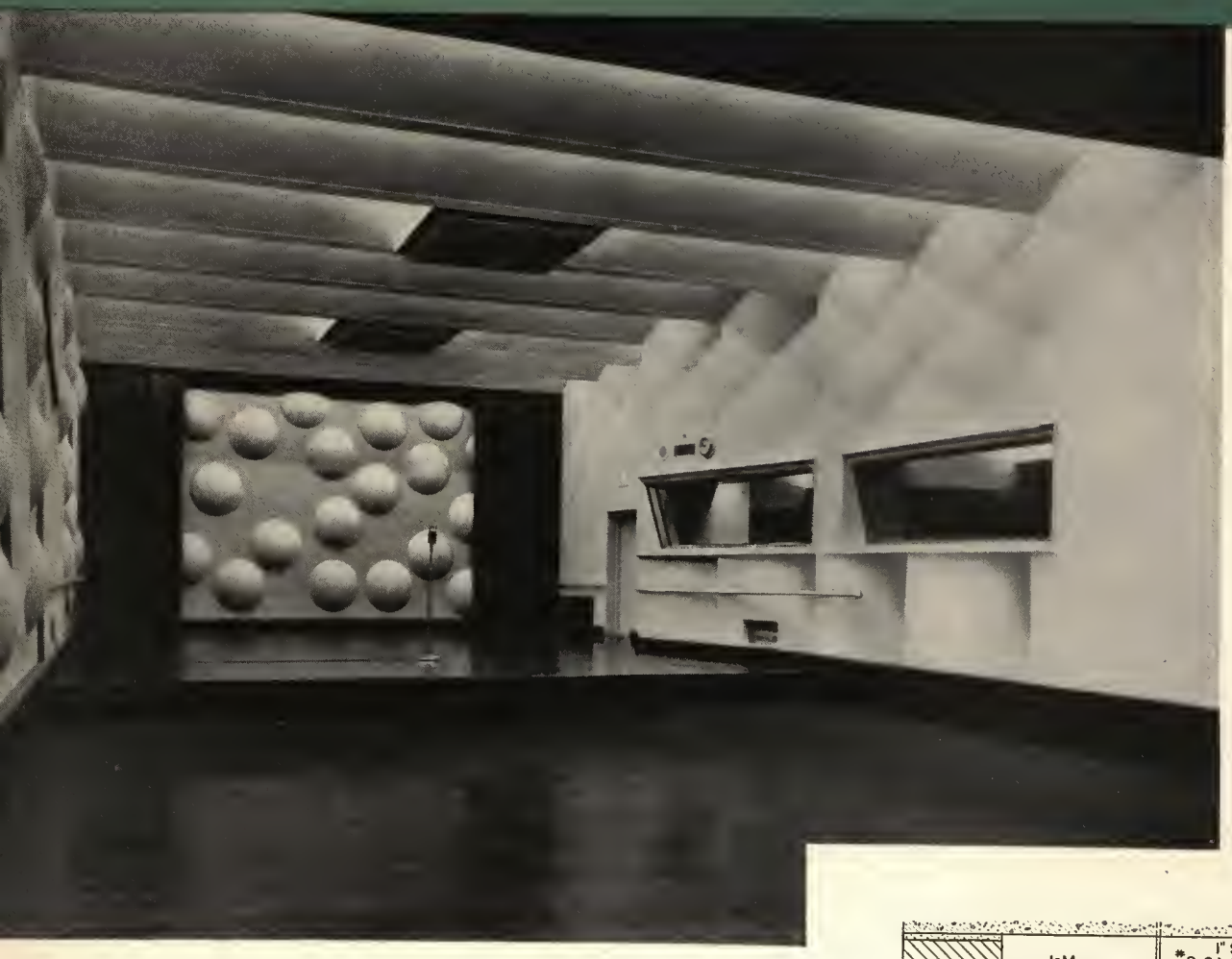


Detail of metal furring for Transite Acoustical Panels



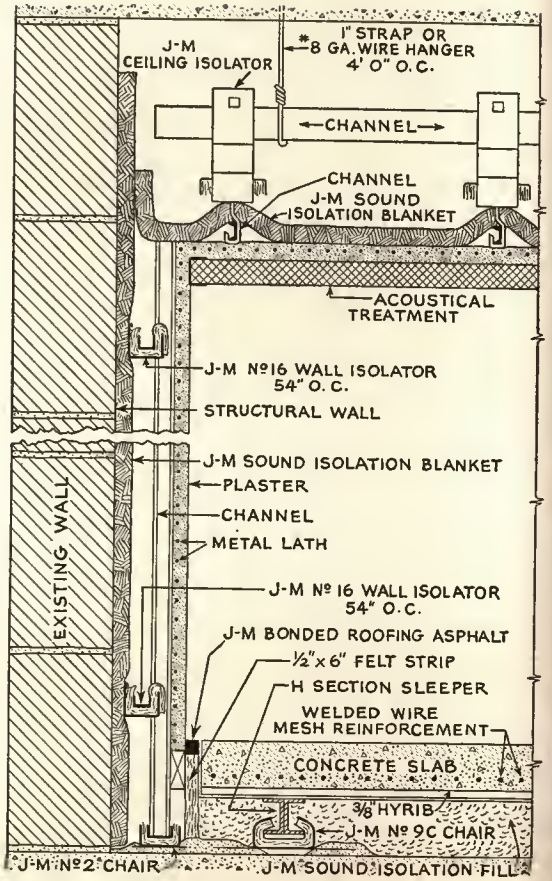
Transite Acoustical Panels nailed to wood furring strips

J-M ACOUSTICAL MATERIALS FOR BROADCASTING STUDIOS



One of the newer broadcasting studios located at NBC, Radio City

SINCE the early days of radio, Johns-Manville has been providing correct acoustics for broadcasting studios. Today, a majority of the country's stations, large and small, depend on J-M Sound Control to insure a faithful reproduction of their programs. Studio sound control, involving the elimination of excessive reverberation, the diffusion of residual sound, and the isolation of undesired extraneous sounds, is practically a specialized branch of acoustical engineering. For this reason Johns-Manville has engineers available to make studies of studio problems and to submit authoritative recommendations.



Right: The room within a room principle used in broadcasting studio construction for sound isolation is detailed on the right

JOHNS-MANVILLE INDUSTRIAL QUIETING

THE use of sound-absorbing materials in factory areas is gaining in importance. The worker, management has found, increases his productive capacity, both in quantity and quality, in direct ratio to the comfort of his working conditions and surroundings.

The use of sound-absorbing materials in factory areas permits increased ease and accuracy in verbal communication in the treated areas. Surveys disclose that sound-absorbing materials will lessen noise discomfort in factory areas. It also permits detection and localization of minor sounds in machinery and elsewhere. This detection may avoid breakdowns that might otherwise occur in defective machinery.

The use of sound-absorbing materials eliminates the reflections, or in other words, the spreading effect of sound. It reduces the tendency of noise to reach the listener from points or surfaces other than the source. Safety departments and others are keenly interested today in the use of efficient sound-absorbing materials in noisy plant or factory areas.

One of the several Johns-Manville acoustical materials will undoubtedly meet your needs.

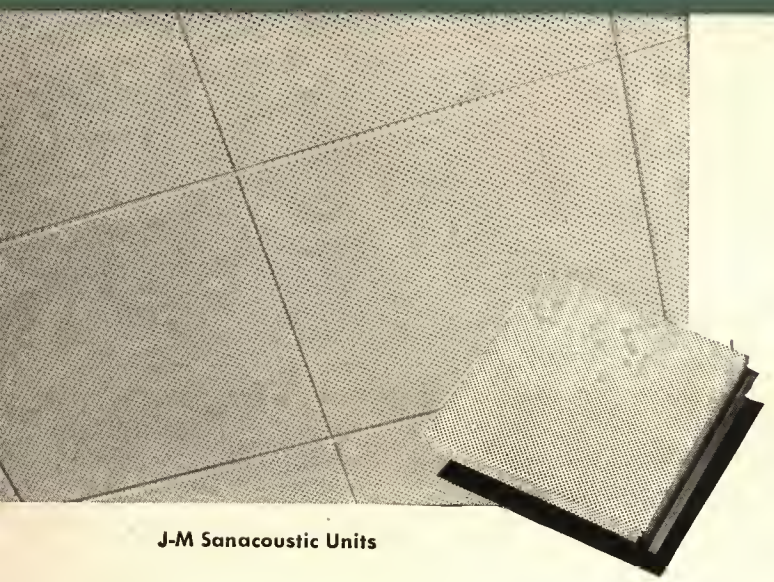
Left: J-M acoustical treatment in working areas of factories often lead to less nerve strain and increased production.

JOHNS-MANVILLE AIRACOUSTIC SHEETS

J-M AIRACOUSTIC SHEETS provide a fire-safe, sound-absorbing material developed for use in ventilating ducts. Since they absorb a large percentage of the sound that strikes them, they provide a highly effective means of reducing undesirable duct noises. Composed of rock wool and a suitable binder, Airacoustic Sheets are available in size 24″ x 36″ and in thicknesses of ½″ and 1″.

The noise reduction coefficient of the ½″ thickness of Airacoustic is .60, and of the 1″ thickness is .70.

JOHNS-MANVILLE SOUND CONTROL PRODUCTS



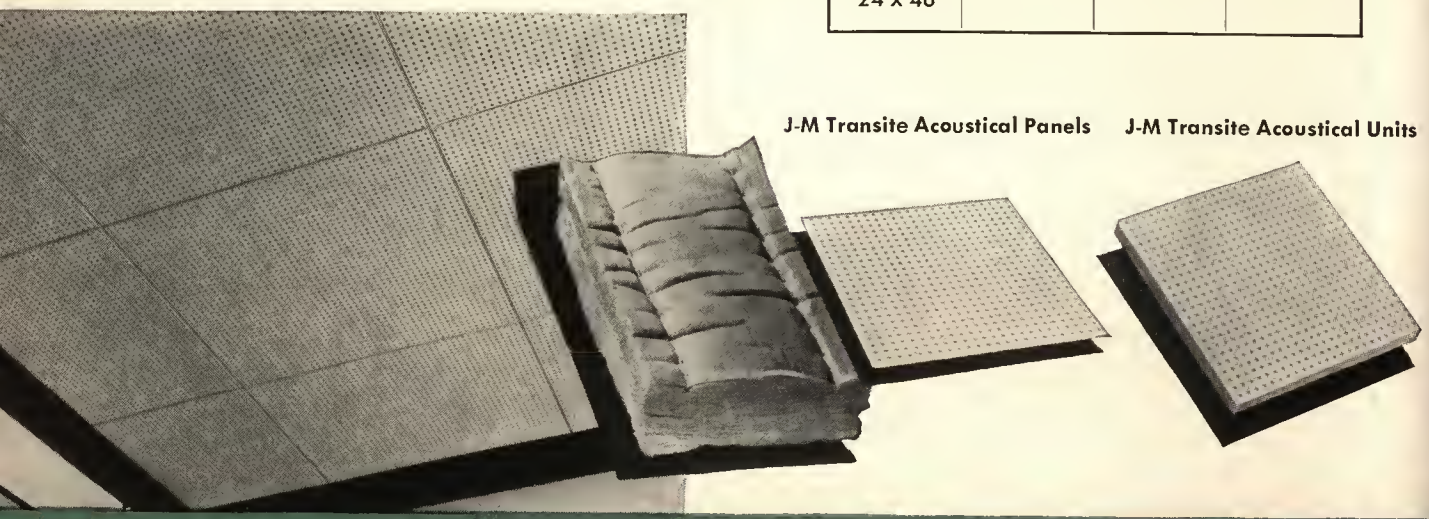
J-M Sanacoustic Units

SANACOUSTIC UNITS			
SIZE	THICKNESS	COLOR	APPLICATION
12 x 24 12 x 12 16 x 16	2½" (includes furring)	White Cream	Mechanical fastening

J-M Fibretone Units

FIBRETONE ACOUSTICAL UNITS			
SIZE	THICKNESS	COLOR	APPLICATION
12 x 12 12 x 12	1/2" 13/16"	White	Cement in place

TRANSITE ACOUSTICAL UNITS			
SIZE	THICKNESS	COLOR	APPLICATION
12 x 12 6 x 12	2⅜" (includes furring)	White Cream Natural gray	Nail to furring strips
TRANSITE ACOUSTICAL PANELS			
12 x 12 12 x 24 23⅞ x 23⅞ 24 x 24 23⅞ x 47¾ 24 x 48	3/16" plus furring	White Cream Natural gray	Nail to furring strips



J-M Transite Acoustical Panels J-M Transite Acoustical Units

JOHNS-MANVILLE SOUND CONTROL PRODUCTS

DESCRIPTION AND DATA CHART

MATERIAL	Thickness	Mounting	COEFFICIENTS 128	256	512	1024	2048	4096	Noise Red. Coef.	Light Reflection Color	Value	Wt. Lbs. per Sq. Ft.	SURFACE	Test No.
SANACOUSTIC Type KK, pod Plus metal facing and pad supports Plus furring	1¼" 1 9/16" 2½"	Attached to metal supports applied to 1" x 2" wood furring.	.25	.58	.96	.97	.85	.72	.85	W	.76	Pad 1.28	Perforated, enameled metal. See note 1	46-88
Type MA, pod Plus metal facing and pod supports Plus furring	1⅛" 1 9/16" 2½"		.14	.70	.61	.70	.56	.54	.65	Wp Wu	.76 .85	Pad 1.31	50/50 pattern. See Note 2	A48-13
TRANSITE ACOUSTICAL PANELS Rock Wool Blanket Plus perforated Transite	1" 1 3/16"	Nailed to 1" x 3" wood furring 24" o.c. 1" mineral wool between furring.	.17	.49	.94	.90	.70	.43	.75	—	—	1.20	Perforated, unpainted. See Note 3	46-77
Rock Wool Blanket Plus perforated Tronsite	2" 2 3/16"	Nailed to 2" x 2" wood furring 24" o.c. 2" mineral wool between furring.	.29	.57	.94	.93	.70	.48	.80	—	—	2.00	Same as above	46-43
TRANSITE ACOUSTICAL UNIT, pad	1" 1⅛"	Nailed to 1" x 2" wood furring 12" o.c.	.32	.58	.72	.85	.76	.67	.75	—	—	2.20	Perforated, painted. See Note 4	47-45
SOUND ISOLATION Blanket MK Blanket MK	1" 2"	Laid directly on laboratory floor.	.22 .39	.46 .57	.86 .91	.98 .91	.88 .80	.77 .78	.80 .80	— —	— —	1.20 2.00	Covered with muslin, unpainted.	46-73 46-42
FIBRETONE	½" 13/16" 13/16"	Cemented to plaster baard. Nailed to 1" x 2" wood furring 12" o.c.	.08 .14 .18	.28 .37 .54	.58 .69 .72	.71 .80 .74	.68 .76 .71	.65 .73 .72	.55 .65 .70	W W W	.71 .71 .71	.71 1.17 1.17	Perforated, painted. See Note 5 See Note 6 See Note 6	47-47 46-124 46-123
AIRACOUSTIC	½" 1"	Laid on 24 ga. sheet iron, nailed to 1" x 2" wood furring 24" o.c.	.13 .29	.41 .51	.40 .70	.72 .82	.78 .79	.72 .80	.60 .70	— —	— —	.80 1.50	Unpainted. Unpainted.	46-70 46-71

Note 1. Sanacoustic is a perforated, enameled metal pan backed with mineral waal saund-absarbing pad. Perforations are .068" in diameter, 4608 holes per sq. ft.

Note 2. One-half perforated enameled metal backed with rock waol pads; ane-half enameled metal unperforated, unbacked. Perforations .068" in diameter, 4608 per sq. ft.

Note 3. Holes are 3/16" in diameter, 600 per sq. ft.

Note 4. Holes are 5/32" in diameter, 576 per sq. ft.

Note 5. Hales are 3/16" in diameter, ⅜" deep; 484 per sq. ft.

Note 6. Hales are 3/16" in diameter, 11/16" deep, 484 per sq. ft.

Johns-Manville

22 EAST FORTIETH STREET, NEW YORK 16, N. Y.

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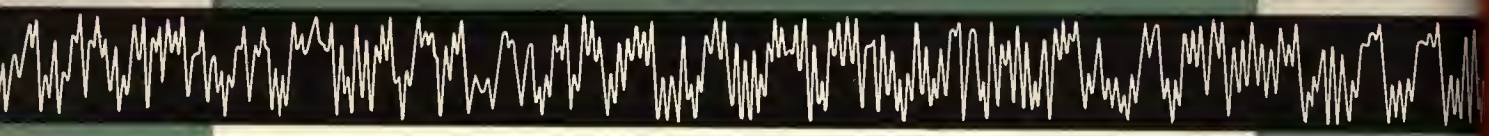
Cleveland	Minneapolis	Syracuse
Des Moines	New Orleans	Washington, D. C.



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JOHNS-MANVILLE

JM

PRODUCTS

TIGER

KILNOISE

ACOUSTICAL PLASTER

THE KELLEY ISLAND LIME & TRANSPORT CO., CLEVELAND 14, OHIO

KILNOISE *Acoustical Plaster*

Seven years ago Kelley Island, manufacturers of the famous Tiger Brand Finish Lime, realized the need for an improved Acoustical Plaster. A low cost, acoustically efficient, easily applied material of pleasing appearance was defined as the original product requirements. The Kelley Island Research Department undertook the development of such a product. Concentrated research and thousands of tests resulted in "KILNOISE ACOUSTICAL PLASTER".

Today Kilnoise is a tested and proved Acoustical Plaster. It has been specified by outstanding architects and applied by the finest plastering contractors throughout the United States.

Kilnoise Acoustical Plaster achieves its acoustical value through the absorption of sound energy on the sides of the interconnecting perforations and pores circulating through the applied material.

During the mixing of Kilnoise, a bubble-like foam is created which separates the particles, doubling the volume of the plaster. After trowelling, the pore filled Kilnoise dries in place, covering the ceiling with a one-piece, mineral fibered, air channeled, light weight mat. The surface is then perforated to direct the sound waves to the interior of the material, where the sound energy is absorbed.

Kilnoise Acoustical Plaster assures satisfactory application because all of its characteristics can be checked visually: 1. foaming in the mixer, 2. thickness of the material applied, and 3. perforation of the surface.

With this knowledge, the architect may recommend with confidence the use of Kilnoise Acoustical Plaster, knowing that the desired noise reduction will be obtained.

KILNOISE FEATURES

1. High Sound Absorption—Tests by the National Bureau of Standards give the following Coefficients of Sound Absorption for ½ in. thickness of KILNOISE Acoustical Plaster, Type "A"

Frequency	128	256	512	1024	2048	4096	NOISE REDUCTION COEFFICIENT
Coefficient	.33	.33	.59	.74	.69	.72	.60

One of several tests giving same NOISE REDUCTION COEFFICIENT of .60. These tests can be obtained on request from the nearest Kelley Island office. (See last page.)

In KILNOISE ACOUSTICAL PLASTER, asbestos and rock-wool fibers are woven together horizontally to form a mat, bonded by foamed lime. Fibers and lime are separated by interconnecting pores formed in mixing which dry in place after trowelling. Random perforations (at least 576 per square foot) are made in the surface of the porous mat through which the sound energy enters to be absorbed by dissipating its force in movement through and against the viscous sides of the channels in the KILNOISE.

2. Non-Combustible—The fallacy of building a fireproof building and using combustible decorative and acoustical materials has been most tragically demonstrated. KILNOISE will not ignite or support combustion, nor will it give off toxic fumes and smoke. This factor should be a major consideration when specifying acoustical materials for hotels, hospitals, and schools.

3. Low Cost—KILNOISE is an economical acoustical material. The ease of application reduces time and cost of plastering.

4. Pleasing Color and Texture—The natural color is white. Its interesting texture is appropriate for use with any style of architecture.

5. Repaintable and Cleanable—KILNOISE may be painted with any water paint in accordance with our recommendations. Cleaning can be done with a buffing brush. It may also be washed with a sponge or brush, using mild soap solutions and rinsing with a sponge and clean water.

6. Monolithic Construction—The beauty of a single expanse of ceiling, free of joints and completely level, which can be curved or angled to fit the decorative features desired, is one of the outstanding advantages of KILNOISE Acoustical Plaster.

7. Moisture Resistant—KILNOISE can be used under high humidity conditions, which makes it suitable for swimming pools, laundries, weaving rooms and similar buildings. KILNOISE was not affected after standing in an atmosphere of 100 per cent humidity at temperature of 110 degrees Fahrenheit for 17 days, during a test conducted at our laboratory.

8. Light Reflection—Tests on a Taylor Sphere Reflectometer prove KILNOISE in its natural white color reflects 75% of the light that strikes it. This is most essential in eliminating eye fatigue.

9. Easy Application—One of the prime materials in KILNOISE is Tiger Pressure Hydrated Finishing Lime, which is used in making white coat finish because of its great plasticity. It is said of this material that it "SPREADS LIKE WARM BUTTER". This gives KILNOISE its easy, long spreading quality and assures the contractor of more yards of application per day.

ARCHITECTURAL SPECIFICATIONS FOR KILNOISE ACOUSTICAL PLASTER

1. KILNOISE ACOUSTICAL PLASTER shall be applied to all areas as specified in the plans.
2. Material shall be KILNOISE ACOUSTICAL PLASTER as manufactured by The Kelley Island Lime and Transport Company, Leader Building, Cleveland, Ohio.
3. Mixing
   - A. KILNOISE shall be mixed by machine mixer.
   - B. The only ingredients of the mix shall be KILNOISE and clean water in the ratio of 100 lbs. KILNOISE to 150 lbs. (6 full twelve quart pails) of clean water.
   - C. The ingredients shall be agitated in the mixer for 15 minutes. (This increases the volume of the mix, by incorporating air cells in the material.)
   - D. Mixer shall be cleaned thoroughly at the end of the day's run.
4. Application
   - A. After mixing, KILNOISE is ready for application to any of the following base coats of plastering mortar:
     Scratch coat on metal lath.
     Scratch and brown coat on metal lath.
     Bond coat on concrete.
     ⅜ inch brown coat on gypsum lath, hollow tile or brick.
     The base coat to which KILNOISE is applied should be dry and well scratched with a wire-brush.
   - B. KILNOISE shall be applied in two coats with a hawk and trowel by a practical plasterer. The first coat shall be ⅜ inch thick. After the first coat has dried for several hours, the second coat shall be applied to make the combined thickness of KILNOISE a minimum of ½ inch. Straighten all angles with a feather edge and using lightly a thin bevelled darby bring to a true and even surface.
   - C. Follow immediately with a rice stippling brush, forming a pleasing texture. The following day, the entire area shall be nail stippled to give a uniform appearance.

ACOUSTICAL PLASTER
KILNOISE

Penn Fruit Market,
Philadelphia, Pa.
Thalheimer & Weitz, Archts.

Washington Irving School,
Teaneck, N. J.
Hacker & Hacker, Archts.

KILNOISE JOBS

If you wish to inspect local work, our Division Offices (see last page) will provide you with other jobs near your office.

EDUCATIONAL BUILDINGS

Public School No. 99, New York City
Architect: Board of Education
Wauseon High School, Wauseon, Ohio
Architect: Britsch and Munger
St. Xavier Academy, Ottawa, Ill.
Architect: A. F. Moratz
Immaculate Conception School, New York City
Architect: Eggers and Higgins
John M. Greene Hall, Smith College, Northampton, Mass.
Architect: Roudebush and Martin
Acoustical Engineer: Clifford Melville Swan

HOSPITALS

Norristown State Hospital, Norristown, Pa.
Architect: Howell Lewis Shay
Central Islip State Hospital, Central Islip, L. I., N. Y.
Architect: William E. Haugaard, Commissioner of Architecture

OFFICES AND INDUSTRIAL BUILDINGS

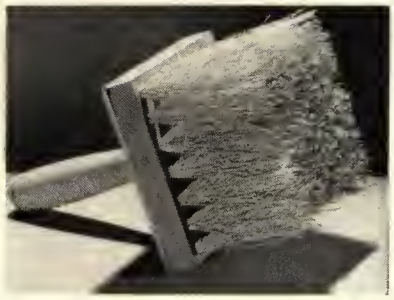
Egyptian Lacquer Co., South Kearny, N. J.
Engineers & Constructors: Brown and Matthews
Steber Manufacturing Co., Broadview, Ill.
Architect: Houlihan & Marks
Ingalls Steel Co., Birmingham, Ala.
Architect: Owner
Philco Radio Corp., Philadelphia, Pa.
Architect: M. Ward Easby, Inc.

MARKETS, STORES AND SHOWROOMS

Old Dominion Electric Co., North Arlington, Va.
Architect: Corning and Moore
Aurora Motor Sales, Inc., Aurora, Ill.
Architect & Engineers: Elmer Gylleck and Associates
American Wholesale Furniture Co., Chicago, Ill.
Architect: Arthur Swanson & Associates

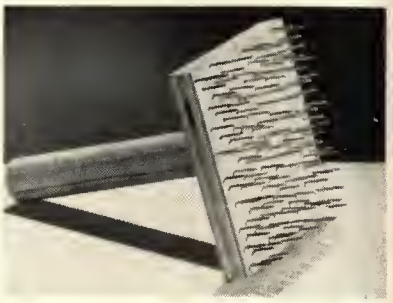
OTHER TYPES OF BUILDINGS

McLean Dormitory Building, Washington, D. C.
Architect: Kenneth Franzheim
The First Mission Covenant Church, Chicago, Ill.
Architect: Godfrey E. Larson
Miami Recreation Center, Miami, Fla.
Architect: Steward & Skinner
Beverly Bowling Lanes, Inc., Chicago, Ill.
Architect: Kocher and Larson



THE BRUSH STIPPLER is used to texture the surface of Kilnoise. Over-trowelling tends to make the surface dense by closing the pores. The brush stippler eliminates the possibility of over-trowelling, assures a pleasing textured surface, and increases the exposed, sound absorptive area.

THE NAIL STIPPLER assures acoustical value. 144 random spaced nails are set in a 6" x 6" area, resulting in a minimum of 576 perforations per square foot in the Kilnoise surface treated. These perforations direct the sound energy to the porous, absorptive body of the Kilnoise plaster.



MIXING INSTRUCTIONS

KILNOISE ACOUSTICAL PLASTER must be mixed in a plaster mixer in order to obtain the correct degree of foaming. In the usual mixer, a batch consists of two fifty pound bags of KILNOISE, which is combined with 150 pounds of clean water (six 12 quart pails). After these have been placed in the bin of the plaster mixer, they should be agitated for fifteen minutes. During the mixing, bubbles

will be formed throughout the mass and the volume of the plaster will be doubled. When the material is dumped from the mixer, it is ready for use by the plasterer.

PACKING AND SHIPPING

KILNOISE is packed in convenient 50-pound paper sacks bearing the KILNOISE Trademark. Shipment can be made in mixed cars with other Kelley Island products.

Printed in U. S. A.

THE KELLEY ISLAND LIME & TRANSPORT CO.

World's Largest Producer of Lime and Limestone Products

GENERAL OFFICES: Leader Building, CLEVELAND 14, OHIO

DIVISION OFFICES

New York 9, New York
Rockefeller Plaza
Tel. Columbus 5-2400

Cleveland, Ohio
Leader Building
Tel. Main 5306

Atlanta, Georgia
22 Marietta St. Bldg.
Tel. Walnut 5366

SERVICES AND ADDITIONAL DATA

Kilnoise is made by the manufacturers of famous TIGER FINISH LIMES which have been specified by architects and used by plasterers for nearly half a century. This long experience in the production and use of fine lime has been incorporated in the latest product of this long established firm. Their long experience is available to architects in solving any plastering problems.

OTHER TIGER PRODUCTS

TIGER FINISH HYDRATED LIME
TIGER FINISH PRESSURE HYDRATED LIME
TIGER MASONS HYDRATED LIME
LUMP LIME PEBBLE LIME PULVERIZED LIME

Gold Bond
SOUND CONTROL PRODUCTS

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SPRAYED "LIMPET" ASBESTOS

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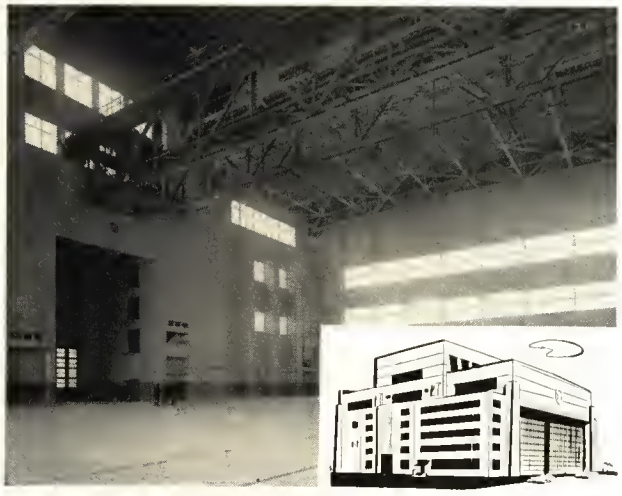
"MACOUSTIC" ACOUSTICAL PLASTER

UNITED NATIONS HEADQUARTERS, Lake Success, L. I. Gold Bond engineers were called in to sound-condition the main conference room, the main lobby and many other rooms at United Nations Headquarters.

IMPORTANT sound control installations like those shown on this page are handled in stride by National Gypsum Company's approved acoustical contractors. Located at strategic points throughout the United States, they are readily available for on-the-spot consultations.

AK-SAR-BEN COLISEUM, Lincoln, Nebraska. All sorts of events, including cattle shows, hockey games, political meetings and symphony concerts are staged in this immense enclosed amphitheatre. Outstanding feature of its Gold Bond Sound Control is the monolithic ceiling which also provides thermal insulation.



WRIGHT FIELD, Dayton, Ohio. In this A.A.F. Static Test Building, the entire sidewall area (138 ft. from floor to monitor roof) is lined with fireproof Gold Bond sound control materials.

SEXTON HIGH SCHOOL, Lansing, Michigan. Completely sound-conditioned. Auditorium, gymnasium, library, class rooms and corridors acoustically treated with Gold Bond sound control products.

Gold Bond SOUND CONTROL PRODUCTS

ECONACOUSTIC . . . A low-cost, all-wood-fibre tile . . . lightweight . . . attractive . . easily installed.

GOLD BOND Econacoustic is made from selected southern wood fibres by a special fabrication process that provides greater porosity without sacrificing strength. Actually, the material is a mass of intercommunicating channels that smother noise like magic. Lightweight, durable and permanent. A beautiful looking product, with distinctive brushed surface, it provides sound control, decoration and insulation in one operation, at a comparatively low cost.

Sound Absorption Data

Authority: Acoustical Materials Association

Thickness	Mounting (Described Below)	SOUND ABSORPTION COEFFICIENTS					Noise Reduction Coefficient
		128	256	512	1024	2048	
½ in.	1	.05	.17	.62	.83	.77	.60
½ in.	2	.09	.32	.75	.78	.74	.65

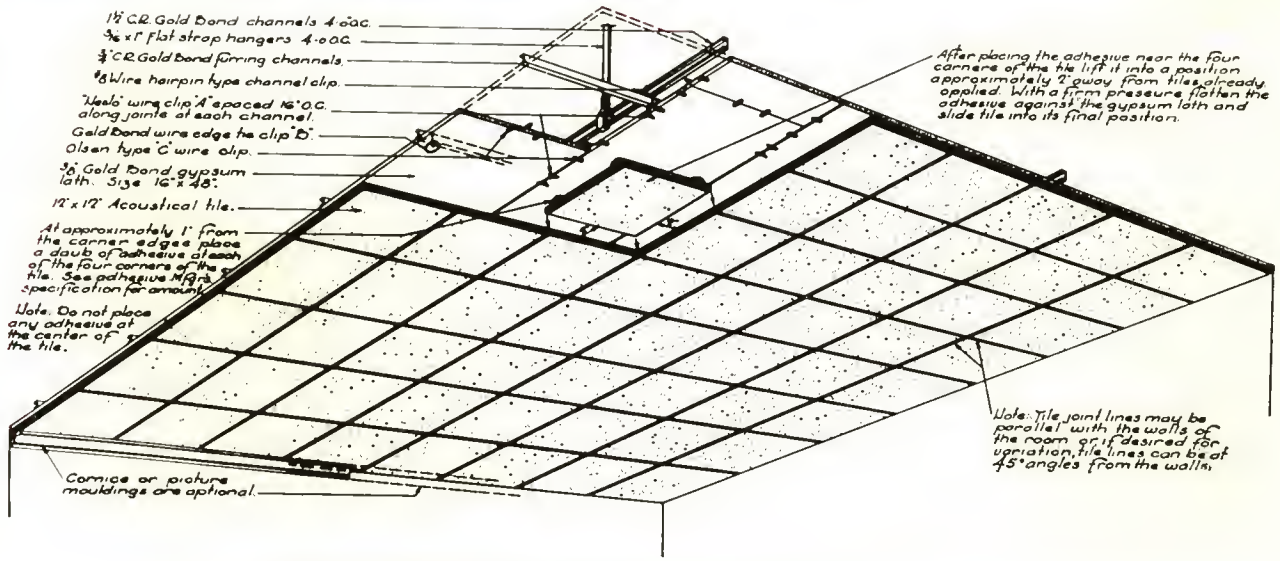
Types of Mounting:

(1) Cemented to plaster board. Considered equivalent to cementing to plaster or concrete ceiling.
(2) Nailed to 1" x 2" wood furring 12" o.c. unless otherwise indicated.
NOTE: The surface of these samples was painted by manufacturer.

Thickness, Sizes and Colors

Econacoustic is supplied ½ in. and 1 in. thick . . . three sizes: 12 x 12, 12 x 24, 16 x 16 in., with brushed surface and beveled, butt edges all-around. Supplied in Natural Cream Color, also prepainted White and prepainted Cream. Where special colors are desired, decorate with Gold Bond Sunflex Casein Paint or interior oil paint. Spray painting is recommended, with a minimum of paint to be used.

Gold Bond Econacoustic is sold and applied only by sound control engineers, appointed by NATIONAL GYPSUM CO. Write Acoustical Dept. for list of approved applicators.



FINAL STEP - GYPSUM BASE ACOUSTICAL TILE CEILING ASSEMBLY

Gold Bond SOUND CONTROL PRODUCTS

ACOUSTIFIBRE . . A wood-fibre tile combining high noise reduction and light reflection. Repaintable.

FABRICATED by a special process from the fibres of live southern woods, Gold Bond Acoustifibre has greater inherent noise-absorbing ability than any other fibre tile on the market today. The three-coat factory painted finish makes ceilings stay brighter, longer. 441 holes approximately 3/16" in diameter in each square foot of tile area permit repainting without loss of noise reducing efficiency. Any of the usual types of interior wall paint may be applied by spraying or brushing.

Thickness and Sizes

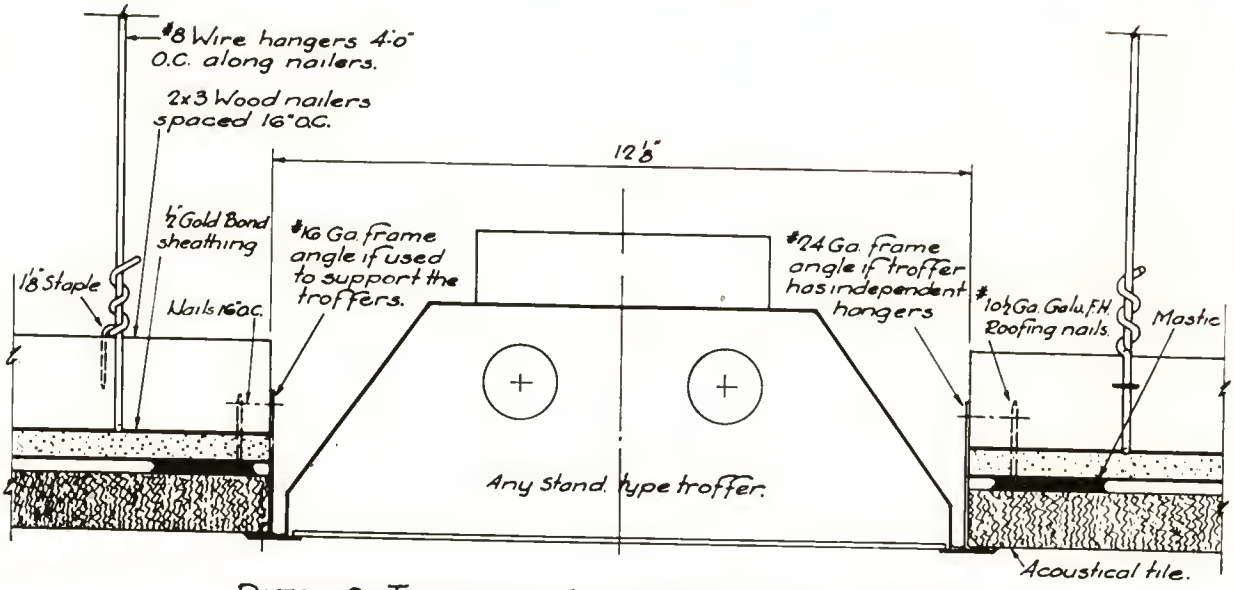
Gold Bond Acoustifibre is made in one thickness, 5/8", and in two sizes, 12" x 12" and 12" x 24" with beveled butt edges all around. The tiles are cemented to existing ceiling materials or blind nailed to furring strips with 16 gauge x 3/4" wire nails driven through the corner holes.

Sound Absorption Data

Authority: Acoustical Materials Association

Thickness of Tiles	Mounting	SOUND ABSORPTION COEFFICIENTS						Noise Reduction Coefficient
		128	256	512	1024	2048	4096	
5/8"	Cemented to Plaster Board	.10	.16	.62	.97	.81	.73	.65
5/8"	Nailed to 1" x 2" Wood furring	.13	.38	.72	.89	.82	.66	.70

Gold Bond Acoustifibre is sold and installed by the Approved Gold Bond Acoustical Contractors. Names of nearby contractors furnished on request.



DETAIL OF TROFFERS SET ACROSS WOOD NAILERS

Gold Bond

SOUND CONTROL PRODUCTS

ACOUSTEX . . . A tough, durable, fibrous tile recommended for jobs where ruggedness counts.

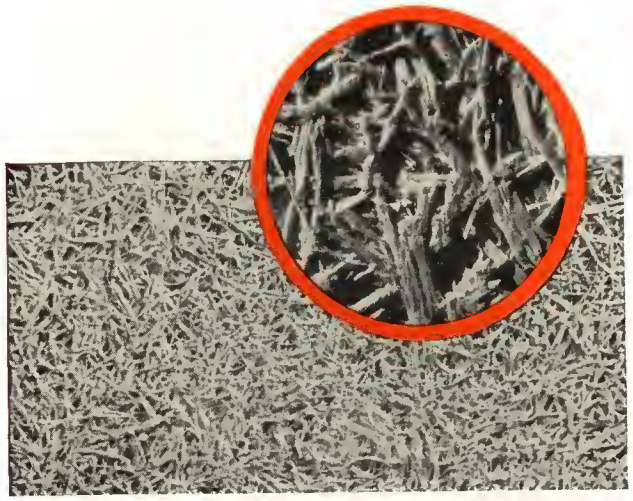
IN choosing an acoustical material, sound absorption is, of course, of major importance. However, on many jobs, equal consideration should be given to the ruggedness and durability of the product and its ability to withstand unusually harsh treatment. For example, in gymnasiums—especially where softball is played—the acoustical material must be able to take plenty of punishment year in and year out. Another important use for acoustical products is the lining of control rooms in airplane testing chambers. Here, the acoustical material is asked to withstand terrific vibrations, intense enough to cause fragile material to crumble and deteriorate over a period of time. For jobs of this kind—where ruggedness counts—Acoustex can be depended upon to give lasting satisfaction.

Description

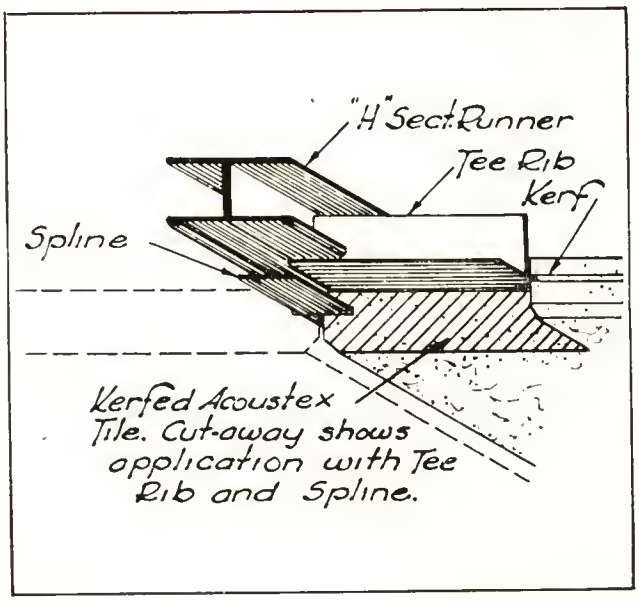
Acoustex is fabricated from selected wood that is shredded, then toughened by a hard-setting cement binder, which imparts extreme strength and durability. It retards fire effectively, is sanitary and easily cleaned. Impervious to mould growth and decay. Acoustex can be sawed like wood, is non-brittle and not easily broken in handling. Supplied with artistic textured surface, and with beveled, butt edges all around.

Colors

Acoustex is factory-painted in standard ceiling colors. Where special colors are desired, Acoustex may be painted to suit. It may be redecorated again and again with any good interior paint with no appreciable loss of sound absorption.



Close-up view of distinctive surface of an Acoustex ceiling which harmonizes beautifully with practically any wall treatment. Micro-photo in circle shows how interlacing of fibres forms a mass of noise-trapping channels.



Sound Absorption Data

Authority: Acoustical Materials Association

Thickness	Mounting (Described Below)	SOUND ABSORPTION COEFFICIENTS 128	256	512	1024	2048	Noise Reduction Coefficient
¾″	2	.09	.17	.59	.90	.75	.60
¾″	7	.18	.35	.87	.89	.87	.75
⅞″	2	.24	.40	.82	.90	.72	.70

Types of Mounting

2. Nailed to 1″ x 2″ wood furring 12″ o.c. unless otherwise indicated.
7. Attached to metal supports mounted on 2″ x 2″ wood furring.

NOTE: The surface of all samples tested was painted by manufacturer.

Sizes and Thicknesses

STANDARD ACOUSTEX

TILE SIZES: 12″ x 12″, 12″ x 24″, ¾″ and ⅞″ thick.

ACOUSTEX FOR SUSPENDED CEILINGS

Acoustex can be specially grooved for suspended ceiling application.

Installed by Experienced Applicators

Gold Bond Aconstex is sold and applied only by sound control engineers appointed by National Gypsum Company. Write for list of approved applicators.

Gold Bond

SOUND CONTROL PRODUCTS

ACOUSTIMETAL . . . . Maximum sound absorption and light reflection. Withstands years of hard use.

SCIENTIFIC research by Gold Bond acoustical engineers in designing scores of huge airplane engine test-cells during World War II has now made possible many refinements in the new, improved Acoustimetal. These outstanding advantages include:

1. **90% Light-Reflecting Surface** without any loss of sound absorbing efficiency.
2. **Galvanized Steel "Pans"** to provide higher resistance to rust and corrosion.
3. **Bonderizing** to provide greater adhesion between paint and metal and to prevent formation of rust.
4. **Improved Finish** of alkyd resin enamel to resist discoloration and abrasion.
5. **Electro-Static Coating** to insure an enamel surface of uniform density.
6. **New Type Spacer Grid** to keep Rock Wool Acoustipad a uniform 3/8" from metal casing, for maximum sound absorption.

Fireproof, Permanent, Removable

Gold Bond Acoustimetal has a noise reduction coefficient of 85%, and a sound absorption rating of .97 at 512 cycles. It is fireproof and permanent and gives distinctive beauty as well as improved acoustics to interiors. Easy to erect, it is also easy to remove for the installation or repair of wiring, plumbing, etc.—a feature of utmost importance in buildings where alterations are frequently required. It can be replaced quickly, saving the otherwise unavoidable expense of patching and repainting. Can be washed with soap and water. Factory-painted white, but may be repainted in any other color without loss of its sound-absorption qualities.

SOUND ABSORPTION COEFFICIENTS
Authority: Acoustical Materials Association

THICKNESS OF PAD	128	256	512	1024	2048	NOISE REDUCTION COEFFICIENT
1¼ in.	.26	.47	.97	.99	.88	.85

Installed by Experienced Applicators

National Gypsum Company has appointed 50 specially trained acoustical engineers in various districts of the United States to supervise the installation of Acoustimetal and other Gold Bond acoustical products. These applicators, may be called in for consultation on acoustical problems.

This office ceiling of sound-absorbing Acoustimetal is in harmony with the other modern appointments indicated by the troffer fluorescent lighting and the air-conditioning anemostats. Insert shows how easily the baked enamel surface is cleaned with soap and water.

SPECIFICATIONS

Scope of Work

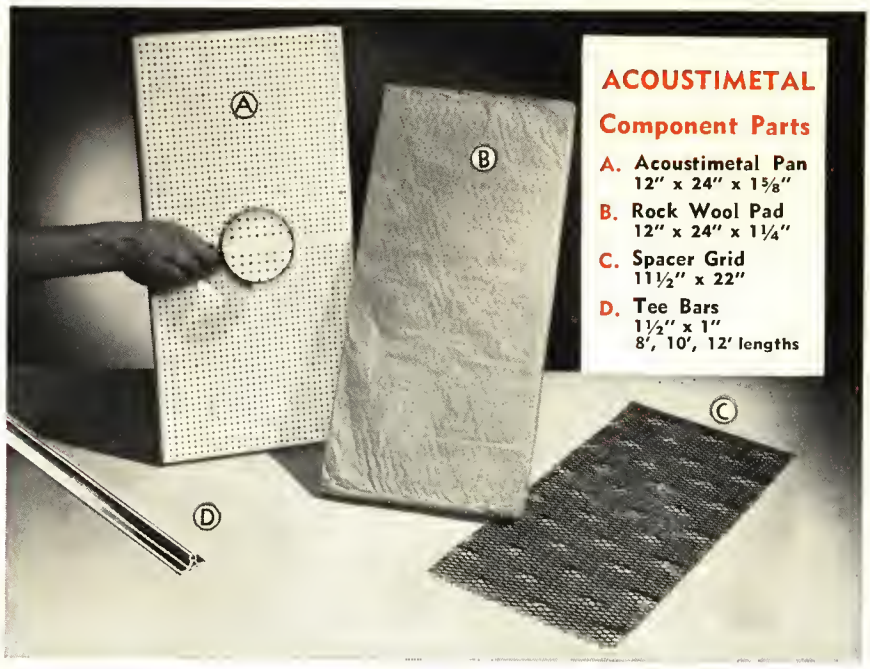
Furnish and install Gold Bond Acoustimetal units to cover ceiling surfaces in the following spaces: (List here the rooms where Acoustimetal unit ceilings are required, or refer to Schedule of room finishes.) Gold Bond Acoustimetal units shall also be supplied and installed on wall surfaces as follows: (Give an exact description of the extent of wall surfaces to be covered.)

Work by others

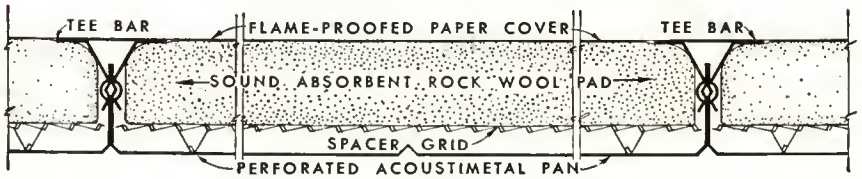
(a) Suspended Ceilings, Metal Furring. Contractor for metal furring shall supply and install 1½ in. steel angles or channels in one direction on 4 ft. centers, rigidly suspended from the supporting structure according to standard practice, with the bottoms of angles or channels in a true and level plane 1⅝ in. above the finished ceiling level. A 1½ in. angle or channel shall be placed not over 9 in. from walls or other terminating surfaces which parallel the direction of angles or channels.

(b) Suspended Ceilings, Plaster. Others shall supply and install suspended ceilings of lath and plaster (scratch and brown coats), brought to a true and level surface 2⅜ in. above the finished ceiling level.

(c) Wood Framing. Contractor for carpentry shall supply and install wood framing members 4 ft. on center, in one direction. They shall be suspended from the supporting structure 1⅝ in. above the finished ceiling levels.



TYPICAL CROSS SECTION OF ACOUSTIMETAL SYSTEM



(d) Wood Mouldings—If required, to be supplied and installed by carpenter contractor.

Materials

Acoustimetal Pans—Shall be of 26 gauge galvanized steel, bonderized; with 1024 holes, .109 in diameter, per square foot. Pans shall be 12 in. x 24 in. in size with beveled edges, bevels and flanges unperforated. They shall be scored in the center to give the appearance of 12 in. x 12 in. beveled edge squares. The exposed surface shall be painted with alkyd enamel, baked on. Color shall be white or cream, as selected.

Rock Wool Pads—Shall be 1¼ in. thick and 12 in. x 24 in. in size. Pads shall be completely encased on all sides in flameproofed paper.

Spacer Grids—Shall be of metal mesh corrugated to support the pads ⅜ in. above the surface of the Acoustimetal Pans.

Tee Bars—Shall be the standard Acoustimetal supporting members made of 22 gauge copper-bearing steel.

Assembled Unit—The Assembled Acoustimetal Unit, comprising Pan, Spacer Grid and Rock Wool Pad shall have a sound absorption coefficient of .97 at 512 cycles and a noise reduction coefficient of .85 according to tests published by Acoustical Materials Association.

Installation

(a) Suspended Ceilings, Metal Furring—Tee bars shall be secured to 1½ in. angles or channels with tie wire, metal clips or other fastener approved by the National Gypsum Company.

(b) Suspended Ceilings, Lath and Plaster—2 in. x 2 in. wood ground strips shall be installed in one direction on 4 ft. centers by the acoustical contractor. The ground strips shall be secured by double strands of No. 12 ga. galvannealed wire to ½ in. box channels which shall bridge the existing furring channels at intervals of not more than 4 ft. Tee bars shall then be fastened to the ground strips with screws and metal washers, the screws being driven along the flanges of the tee bars.

(c) Wood Framing—Tee bars shall be secured to wood framing with screws and metal washers as outlined in (b) above.

(d) Concrete Arch—Install 2 in. x 2 in. wood ground strips, using an approved anchor fastener and secure tee bars to ground strips with screws and metal washers as outlined in (b) above.

(e) Hollow Tile Arch—Secure wood ground strips to tile with toggle bolts and tee bars to ground strips with screws and washers as outlined in (b) above.

(f) Plaster Surface on Concrete or Hollow Tile Arch—Same as (d) or (e) above.

(g) Bar Joist Construction—Tee bars shall be wired or clipped to bottom of joists.

(h) Suspended Ceilings, Direct Suspension—Suspend Tee bars at proper level by fastening to metal strap hangers which shall be securely anchored to supporting structure. Strap hangers shall be placed not over 4 ft. on centers. In all cases, tee bars shall be 2 ft. on centers unless otherwise specified.

Placement of Units—Assemble spacer grids and rock wool pads in Acoustimetal pans and push turned-up ends of pans into the spring clips of the tee bars.

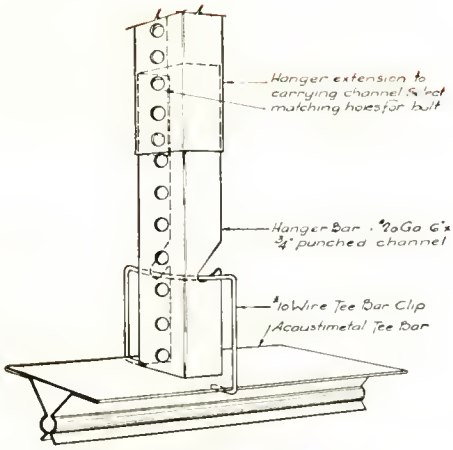
Finishing—Where the Acoustimetalled area finishes against walls or other vertical surfaces, the Acoustimetal pans shall be cut to fit. The edges of the pans shall be supported by:

(a) by resting on the flange of channel sections furnished and secured to the vertical surface by the acoustical contractor.

(b) by tacking to wood grounds furnished and installed by the carpenter contractor.

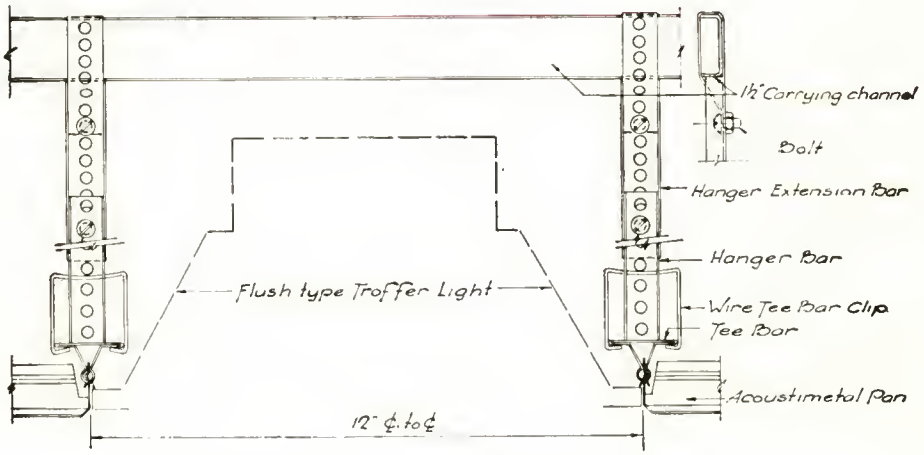
If edge channel sections are used, their bottom flanges, (which serve as cover heads) shall be prime painted before installation. If pans are tacked to wood grounds, the tacked edges shall be covered with wood mouldings supplied and installed by the carpenter contractor.

GOLD BOND ACOUSTIMETAL

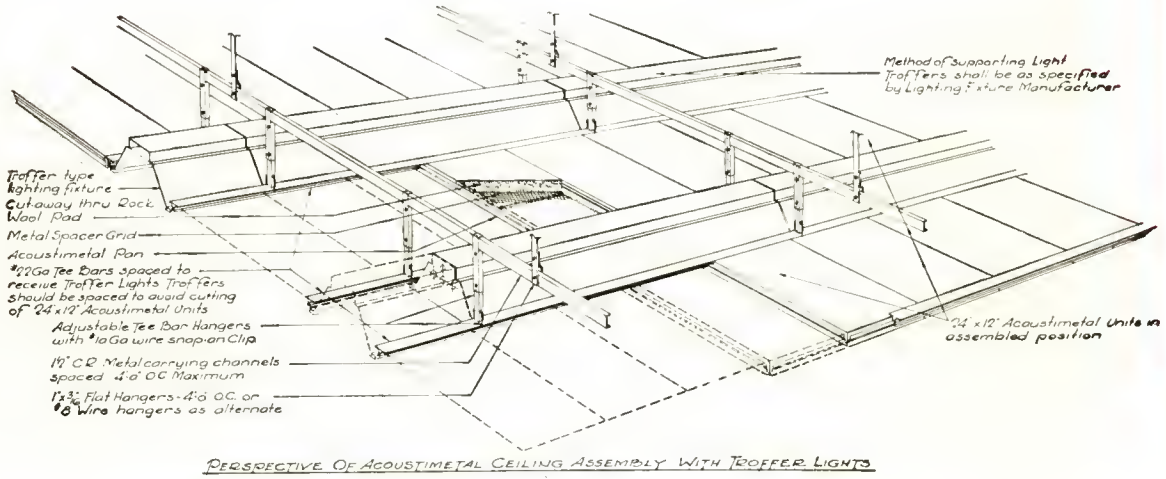


DETAIL OF TEE BAR HANGER

Larger scale prints of these perspective drawings will be sent free of charge to interested architects or engineers.



SECTION DETAIL AT TROFFER



PERSPECTIVE OF ACOUSTIMETAL CEILING ASSEMBLY WITH TROFFER LIGHTS

Gold Bond

SOUND CONTROL PRODUCTS

SPRAYED "LIMPET" ASBESTOS . . . Fireproof. Especially adaptable to irregular surfaces.

"LIMPET" is an acoustical material, simple and unique in composition and application, consisting of pure asbestos fibres mixed with a special binder and sprayed on the surface to any desired thickness. Comes ready to apply.

Fireproof . . . Permanent

A thin mist of water combined with asbestos fibres dampens the binder and produces a light, fluffy, snow-like blanket which bonds tightly with the surface. It is fireproof . . . rot-proof . . . permanent. Pressing with a cork float gives a beautiful finish.

Sprayed "Limpet" Asbestos can be painted repeatedly without destroying its acoustical properties. May be scored wet to produce decorative effects. Will retain its beauty and deliver satisfactory acoustical correction year after year.

Double Action Sound Reduction

Sprayed "Limpet" Asbestos gives double acoustical value. The continuous seamless blanket snubs sound by diaphragmatic action and absorbs sound because of its porosity. It is ideal for monolithic installations even where intricate design is involved.

Sprayed "Limpet" Asbestos imposes no limitations on the architect. Can be applied to any clean surface, barrelled ceilings, curves, decorative recesses, and intricate corners. Installed by factory-appointed Gold Bond acoustical applicators. See directory on back cover.

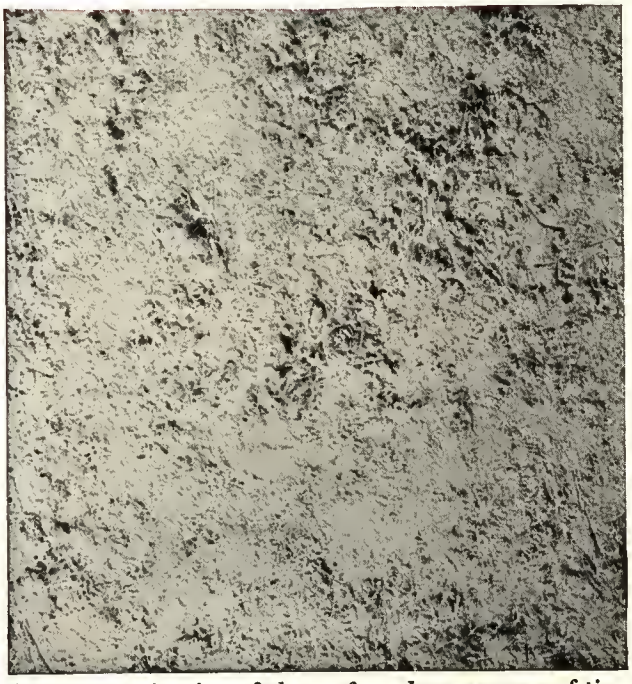
Sound Absorption Data

Authority: Acoustical Materials Association

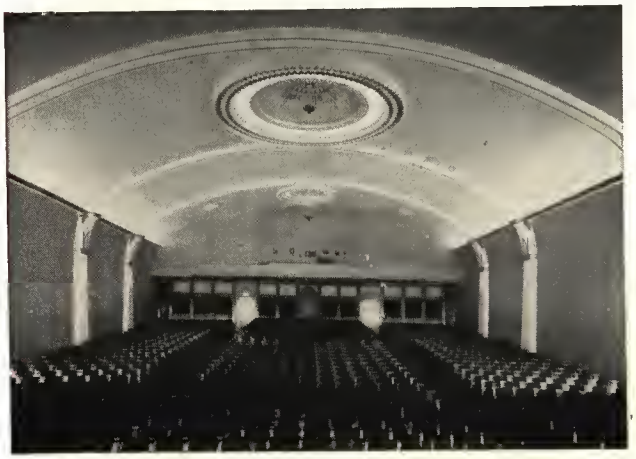
Backing	Thickness	Painting	FREQUENCY Cycles per Second						Noise Reduction Coefficient
			128	256	512	1024	2048	4096	
A	¾"	2 Coats	.09	.23	.67	.90	.93	.87	.70
B	½"	Unpainted	.25	.78	.97	.81	.82	.85	.85
B	¾"	Unpainted	.41	.88	.90	.88	.91	.81	.90
B	¾"	10 Coats	.48	.91	.91	.86	.87	.87	.90

A **SOLID BACKING**—For this test the "Limpet" was sprayed on a solid backing. The panels were laid face up on the floor of the reverberation chamber. This is equivalent to application on a solid surface such as plaster or masonry.

B **METAL LATH**—This group of tests was made on "Limpet" sprayed directly on metal lath with an air space behind the lath. The thickness of "Limpet" shown is measured in each case from the back of the lath. Notice particularly the high sound absorption at all frequencies when so applied.



A close examination of the surface shows a mass of tiny sound-trapping ducts, but when observed from normal eye level a Sprayed "Limpet" Asbestos application appears comparatively smooth and stone-like.



Sprayed "Limpet" Asbestos is the ideal acoustical material for curved walls like this. "Limpet" from wainscot to cove. Melrose Theatre, Los Angeles.

Sprayed "Limpet" Asbestos brought sound conditioning to this dining room at the Engineers' Club at Dayton, Ohio without disturbing the ceiling design.

TRADE MARK "LIMPET" REGISTERED U. S. PATENT OFFICE

Gold Bond ACOUSTICAL PLASTER

MACOUSTIC . . . New-formula acoustical plaster for fine-grained monolithic finish. Fireproof.

THE NEW Gold Bond Macoustic is a decorative, fireproof, sound-absorbing material that can be applied by any journeyman plasterer. With it, effective sound conditioning can be built into almost any new structure at very little expense beyond the cost of normal plastering.

Adaptable

Gold Bond Macoustic may be applied over flat or curved surfaces, coves and mouldings in the same manner as standard gypsum finish plasters. It imposes no limitations on architectural design. It may be used for all ceiling areas except over heated swimming pools or in other locations where continued high humidity is to be expected.

Pre-Colored

Macoustic is pre-colored in five standard ceiling tints, Natural (Oyster White), Ivory, Cream, Buff, Caenstone. Its fine grained surface requires no paint.

When special colors or decorative treatments are desired, Gold Bond Macoustic may be spray-painted with any good water-thinned interior wall paint without appreciable loss of sound absorption. Gold Bond Sunflex water-thinned paints are particularly recommended. These paints may be toned to any desired colors with Gold Bond Crafcolor.

Uniform Quality

To insure a uniform product of high sound absorption, Gold Bond Macoustic is factory blended under precise laboratory control and is delivered to the job in original bags. Notice that troweling to a smoother finish raises rather than lowers the noise reduction coefficient!

Permanent

Gold Bond Macoustic is a mineral product which does not deteriorate after application either in strength or in sound absorbing efficiency. It is fireproof. It may be vacuum cleaned or painted to renew its fresh appearance.

This photographic cross-section shows the granular structure of Macoustic which creates millions of inter-connecting air pockets which help to give this acoustical plaster its high coefficient of noise reduction.

SOUND ABSORPTION COEFFICIENTS
B. S. Test No. VI-2-TN—107590-a-1106-1

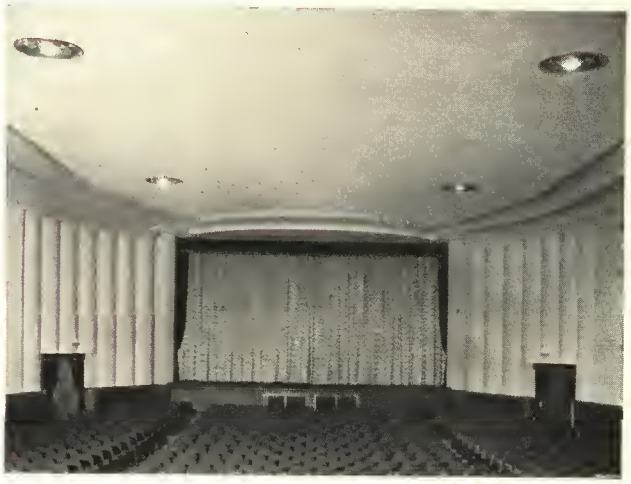
FREQUENCIES	128	256	512	1024	2048	4096	NOISE REDUCTION COEFFICIENTS
½" Trowel Finish	.23	.25	.50	.76	.79	.80	.60
½" Float Finish	.21	.24	.42	.76	.82	.76	.55

OFFICES. Large and small offices with Gold Bond Macoustic on the ceilings are quieter places to work in.

RESTAURANTS. Food and service seem better in restaurants which have been sound-conditioned with Macoustic.

GOLD BOND "MACOUSTIC" ACOUSTICAL PLASTER

CHURCHES. Macoustic sound conditioning enhances beauty and dignity of churches without compromising architectural design, insures perfect audibility.



THEATRES. Effective sound conditioning is built into theatres with Gold Bond Maconstic. Equally important in public buildings is the fact that Maconstic is fireproof.

SPECIFICATIONS

Scope

All ceiling areas (or the areas designated) shall be covered with Gold Bond Macoustic.

Material

Aeonstieal plaster covered by this speeification shall be National Gypsum Company's Gold Bond Maeonstie in the color speeified (Natural, Ivory, Buff, Cream or Caenstone). It shall be delivered in original bags.

Base

Gold Bond Maeonstie shall be applied only over a uniform, dry base coat of gypsum plaster. The base coat shall be level and thoroughly eross-raked.

Mixing

Mixing shall be done with elean tools and mixing equipment. Nothing but clean water shall be added to Maconstie Aeonstieal Plaster. Mixing shall be done as specified in manufaeturer's printed instructions.

Application

Maconstie shall be applied in two eoats, eaeh eoat to be ¼" or ⅜" thiek. All details of applieation shall be in strict aeeordanee with the National Gypsum Company's printed instructions whieh aecompany eaeh shipment.

Float Finish

Macoustic shall be applied with a minimum of trowel pressure and finished lightly with a wood shingle float as the water sheen is leaving the surfaee.

Trowel Finish

Maconstie shall be applied with a minimum of pressure and troweled to a uniform texture before the water sheen leaves the surfaee.

Painting

If higher than usual light reflection or speeial eolors or decorative effeets are desired, only water-thinned interior wall paints shall be used. The paint shall be applied by spraying. The first eoat shall be thinned with one part of water to one part of paste; subsequent eoats with two parts of water to one part of paste. If these preeautions are observed there will be no appreeiable loss of sound absorption. Gold Bond Sunflex Paints are particularly recommended beeause of their exceptional hiding power. They may be toned with Crafeolors to any desired tint or shade.

SCHOOLS. Good lighting, proper sound control are recognized aids to edneation. Maconstie is inexpensive enough for small schools yet appropriate for finest universities.

AUDITORIUMS. When used for assemblies, Macoustic reduces reverberations and makes hearing conditions ideal. When used in a gym, noise is effectively hushed.

ACOUSTICAL ENGINEERING SERVICE

ANYWHERE IN THE UNITED STATES

GOLD BOND Acoustical Contractors are experts in Sound Control. They are well-established, responsible concerns, trained and experienced in acoustical work of all kinds. Their reputation and standing are backed by a long list of outstandingly successful installations.

Located at strategic points throughout the United States, Gold Bond Acoustical Contractors are readily available for on-the-spot consultation. They will gladly recommend the materials and the type of installation best suited to the job.

Gold Bond Acoustical Contractors are equipped to handle any type of "sound conditioning" . . . whether it concerns the elimination of unwanted noise or the treatment of building interiors to provide better hearing conditions. Skilled, competent mechanics insure proper application of the acoustical materials.

The facilities of National Gypsum Company's Research Laboratories and its Engineering Department are ready to serve Government agencies or private interests having special sound control problems.

CALIFORNIA
Sound Control Company
Los Angeles
Van Arsdale & Harris Co.
San Francisco

COLORADO
John C. Reeves & Company
Denver

DELAWARE
Charles M. Wall, Inc.
Philadelphia, Pa.

DISTRICT OF COLUMBIA
Griffith-Consumers Company
Washington

FLORIDA
Walton Flooring Company
Miami

GEORGIA
Lewis & Company
Atlanta

ILLINOIS
Fisher-Busse Company
Chicago

INDIANA
John F. Kelley Company
Warsaw
General Insulation Co.
Evansville
General Asbestos & Supply Co.
Indianapolis
Fisher-Busse Company
Chicago, Ill.
Myron Cornish & Company
Dayton, Ohio

IOWA
H. B. Buckham & Company
Des Moines
Porter-Trustin Company
Omaha, Nebr.

KANSAS
Kelley Asbestos Products Co.
Wichita

KENTUCKY
Braun Acoustical Co.
Louisville
Myron Cornish & Company
Dayton, Ohio

LOUISIANA
J. A. Walsh & Company
Houston, Texas
Nachary Bldg. Supply Co.
New Orleans

MAINE
Dillaby Fireproofing Co.
Cambridge, Mass.

MARYLAND
Griffith-Consumers Company
Washington, D. C.
Charles M. Wall, Inc.
Philadelphia, Pa.

MASSACHUSETTS
Dillaby Fireproofing Co.
Cambridge

MICHIGAN
Wolverine Tile & Flooring Co.
Grand Rapids
John F. Kelley Company
Warsaw, Ind.
Turner-Brooks, Inc.
Detroit

MINNESOTA
Building Specialties Co.
Moorhead
The Hauenstein Company
Minneapolis

MISSOURI
Kelley Asbestos Products
Kansas City
Missouri Builders Specialty Co., Inc.
St. Louis

NEBRASKA
Porter-Trustin Company
Omaha

NEVADA
Van Arsdale & Harris Co.
San Francisco, Calif.

NEW HAMPSHIRE
Dillaby Fireproofing Co.
Cambridge, Mass.

NEW JERSEY
Charles M. Wall, Inc.
Philadelphia, Pa.

NEW YORK
National Acoustics
New York
M. F. Rees & Company
Buffalo

NORTH CAROLINA
Bost Building Equipment Co.
Charlotte
L. S. Febre Company
Norfolk, Va.

NORTH DAKOTA
Building Specialties Co.
Moorhead, Minn.

OHIO
Wilson Flooring Company
Columbus
George L. Freeman Co.
Toledo
Myron Cornish & Company
Dayton

OKLAHOMA
Kelley Asbestos Products Co.
Tulsa
Acoustical Sales & Plaster Co.
Oklahoma City

OREGON
Northwest Sound Control Co.
Seattle, Washington

PENNSYLVANIA
Lackawanna Linoleum Store
Scranton
Limbach Company
Pittsburgh
M. F. Rees & Company
Buffalo, N. Y.
Charles M. Wall, Inc.
Philadelphia

RHODE ISLAND
Dillaby Fireproofing Co.
Cambridge, Mass.

TENNESSEE
Eustis Lancaster Associates
Johnson City
Fischer Lime & Cement Co.
Memphis

TEXAS
J. A. Walsh & Company
Houston
Lydick Enterprises
Ft. Worth

VERMONT
Dillaby Fireproofing Company
Cambridge, Mass.

VIRGINIA
L. S. Febre Company
Norfolk
McL. T. O'Ferrall & Company
Richmond
Griffith-Consumers Company
Washington, D. C.

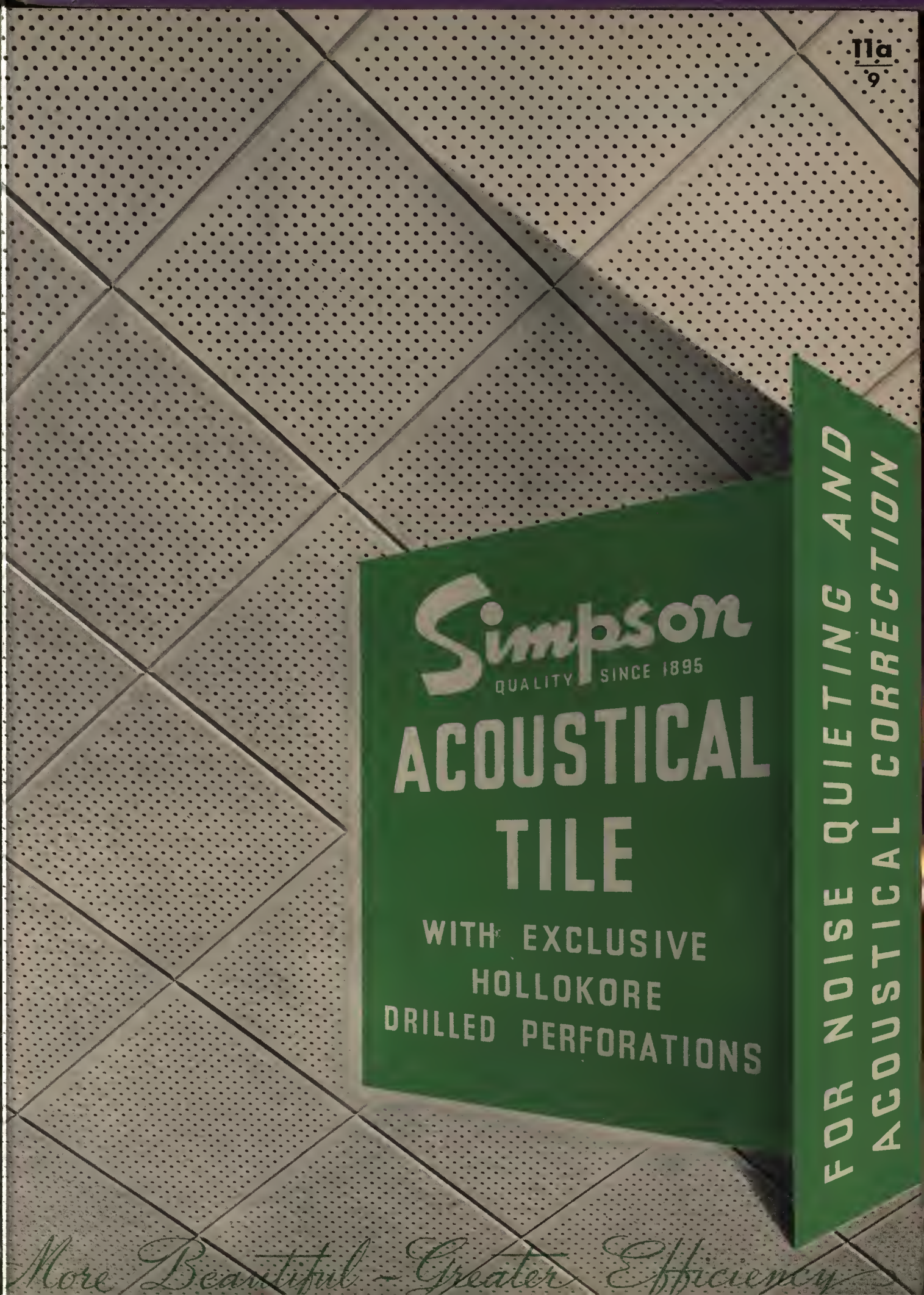
WASHINGTON
Northwest Sound Control Co.
Seattle

WEST VIRGINIA
Asbestos & Insulating Co.
Charleston

WISCONSIN
Taylor Insulation Company
Merrill
Fisher-Busse Company
Chicago, Ill.

WYOMING
John C. Reeves & Company
Denver, Colorado

NATIONAL GYPSUM COMPANY • Buffalo 2, N. Y.


Simpson
QUALITY SINCE 1895
ACOUSTICAL
TILE
WITH EXCLUSIVE
HOLLOKORE
DRILLED PERFORATIONS
FOR NOISE QUIETING AND
ACOUSTICAL CORRECTION
More Beautiful - Greater Efficiency

Simpson
QUALITY SINCE 1895

WITH EXCLUSIVE SIMPSON HOLLO

THIS superior product, developed in the Simpson Research Laboratories, offers features never before obtainable in a perforated fiber acoustical tile. Its clean, drilled perforations, deluxe finish on surface and bevels, and higher sound absorption make Simpson Acoustical Tile ideal for noise-quieting and acoustical correction.

Simpson Acoustical Tile is made from the long strong fibers of the matchless Douglas fir. It is made in a new plant using newly developed processes designed to insure quality and a high degree of uniformity.

HIGHER SOUND ABSORPTION

Simpson Acoustical Tile has the highest noise reduction coefficients of all drilled fiber acoustical materials in the most widely used thicknesses and types of mountings, according to tests accepted by the Acoustical Materials Association. For example, one-half inch Type S-1 Simpson Acoustical Tile cemented to solid backing, or on furring strips, has the highest average sound absorption values (noise reduction coefficients) of any perforated material on the market in the same thickness.

EXCLUSIVE HOLLOKORE DRILLING PROCESS

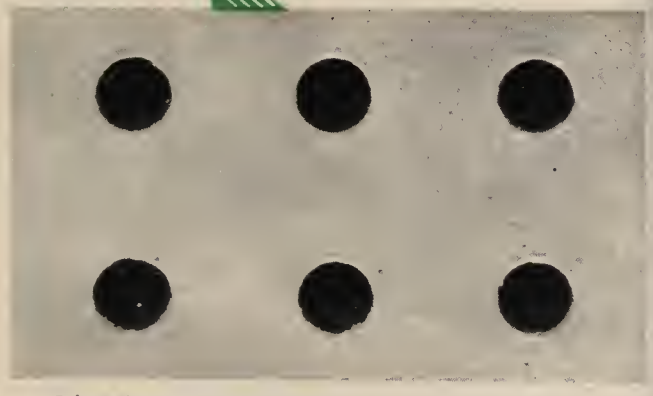
Only Simpson Acoustical Tile has the new and exclusive HOLLOKORE drilled perforations—the greatest advance in perforated fiber acoustical material in many years. The HOLLOKORE drilled perforations do a better job of soaking up noise . . . do a more permanent job because of greater paintability without affecting acoustical efficiency. Holes which are punched or made with a twist drill have ragged edges which result in a tendency to bridge over when repainted. By the exclusive HOLLOKORE process the drilled perforations in Simpson Acoustical Tile are uniformly round, with clean, smooth edges. There is nothing to encourage unsightly bridging of the paint when redecorating. Because of the HOLLOKORE drilled perforations, Simpson Acoustical Tile can be painted repeatedly without impairing its acoustical efficiency.

THICKNESSES AND FINISH

Simpson Acoustical Tile is made in thicknesses of ½", ⅝" and 1". Each square foot has 484 perforations, $\frac{3}{16}$" in diameter, extending to ⅛" of the back surface. Bevels are finished in the same attractive white as the surface, giving a more finished and pleasing appearance to the completed installations. The special factory finish has high light reflection, without glare.

LOW MAINTENANCE COST

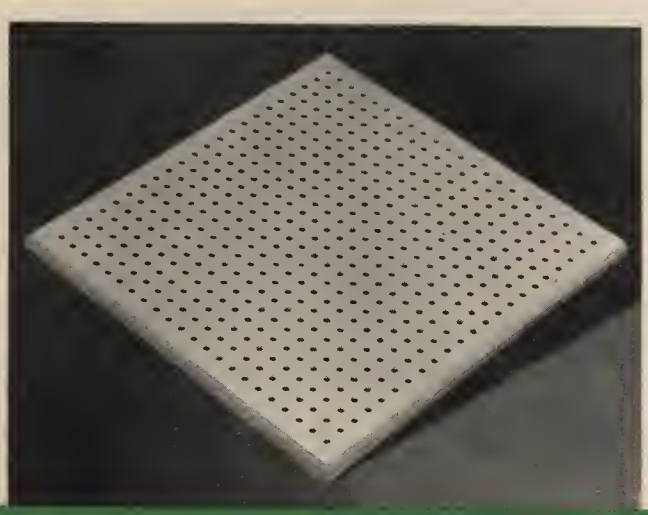
The initial cost of Simpson Acoustical Tile is lower than that of similar materials with comparable sound absorption. Maintenance costs are also lower because of the clean, HOLLOKORE drilled perforations, and superior surface finish. It is easy to clean and can be painted repeatedly.



Enlorged ond unretouched photograph of o portion of the surfoce of Simpson Acousticol Tile showing the round, cleon, HOLLOKORE drilled perforations.

SPECIFY A MINIMUM OF 60% SOUND ABSORPTION

Now, for the first time, a minimum noise reduction coefficient of .60 can be specified *without increasing costs.* Experience has demonstrated, and scientific analyses confirm, that a material having a noise reduction coefficient of .60 is the minimum ceiling treatment necessary to quiet effectively the average office, restaurant, bank, schoolroom, corridor or similar room of normal dimensions. One-half inch Simpson Acoustical Tile installed on a solid backing provides a noise reduction coefficient of .60 (.65 on furring strips). *No other perforated material of the same thickness has these high values.* And, of course, one-half inch material is lower in cost than thicker materials. So, alert architects are now specifying Simpson Acoustical Tile with a minimum noise reduction coefficient of .60 to save money for their clients *without sacrificing performance.*



SIMPSON LOGGING COMPANY

ACOUSTICAL TILE

TERMITE, MOLD PROTECTED

decay termite Protected WITH PENTACHLOROPHENOL

Simpson Acoustical Tile is treated with Pentachlorophenol, a modern preservative which gives extra tested-protection against mold and mildew in addition to termites, decay and dry rot.

INSULATING VALUE

The long, strong Douglas fir fibers, from which this improved acoustical tile is made, result in a material having low heat conductivity which means better insulating qualities—and lower fuel bills.

WIDE VARIETY OF USES

Architects are finding that Simpson Acoustical Tile offers exceptional advantages for effective noise-quieting and acoustical correction in a wide variety of rooms, such as offices, clubs, schools, auditoriums, stores, hospitals, factories, churches, theatres, banks, recreation rooms, dens and many others.

ACOUSTICAL FIELD SERVICE

Simpson provides an acoustical field service headed by one of the country's outstanding acoustical engineers. His wide experience in sound research and practical experience in architectural acoustics is made available without charge to architects and Simpson Acoustical Contractors.

A FOREST CONSERVATION PRODUCT

Simpson Acoustical Tile is manufactured in a large, modern plant at Shelton, Washington. Under the Simpson sustained yield program no extra trees are cut to produce this and the other Simpson Woodfiber products.

Short Form Specifications

(Noise-Quieting Installation)

1. ACOUSTICAL MATERIAL. The ceiling and/or wall surfaces as indicated in the Schedule of Finishes or as noted below shall be covered with an acoustical tile having 484 clean-drilled perforations per square foot. The material shall be factory finished on both surface and bevels and its light reflection value shall not be less than .77. It shall be treated at the factory with pentachlorophenol to insure against attack by termites, fungus growth, dry rot and mildew.

   When moterial is to be cemented to solid backing, use Parographs 2 and 3 immediately below. When installatian is to be an furring strips, use olternate Paragraphs 2 and 3.

2. NOISE REDUCTION COEFFICIENT. The acoustical tile shall have a minimum noise reduction coefficient on No. 1 mounting of_____ [insert desired coefficient: .60 (½"), .65 (⅝"), .75 (1")] as determined by tests accepted by the Acoustical Materials Association.

3. INSTALLATION. Installation shall be by qualified mechanics under the direct supervision of the manufacturer's authorized representative. The acoustical material shall be installed by cementing to a rodded brown coat of plaster [or plasterboard, or concrete] provided in place by others. The adhesive used and the workmanship shall be strictly in accordance with the recommendations of the acoustical tile manufacturer and the completed installation shall be guaranteed free from defects of material or workmanship for a period of one year from date of acceptance.

   (Alternate 2.) NOISE REDUCTION COEFFICIENT. The acoustical tile shall have a minimum noise reduction coefficient on No. 2 mounting of_____ [insert desired coefficient: .65 (½"), .70 (⅝"), .75 (1")] as determined by tests accepted by the Acoustical Materials Association.

   (Alternate 3.) INSTALLATION. Installation shall be made by qualified mechanics under the direct supervision of the manufacturer's authorized representative. 1"x3" [or 1"x4"] wood furring strips shall be installed 12" o.c. The strips shall be accurately leveled and securely nailed in place. The acoustical tile shall be secured to the furring strips by not less than four nails per square foot

Following are the Sound Absorption Coefficients and Other Data on SIMPSON ACOUSTICAL TILE Accepted by the Acoustical Materials Association.

	Thickness	Mounting*	Coefficients						Noise Red. Coef.**	Unit Size Tested	Light Reflection		Wt. Lbs. Per Sq. Ft.	Surface
			128	256	512	1024	2048	4096			Color	Value		
Type S-1	½"	1	.09	.16	.67	.84	.76	.72	.60	12"x12"	W	.77	.60	Perforated 484 holes per sq. ft.; perforations 3/16" in diameter, ½" a.c. Finished two coats face and bevels.
Type S-1	½"	2	.07	.37	.71	.75	.77	.69	.65	12"x12"	W	.77	.60	
Type S-2	⅝"	1	.06	.18	.74	.90	.78	.70	.65	12"x12"	W	.77	.80	
Type S-2	⅝"	2	.14	.50	.70	.83	.78	.71	.70	12"x12"	W	.77	.80	
Type S-5	1"	1	.12	.31	.98	.94	.70	.64	.75	12"x12"	W	.77	1.10	
Type S-5	1"	2	.22	.51	.89	.98	.71	.66	.75	12"x12"	W	.77	1.10	

*Mountings: No. 1 cemented to plasterboard. Considered equivalent to cementing to plaster or concrete ceiling. No. 2 nailed to 1"x2" wood furring 12" o.c.

**The noise reduction coefficient is the average of the coefficients at frequencies from 256 to 2048 cycles inclusive, given to the nearest 5%. This average coefficient is recommended for use in comparing materials to be applied in offices, hospitals, banks, corridors, etc.

PRODUCTS OF SIMPSON RESEARCH

Simpson ACOUSTICAL TILE

QUALITY SINCE 1895

and the heads shall be concealed in the corner holes of the acoustical tile. The type of nails used and the workmanship shall be strictly in accordance with the recommendations of the acoustical tile manufacturer and the completed installation shall be guaranteed free from defects of material or workmanship for a period of one year from date of acceptance.

4. PATTERN. The acoustical tile shall be laid in a pattern as indicated on the drawings. All lines shall be straight and true and work shall be started at the center of each room or panel. Borders shall never be less than 6 inches wide. The edges of the panels shall be neatly finished with a moulding of the same material as the acoustical tile.

(Auditorium Correction Installation)

The specification for this type of installation is identical with the above specification for a noise-quieting installation except for Paragraph 2 which should read as follows:

[WHEN MATERIAL IS TO BE CEMENTED TO A SOLID BACKING]

2. SOUND ABSORPTION VALUES. The acoustical tile shall have a minimum sound absorption coefficient at 512 cycles per second of..... [insert desired coefficient: .67 (½"), .74 (⅝"), .98 (1")] and a minimum average value (noise reduction coefficient) of..... [insert desired coefficient: .60 (½"), .65 (⅝"), .75 (1")]. All values shall be as determined by tests accepted by the Acoustical Materials Association for the material installed on a No. 1 mounting.

[WHEN MATERIAL IS TO BE INSTALLED ON FURRING STRIPS]

(Alternate 2.) SOUND ABSORPTION VALUES. The acoustical tile shall have a minimum sound absorption coefficient at 512 cycles per second of.....[insert desired coefficient: .71 (½"), .70 (⅝"), .89 (1")] and a minimum average value (noise reduction coefficient) of.....[insert desired coefficient: .65 (½"), .70 (⅝"), .75 (1")]. All values shall be as determined by tests accepted by the Acoustical Materials Association for the material installed on a No. 2 mounting.

Simpson Acoustical Tile on ceiling of Library, Beverly Vista School, Beverly Hills, California.

Simpson Acousticol Tile on walls of Center Theater, Extension Center, University of Washington, Seattle, Washington.

WOODFIBER DIVISION • SIMPSON LOGGING COMPANY

Plant at Shelton, Washington

SALES DIVISION: 1010 White Bldg., Seattle 1, Washington

For More Information See Your Nearest Simpson Acoustical Contractor.

ACOUSTICS NORTHWEST
Builders Exchange Bldg.
Phone: Atwater 6443
Portland 4, Oregon

ANGELES INDUSTRIES
984 McGarry St.
Phone: Trinity 8121
Los Angeles, California

ASBESTOS PRODUCTS CO.
1780 Kettner Blvd.
Phone: Franklin 7665
San Diego, Calif.

M. H. BALDWIN
2804 East Hawthorne
Phone: 2804-J
Tucsan, Arizona

COAST INSULATING PRODUCTS
634 Sauth Western Ave.
Phone: Fitzroy 1118
Las Angeles 5, Calif.

CONSOLIDATED ROOFING & SUPPLY CO.
520 S. 7th Ave.
Phone: 47888
Phoenix, Arizona

CONTINENTAL LUMBER CO.
P. O. Box 2042
Phone: 450
Baise, Idaha

CRAIG & PULLEN
338 Ward St.
Phone: 6107
Honalulu, T. H.

CRAMER COMPANY
345 Vermant St.
Phone: Market 1-0411
San Francisca, Calif.

CRAMER COMPANY
1933 Merced St.
Phone: 3-1131
Fresna, Calif.

CRAMER COMPANY
1224 I Street
Phone: 2B991
Sacramenta, Calif.

DALE TILE CO.
1020 LaSalle Ave.
Phone: Br. 8831
Minneapolis 2, Minn.

ELLIOTT BAY LUMBER CO.
600 W. Spakane St.
Phone: Elliatt 8080
Seattle, Washingtan

LUMBER DEALERS, INC.
T. A. Bax 5222
Phone: Tabar 6141
Denver 17, Calarada

LUMBER DEALERS, INC.
423 N. 33rd
Phone: 3911
Billings, Mant.

MANSUR MATERIALS INC.
E-210 Riverside Ave.
Phone: Main 1249
Spakane, Washingtan

UTAH PIONEER CORP.
333 W. 1st Sauth
Phone: 4-1717
Salt Lake City 14, Utah

WARREN SALES CO.
1211 East McDawell
Phone: 3-8975
Phaenix, Arizana

AT-ACS48-15

Lithographed in U. S. A.

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SPRAYED INSULATION, INC.

and painted SprayKote treated
de walls—Charleston Gardens,
Altman & Sons, New York, N. Y.

SprayKote

Trademark Reg. U. S. Pat. Off.

acoustical fibre insulation

approved by Board of Standards and Appeals,
New York City, for acoustical thermal insulation

for Sound Correction

SprayKote characteristics

SprayKote is an all-purpose acoustical and thermal insulation for application to surfaces of wood, metal, glass, rock lath, concrete, plaster and materials previously coated with oil paint.

SprayKote consists of six different asbestos and mineral wool fibres. The binders, while water soluble, are not affected by moisture condensation, steam, or roof leaks—once they are set.

Sprayed Insulation, Inc. has its own fibre processing plant in which the different fibres are refined and blended. This concentration of effort assures uniform quality, imperative in this type of work.

Because SprayKote is monolithic, it eliminates cracks, seams and holes. It possesses a high light reflection factor. It can be readily painted and repainted with casein paint in any color. It is easily cleaned with a duster, is verminproof, water-repellent, rust-resistant, wind-tight and fireproof. It is light in weight and withstands vibration.

SprayKote is widely used for acoustical correction and insulation in offices, libraries, theatres, auditoriums, study halls, churches, and similar interiors. It also provides excellent sound deadening for shops, restaurants, and between floors and rooms.

application: SprayKote is applied by means of a spray gun—in thickness of ⅜ inch or more depending upon results desired. After the proper thickness is applied, it is then tamped for texture and spray painted to color specifications. SprayKote is applied by licensed applicators throughout the United States, employing skilled workmen experienced in acoustical treatments.

dust control: The tremendous advantage of SprayKote over similar products is that the patented process practically eliminates the troublesome dust heretofore present during application. This is accomplished by giving the surface a positive (or cationic) electrical charge and the material being applied a negative (or anionic) charge. The resultant action is about the same as a magnet drawing iron filings. Not only does the SprayKote process practically eliminate the dust, but it also provides an increased speed of application affording a more uniform and finer texture; a stronger internal strength. Actually, we have adapted the electrochemical method of dust precipitation to our process of sprayed insulation.

for acoustical correction

SprayKote has an extremely high coefficient of sound absorption as shown in the table below. One application of SprayKote, usually ⅜ inch thick and seldom more than ¾ inch thick, effectively corrects distortion of speech and music. In addition to its high coefficient of noise reduction, SprayKote is completely incombustible; this advantage adds to its value for application in churches, auditoriums, study halls, offices, theatres and similar interiors.

SprayKote has wide application in skating rinks, acoustically difficult because of their large shape. Speech and music broadcast by the public address system are distorted by the rumble of the skates. The rumble is in the troublesome low frequencies, and the materials generally used in construction have little absorption at those frequencies. SprayKote, having a high sound absorption, will entirely correct this difficulty as proved in the report on the Fire Department Repair Shop on page 4. Such areas, SprayKote treated, will then be pleasant and restful in comparison.

sound absorption characteristic of SprayKote

thickness	coefficient					noise reduction coefficient
	128	256	512	1024	2048	
applied to Z ribbed metal lath						
½ in.	.57	.85	.85	.90	.94	.90
applied to any solid backing						
⅜ in.	.37	.19	.38	.71	.76	.51
½ in.	.37	.19	.46	.77	.87	.60
¾ in.	.30	.33	.72	.85	.86	.70
1 in.	.38	.54	.85	.91	.93	.85

Riverbank Laboratories and Bureau of Standard Tests.

specifications

Suggested wording for specifications of "SprayKote" for acoustical purposes:

Material shall be "SprayKote" as manufactured and applied by Sprayed Insulation, Inc., Newark, New Jersey.

"SprayKote" shall be applied by gun method direct to surface provided, to a thickness of ....., having a sound absorption coefficient of .....% at 512 cycles and a noise reduction coefficient of .....%.

The fibre shall be "SprayKote" 1102 and the binder a synthetic resin which, after setting, shall not be affected by water, steam, moisture or condensation.

The above specified material shall be applied and finished as follows:

> An initial coat of anionic binder shall be applied by spray gun to surface to be treated and before this has set, "SprayKote" cationic fibre and binder in sufficient quantity to finish to specified thickness shall be blown on. This shall then be tamped to specified finish by hand and shall conform to contour of area as designed.
>
> This surface shall then be sprayed with a final binder coat in which is included white or any preselected Casein color. Surface to be completely monolithic.

for sound deadening

In shops, testing laboratories, engine rooms and similar interiors, SprayKote is widely used for sound deadening; in such applications, the SprayKote is applied to the walls and ceilings by a spray gun.

In wood stud construction, SprayKote is used between rooms and floors; it practically eliminates the troublesome noises otherwise experienced. It is likewise used for deadening sound in apartment houses—particularly in walls surrounding bathrooms and between floors. SprayKote even reduces the channelling of disturbing noises through partitions of glass or metal. Because of the numerous ways by which noises are channelled into interiors, the manner of applying the SprayKote varies accordingly.

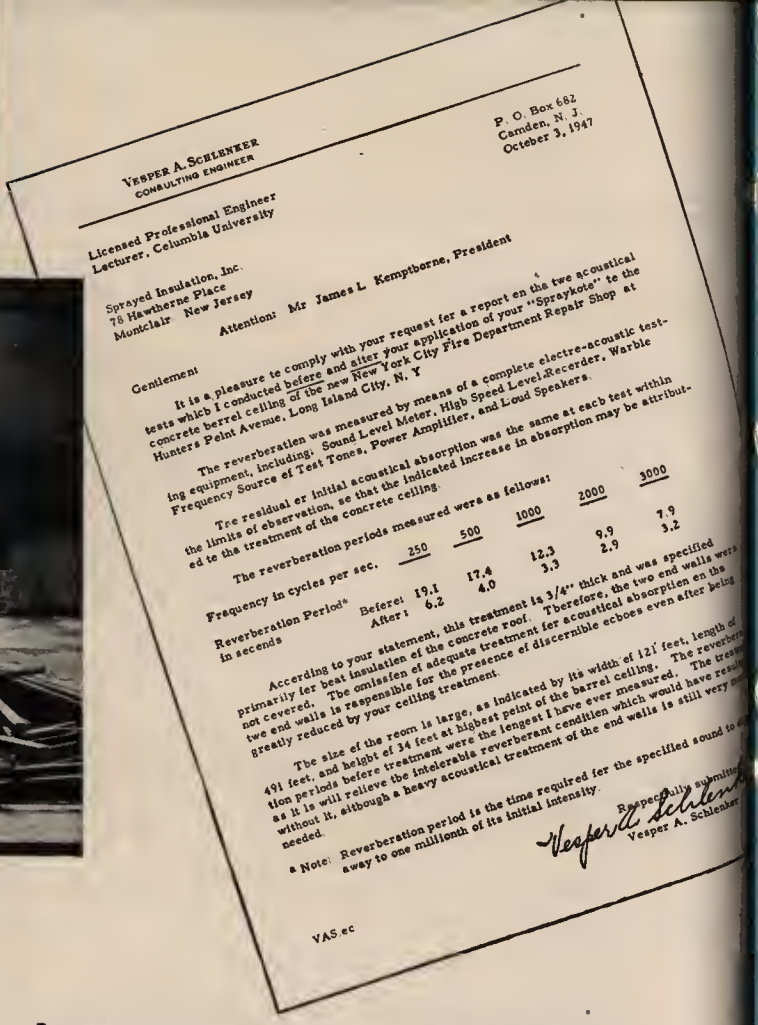
recommendations

Upon receipt of full details of the acoustical problem (including location, size of area and particular conditions), SprayKote engineers will be glad to furnish complete details of recommended application, thickness of SprayKote and estimated cost.

When Federal Specification No. SS-A-111 is revised, the National Bureau of Standards, U. S. Department of Commerce, will list SprayKote.

Sprayed Insulation, Inc.

Spraykote
sound correction



VESPER A. SCHLENKER
CONSULTING ENGINEER

P. O. Box 682
Camden, N. J.
October 3, 1947

Licensed Professional Engineer
Lecturer, Columbia University

Sprayed Insulation, Inc.
78 Hawthorne Place
Montclair New Jersey

Attention: Mr James L. Kempthorne, President

Gentlemen:

It is a pleasure to comply with your request for a report on the two acoustical tests which I conducted before and after your application of your "Spraykote" to the concrete barrel ceiling of the new New York City Fire Department Repair Shop at Hunters Point Avenue, Long Island City, N. Y.

The reverberation was measured by means of a complete electro-acoustic testing equipment, including: Sound Level Meter, High Speed Level-Recorder, Warble Frequency Source of Test Tones, Power Amplifier, and Loud Speakers.

The residual or initial acoustical absorption was the same at each test within the limits of observation, so that the indicated increase in absorption may be attributed to the treatment of the concrete ceiling.

The reverberation periods measured were as follows:

Frequency in cycles per sec.	250	500	1000	2000	3000
Reverberation Period* in seconds Before:	19.1	17.4	12.3	9.9	7.9
After:	6.2	4.0	3.3	2.9	3.2

According to your statement, this treatment is 3/4" thick and was specified primarily for heat insulation of the concrete roof. Therefore, the two end walls were not covered. The omission of adequate treatment for acoustical absorption on the two end walls is responsible for the presence of discernible echoes even after being greatly reduced by your ceiling treatment.

The size of the room is large, as indicated by its width of 121 feet, length of 491 feet, and height of 34 feet at highest point of the barrel ceiling. The reverberation periods before treatment were the longest I have ever measured. The treatment as it is will relieve the intolerable reverberant condition which would have resulted without it, although a heavy acoustical treatment of the end walls is still very much needed.

* Note: Reverberation period is the time required for the specified sound to die away to one millionth of its initial intensity.

Respectfully submitted,
Vesper A. Schlenker

VAS:ec

typical application

Seton Hall College, Urban Division	Newark, N. J.
Reuben's Restaurant	New York, N. Y.
Gilmore Steak House	New York, N. Y.
W. & J. Sloane	New York, N. Y.
Standard Oil Co. of N. J.	Bayway, N. J.
Reynolds Metals Co.	Harrison, N. J.
Marine-Midland Trust Co.	New York, N. Y.
Charleston Gardens, B. Altman & Co.	New York, N. Y.
Naval Reserve Armory	Elizabeth, N. J.
Public Service Corp.	Newark, N. J.
Fire Department Repair Shop	Long Island City, N. Y.
N. Y. State Housing Authority	New York, N. Y.
N. Y. City Housing Authority	New York, N. Y.
International Airport	New York, N. Y.
The Brass Rail	New York, N. Y.
Station W. C. T. C., Chanticleer Broadcasting Co.	New Brunswick, N. J.
Television AM & FM, Radio Station WATV	Newark, N. J.
Republic Aviation Corp.	Farmingdale, N. Y.
Pathe Industries	New York, N. Y.
Western Electric Co.	Kearny, N. J.
Paper Mill Playhouse	Millburn, N. J.
Textron, Inc.	New York, N. Y.
Herald News Offices	Passaic, N. J.
Hotel Commodore	New York, N. Y.
Yankee Stadium Club Room	New York, N. Y.
Tournament Lanes, Inc. Bowling Alleys	Brooklyn, N. Y.

advisory service

Sprayed Insulation, Inc., has inaugurated its SPRAYKOTE service to assist architects and contractors in handling different problems of thermal insulation, acoustical correction, sound deadening and condensation control. This service is rendered by a staff of alert, highly competent men, thoroughly conversant with modern building methods. For complete information about the SPRAYKOTE advisory service contact the national distributor or the representative in your territory. Estimates furnished on request.

SPRAYED INSULATION, INC.

56-58 Crittenden Street, Newark, N. J.

Telephone: Humbolt 5-2372

New York City, Telephone: Enterprise 6407

sold and installed by...

Sound Judgment

"Spray-Acoustic creates ideal hearing conditions in talking picture theatres. What we notice particularly is the naturalness of the tone in all parts of the theatre."

★

"Spray-Acoustic, by reducing the racket and din of the busy banking room, pays dividends in increased efficiency of personnel. Your treatment has worked wonders in our bank. The machine noises have been quieted and we all feel fresher at the end of the day."

★

"A quiet atmosphere in the dining room or restaurant satisfies the discriminating person. Easy conversation in our dining room is now possible because your Spray-Acoustic treatment has eliminated the disturbing room noises."

★

"Effective instruction in schools is possible only under proper acoustical conditions, which are assured with Spray-Acoustic."

The SPRAY-ACOUSTIC process is, as its name implies, a sprayed-on application of material that deadens and absorbs sound. This process fabricates and applies, in one single, efficient, economical operation, a blanket of light, fibrous, cellular covering—in any required thickness such as ¾", 1" or 1¼".

The process consists of shooting incombustible fibrous materials from a specially designed air gun. From the same gun comes an atomized adhesive which mixes with the incombustible fibrous materials, as the mixture leaves the air gun.

The adhesive primes the surface being treated and coats the fibres as they leave the air-gun nozzle. This action causes the fibres to build up in a homogeneous, light-weight, cellular blanket.

Thousands of Spray-Acoustic installations, in all types of acoustical jobs, in various sections of the United States, attest the uniformly satisfactory results coming from its application.

Ease and Quiet with Spray-Acoustic

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Printed in U.S.A. Form No. 12-1

Spray—

THE IDEAL ACOUSTICAL CORRECTION

The Modern Acoustical Treatment

ACOUSTICAL correction is especially desirable, and in many instances quite necessary, wherever the human voice, music or other sound must be transmitted clearly, distinctly and evenly to an audience. This is true of auditoriums, halls, churches, theatres, schools, dining rooms, etc.

Absorption or deadening of sound is also required where noise creates a disturbance or results in making employes nervous and inefficient. Such noise can come from the outside or be created inside. In either case it should be eliminated. Included in this group are offices, shops, factories, etc. Spray-Acoustic applied in such locations insures

TYPICAL SPRAY-ACOUSTIC INSTALLATIONS.....

Acoustic

ABSORBS SOUND LIKE A SPONGE ABSORBS WATER

The Modern Way to Apply It

quiet surroundings, improves quality and increases output.

Spray-Acoustic can be applied directly on any dry, clean, permanent, rigid surface such as masonry, concrete, plaster, gypsum board, ¾″ or thicker and high-rib metal lath 8″ on center.

Spray-Acoustic is manufactured and applied in one operation. The process, application equipment and finished sound-deadening mat are fully protected by domestic and foreign patents. It is applied on a lump-sum contract basis, including labor and material, by authorized applicators.

.....PROOF OF ITS SOUND-DEADENING QUALITIES

SPRAY-ACOUSTIC

SPRAY-ACOUSTIC SOUND TREATMENT

MADE OF MINERAL FIBRE. Spray-Acoustic is composed of 100% mineral fibres and a special Spray-Acoustic atomized adhesive.

GUN APPLIED—Spray-Acoustic is gun applied by the Sprayo-Flake Process (patented) to any surface in any required thickness and surface pigmentation, by specially trained applicators.

APPEARANCE—There are no holes, seams or joints in gun-applied Spray-Acoustic. The finished surface is travertine textured, natural or tamped.

INCOMBUSTIBLE—Spray-Acoustic consists of 100% incombustible mineral fibres, a special Spray-Acoustic adhesive and a colorless or pigmented surface coating.

NO CUTTING OR FITTING—Spray-Acoustic is a continuous blanket that requires no cutting or fitting.

CAN BE REDECORATED—Spray-Acoustic can be redecorated many times with our Spray-Cote Pigmented Surface Coating, with a minimum loss of sound absorbing efficiency.

LIGHT REFLECTION COEFFICIENTS

TYPE X—TAMPED SURFACE	Reflection Factor
Smooth Travertine Texture—Unpainted	.486
Smooth Travertine Texture Painted White Casein	.736
Coarse Travertine Texture—Unpainted	.474
Coarse Travertine Texture Painted White Casein	.784

SOUND ABSORPTION COEFFICIENTS (Bureau of Standards)

TYPE X— APPLIED TO RIBBED METAL LATH

Finish	Thickness Inches	Coefficients 128	256	512	1024	2048	Noise Red. Coeff.
Natural Color Surface	½"	.59	.87	.85	.88	.94	.90
Sprayed 4 Coats Spray-Cote	½"	.65	.79	.80	.70	.83	.80

TYPE X—APPLIED TO PLASTER OR OTHER RIGID BACKING

Finish	Thickness Inches	Coefficients 128	256	512	1024	2048	Noise Red. Coeff.
Tamped Surface Natural Off-White Color	¾"	.12	.41	.71	.74	.77	.65
Tamped Surface Natural Off-White Color	1⅛"	.18	.52	.95	.93	.91	.85
Sprayad 3 Coats Spray-Cote	1⅛"	.15	.47	.88	.92	.87	.80

WHAT SPRAY-ACOUSTIC DOES — Spray-Acoustic applied to the walls or ceilings of a room absorbs the excess noise and reduces reverberation to a point where good hearing and quiet are obtained.

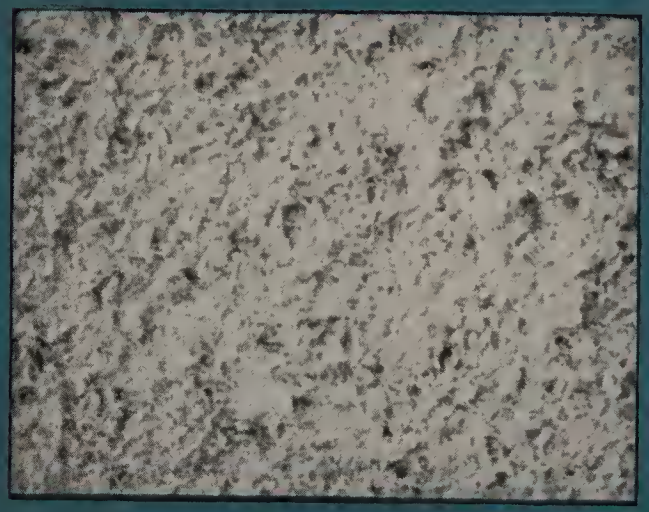
WHY SPRAY-ACOUSTIC SHOULD BE USED—Compare this efficient sprayed-on acoustical treatment with any other—from all angles—cost, efficiency and appearance. The even seamless surface of Spray-Acoustic can be secured in various colors to meet the decorative effects desired. Spray-Acoustic is an ideal treatment for irregular, curved or barreled surfaces as it requires no expensive cutting or fitting. It is tailor-made for the job.

STANDARD TYPES OF SPRAY-ACOUSTIC

TYPE X—A continuous bonded acoustical mat composed of No. 9723 Sprayo-Flake incombustible mineral fibres, with No. 9771 Spray-Acoustic adhesive and surface coating. (See illustration below at left).

TYPE XR—A continuous bonded acoustical mat composed of No. 9702 Sprayo-Flake incombustible blended mineral fibres with No. 9771 Spray-Acoustic adhesive and surface coating. (See illustration below at right).

SPRAYO-FLAKE CO. - - - 2721 Irving Park Road CHICAGO 18, ILL.



Spray-Acoustic Type X Tamped Surface.

Spray-Acoustic Type XR Tamped Surface.

TECHNICAL INFORMATION

ACOUSTONE

T. M. REG. U. S. PAT. OFF.

& AUDITONE

T. M. REG. U. S. PAT. OFF.

ACOUSTICAL TILES

Beauty and Quiet

United States Gypsum

For Building • For Industry

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UNITED STATES GYPSUM

UNITED STATES GYPSUM

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"ACOUSTONE", "AUDITONE", "MOTIF'D", "TEXOLITE", "USG", "RED TOP", "ROCKLATH", "SHEETROCK", "SABINITE", and "PERFATONE" mentianed in this publicatian are registered trademarks owned by United States Gypsum, and are used by it ta distinguish its praducts.

"ACOUSTONE" as used herein identifies the particular mineral acaustical tile;
"AUDITONE" as used herein identifies the particular waad fiber acaustical tile;
"MOTIF'D" as used herein identifies the particular mineral acaustical tile with decarated surface;
"TEXOLITE" as used herein identifies the particular paint;
"USG" as used herein identifies the particular sheathing and sound insulatian;
"RED TOP" as used herein identifies the particular plaster;
"SHEETROCK" as used herein identifies the particular gypsum wallbaard;
"ROCKLATH" as used herein identifies the particular gypsum lath or plaster base;
"PERFATONE" as used herein identifies the particular perfarated metal acaustical tile;
"SABINITE" as used herein identifies the particular acaustical plaster;
all manufactured anly by United States Gypsum.

ACOUSTONE* "F" ACOUSTICAL TILE

DESCRIPTION

ACOUSTONE "F" mineral acoustical tile is manufactured by binding mineral fibers into a light-weight, highly sound-absorbent tile form. The fissured surface closely resembles that of Travertine marble. No two tiles are identical in texture; the pattern is as natural as the veining of fine marble or the grain of wood. Each tile is finish-painted at the factory and is available with accurately formed bevel or square edges. For sizes, etc., see Technical Data Page 5.

FUNCTION AND UTILITY

ACOUSTONE "F" combines high sound absorption with incombustibility in a product of decorative versatility that fits into the architectural scheme as an inconspicuous surface or as the dominant note in the decoration.

High Sound Absorption

Made in two thicknesses, ACOUSTONE "F" provides Noise Reduction Coefficients of .65 and .70. For auditorium use, the absorption at 512 cycles per second is .76 and .85. In both thicknesses the absorption for the higher pitched sounds, which are considered most annoying, is maintained at a high level to produce more effectiveness. (See Technical Data Page 5.)

Fire Resistance

ACOUSTONE "F" serves to retard the spread of fire. It is rated as *incombustible* by the National Bureau of Standards.

Splined for Good Alignment

All square edge ACOUSTONE "F" (no bevel) is kerfed for splines and "back-cut" on all edges to provide tight, inconspicuous joints (see page 4). The surfaces of adjacent tile are held level by the splines and accurate kerfing. The "back-cut" assures closed joints on wavy ceilings. Butted conventional square edge joints that are 1-32″ to 1-16″ out of level cause conspicuous shadows which are exaggerated when lighting fixtures are close to the ceiling line. Concealed splines and "back-cut" minimize this "out-of-level" appearance.

Colors

ACOUSTONE "F" is painted at the factory with a full finish coat of a high grade resin emulsion paint (IMPERIAL TEXOLITE*) on the face and exposed bevels in white or ivory; other standard colors shown on the current USG TEXOLITE color selector are obtainable on special order.

Texture

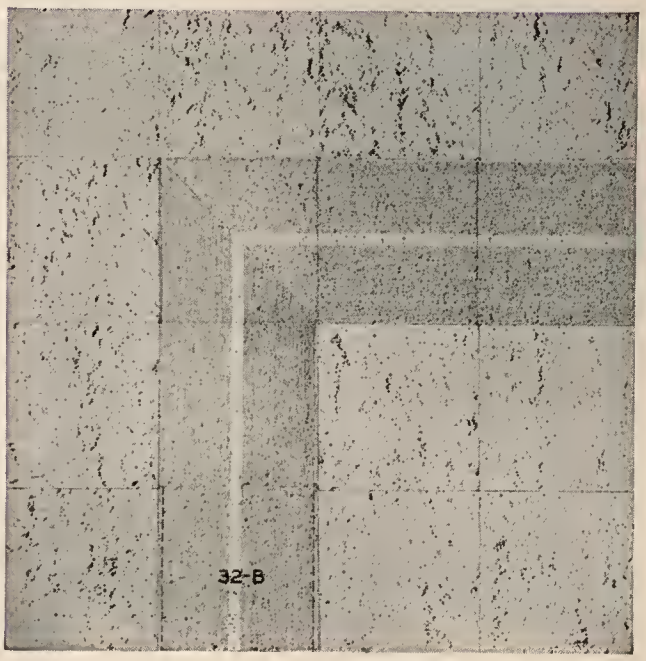
ACOUSTONE "F" is furnished in one texture range only. (See page 15, for special texture on MOTIF'D* ACOUSTONE "F".)

Weight

From years of experience we recommend that acoustical tile cemented on ceilings should weigh no more than 1.75 lbs. per square foot. ACOUSTONE "F" weights do not exceed this. (See Technical Data Page 5.)

Washability

Factory-painted ACOUSTONE "F' may be washed with water and a sponge or cleaned with putty or paste type wallpaper cleaner. Accidental spotting or soiling can usually be removed by this method before over-all redecoration is necessary.



Standard Square Edge ACOUSTONE "F" with MOTIF'D Border

Resistance to Soiling and "Breathing"

The smooth, hard, painted finish of ACOUSTONE "F" resists soiling and minimizes objectionable air travel through the tile proper.

Paintability

Authoritative tests show that ACOUSTONE "F" may be brush or spray painted many times without loss of sound absorption at *512 cycles* per second or in the *Noise Reduction Coefficient*. The effect of repeated coats of paint on ACOUSTONE "F" and other materials may be found in Research Paper RP-1298 "Effect of Paint on Sound Absorption of Acoustical Materials," which is obtainable from National Bureau of Standards, U. S. Department of Commerce, Washington, D. C. Oil, casein, resin emulsion or calcimine types of paint may be used according to normal paint procedures for interior pre-decorated surfaces.

High Light Reflection

ACOUSTONE "F" in standard white finish has a light reflection of 80%; standard ivory, 72%.

Rodent and Vermin Resistance

ACOUSTONE "F", essentially of mineral composition, is highly resistant to rodents and vermin.

Heat Conductivity

The low thermal conductivity of ACOUSTONE ("k" factor = .35) adds heat insulation to top floor ceilings and exterior walls.

LIMITATIONS OF USE

ACOUSTONE "F" mineral acoustical tile is designed for normal moisture conditions. It is not recommended in dishwashing rooms or where it will be exposed to steam or constant high humidity.

It should not be used below wainscot height or where it will be subjected to severe impact or abrasion.

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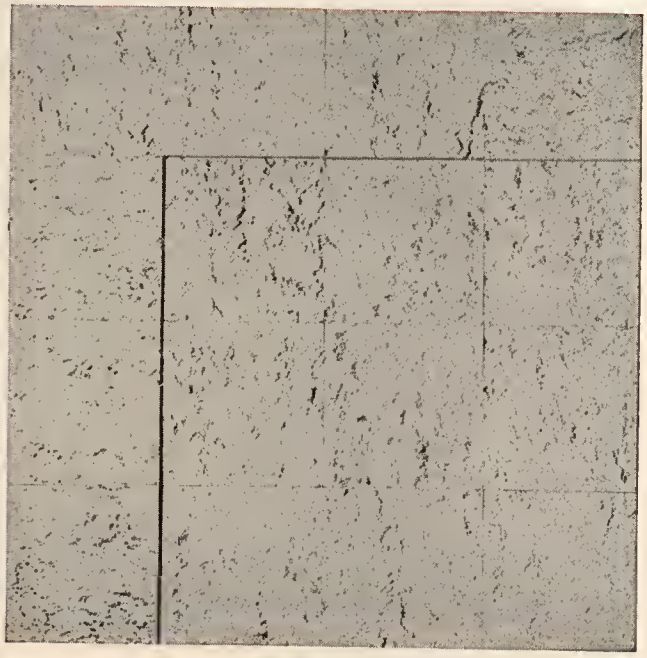
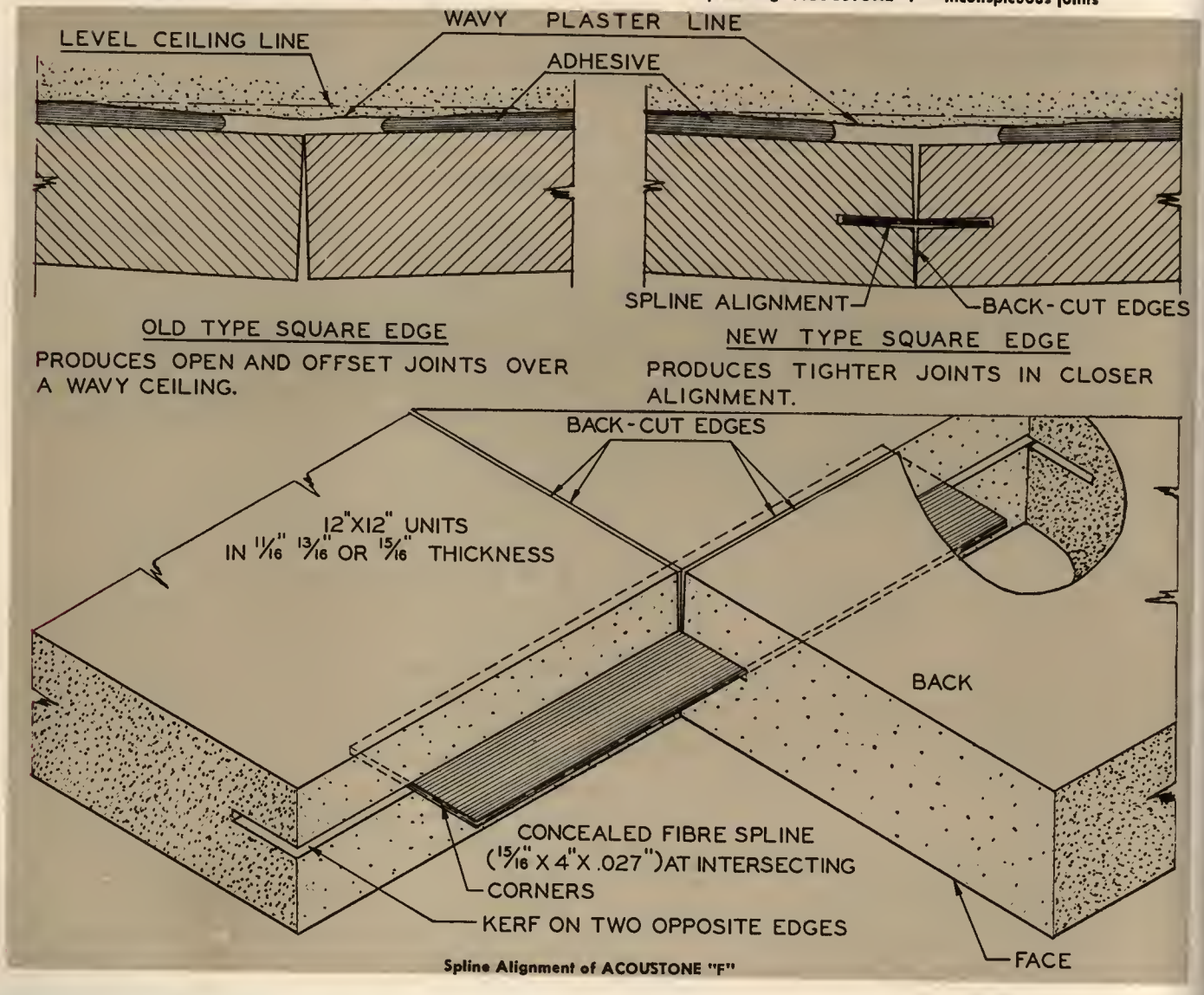
ACOUSTONE "F"

Bevel ACOUSTONE "F"—Conventional joints



Square Edge ACOUSTONE "F"—inconspicuous joints



Spline Alignment of ACOUSTONE "F"

ACOUSTONE "F"

TECHNICAL DATA

SOUND ABSORPTION COEFFICIENTS

Acoustical Materials Association

Mounting	Thickness	Coefficients 128	256	512	1024	2048	4096	Noise Red. Coef.	Wt. (lbs.) per Sq. Ft.
1	11/16"	.08	.25	.76	.84	.78	.73	.65	1.35
1	13/16"	.12	.31	.85	.88	.75	.75	.70	1.53
2	13/16"	.23	.50	.72	.77	.74	.69	.70	1.54
7	13/16"	.38	.64	.62	.68	.76	.75	.70	1.54

Tile tested were painted with a full finish coat of paint.

Bureau of Standards (LC-714 Jan. 1943)
Federal Specifications are Based on Bureau of Standards Tests

Mounting	Thickness	Coefficients 128	256	512	1024	2048	4096	Noise Red. Coef.	Wt. (lbs.) per Sq. Ft.	(SS-A-118a) Feb. 12, 1948 512 Cycles	N. R.	Type
1	11/16"	.07	.22	.75	.92	.82	.81	.70	1.13	104	5	III
1	13/16"	.14	.31	.86	.87	.78	.77	.70	1.33	102	5	III
8	13/16"	.34	75	.71	.72	.79	.77	.75	1.31	105	4	III

Tile tested were painted with a full finish coat of paint.

Mounting No. 1—Cemented to plasterboard—considered equivalent to cementing to plaster or concrete ceilings.
Mounting No. 2—Nailed to 1" x 2" wood strips 12" O. C.
Mountings Nos. 7 and 8—attached to metal supports on metal Suspension system.

Light Reflection:

ACOUSTONE "F"	White	(1) 80%
ACOUSTONE "F"	Ivory	(1) 72%
MOTIF'D ACOUSTONE	White	78%

(1) Tests by Official A.M.A. Laboratory.

Heat Conductivity—k = .35

Fire Resistance—Incombustible.
Authority: Bureau of Standards (LC-715, January, 1943).

DESIGN DATA

THICKNESS	SIZES	EDGE	INSTALLATION, KERFING, BACK-CUT, AND CENTERSCORING
11/16"	6"x 6" 6"x12" 12"x12" 12"x24"	Bevel or Square	Installation: *Adhesive only recommended.* Square edge units in 6" x 12", 12" x 12", and 12" x 24" kerfed (for .027" thick, 15/16" wide by 4" long splines) and back-cut. No kerfing or back-cut on 6" x 6" size or on bevelled units. No kerfing for mechanical erection. No centerscoring.
13/16"	6"x 6" 6"x12" 12"x12" 12"x24"	Bevel or Square	Installation: *Adhesive, Mechanical Erection or nailed direct to wood strips.* 1. *Adhesive Application:* Square edge units in 6" x 12", 12" x 12" and 12" x 24" kerfed (for .027" thick, 15/16" wide by 4" long splines) and back-cut. No kerfing or back-cut on 6"x6" size or on bevelled units. No centerscoring. 2. *Nailing to Wood Strips* (no adhesive used)—Only bevelled units (12" x 12" and 12" x 24"). Centerscoring available on 12" x 24" when specified. Units kerfed for .027" thick, 15/16" wide by 4" long splines.
7/8"	12"x24"	Bevel	3. *Mechanical Erection:* "*Clip-Spline Method*"—Only bevelled units (12" x 24"). Centerscoring available on 12" x 24" when specified. Units kerfed and rabbeted.

NOTE: All units that are to be applied with adhesives can be furnished upon request with bevels on one or more edges, the remaining edges left square. This allows creation of special patterns and border effects.

ACOUSTONE "F"

INSTALLATION METHODS

ACOUSTONE "F" mineral acoustical tile is installed by *approved USG acoustical contractors* by one of three methods:

I. Application with adhesive. (With or without nailing).

II. Nailing directly to wood strips through concealed fiber splines. (No adhesive).

III. Mechanical methods.

Each of these methods has individual advantages which fit it for specific types of construction.

I. ADHESIVE APPLICATION (All thicknesses)

Application with adhesive is the most widely used method and is recommended where a suitable base exists.

Adhesive

See Architectural Specifications page 7 for description and amount of adhesive recommended.

Size of Units

Should not exceed 12″ x 12″ for ceilings or 12″ x 24″ for walls.

BASES FOR ADHESIVE APPLICATION OF ACOUSTONE

1. New Plaster. A full thickness of rodded brown coat gypsum plaster in a clean, dry, level state provides an excellent base.

2. New Lime Putty Finish. Since the presence of free lime in a new finish may cause saponification of oils and resins in the adhesive, a combination of adhesive and nailing is recommended.

3. Old Lime Putty Finish. An old lime putty finish (in place over one year) offers a good base if the finish is well bonded to the base coat of plaster. Loose areas should be scaled off and patched with RED TOP* Patching Plaster.

4. Painted Plaster. A good quality of oil paint well bonded to the plaster and in place not less than 6 months will generally give excellent results. Oil in paints will oxidize sufficiently in 6 months so that it will not be objectionably softened by the naphtha thinner in adhesives. Units can also be successfully cemented directly to resin emulsion, casein or calcimine painted surfaces if they are well bonded to the base. Calcimine over a good varnish size or paint will generally give good results.

CAUTION: Calcimine over hard oil (sometimes called gloss oil) size is an unsatisfactory base. In this case a combination of nailing and adhesives must be used. The acoustical contractor will know by job testing when to augment the adhesive with nailing.

5. Undecorated Concrete. The concrete slab should be dry, clean and free of any sharp vertical offsets of more than ⅛″ (caused by forms out of level). Where concrete slabs have localized areas containing a surface film of loose cement dust, a proper size (spray or brush application) should be applied before application of acoustical units.

Acoustical units should not be applied with adhesive directly to non-insulated concrete roof slabs during extremely hot weather (over 105° F.) since the adhesive will be subjected to objectionable softening during the first 3 to 5 weeks. After this time the adhesive will withstand this high temperature. In questionable cases, consideration should be given to other methods of application.

6. Painted Concrete. Nailing of units is not possible when they are cemented directly to a concrete surface. The success of the job is therefore dependent on the quality of the paint and its bond to the slab. Unless this can be predetermined, other methods of application should be considered. (See No. 4 above).

7. USG Gypsum Board Nailed to Wood Strips. ACOUSTONE "F" can be successfully cemented to SHEETROCK* wallboard or plain ROCKLATH* plaster base (not perforated) or USG sheathing. Where gypsum boards are nailed directly to wood, SHEETROCK wallboard or USG sheathing furnishes a better base than ROCKLATH for application of acoustical units with adhesive. No sizing of the SHEETROCK, sheathing or ROCKLATH is required if adhesives conforming to architectural specifications, page 7, are used. The joints and openings in the SHEETROCK, sheathing or ROCKLATH should be sealed with the adhesive used to erect the tile (applies only where gypsum boards are nailed to wood). ROCKLATH without a scratch and brown coat of gypsum plaster should not be used where exposed to excessive moisture or humidity. Gypsum boards less than ⅜″ thick should not be used. Standard sizes of SHEETROCK, sheathing and ROCKLATH are shown in the table below.

8. Metal Suspension of Gypsum Board. Where combustible wood furring is not permitted, metal clips are available for attaching ROCKLATH plaster base to ¾″ suspended channels 16″ on center. ACOUSTONE may be applied to the ROCKLATH with adhesive as shown on page 9 but a preferred, alternate construction, giving additional rigidity, strength and fire protection is obtained by applying full base coats of gypsum plaster to the ROCKLATH before applying the ACOUSTONE. When base coat plaster is omitted the joints and openings in the ROCKLATH should be sealed with *unsanded wood fibre gypsum plaster* to obtain greater rigidity and seal against air travel. It should be applied approximately 1/16″ thick and 2″ wide in a continuous ribbon over all joints and at wall angles.

CAUTION: *The use of ROCKLATH without plaster is not recommended where job conditions, particularly moisture conditions, are unsuitable. Accordingly, ACOUSTONE shall be applied to such suspension* only *when the installation of the base is made under the supervision of and to the satisfaction of the USG acoustical contractor.*

TRADEMARK	STANDARD SIZES			Approx. Wt. Per Sq. Ft.	Spacing of 1″ x 3″ Wood Strips	Approx. Spacing of Nails
	Thickness	Width	Lengths			
SHEETROCK (Plain)	½″	48″	7′, 8′, 10′, 12;	2.1 lb.	16″ to 24″	7″
SHEETROCK (Plain)	⅜″	48″	7′, 8′, 10′, 12;	1.6 lb.	16″	7″
USG SHEATHING	½″	24″	8′ 0″	2.1 lb.	16″ to 24″	8″
ROCKLATH (Plain not Perf.)	⅜″	16″	48″	1.6 lb.	16″	4″

Nails: Use 1⅛″ blued plaster lath nails for either thickness board.
Do not exceed spacings of supports shown in the table and do not use gypsum board less than ⅜″ thick.

*Trademarks Reg. U. S. Pat. Off.

ACOUSTONE "F"

9. Wood. Adhesive application of ACOUSTONE "F" directly to wood strips or plywood without nailing has not proven very successful because of green wood and the tendency of wood to warp. Tile should be securely nailed with finish nails after application with adhesives.

10. Miscellaneous Surfaces. Follow the recommendations of approved acoustical contractors for surfaces not listed.

II. NAILING DIRECTLY TO WOOD STRIPS THROUGH CONCEALED FIBER SPLINES (No Adhesives Used).

Use only 13/16" *beveled* ACOUSTONE "F." See drawing on page 10 which is self-explanatory.

III. MECHANICAL SUSPENSION METHOD.

The "Clip-Spline" Method of mechanical erection was specially designed for ACOUSTONE "F" mineral acoustical tile. See drawings on pages 11 and 12. Use ACOUSTONE not less than 7/8" thick in 12" x 24" size with beveled edges and centerscored to simulate 12" x 12" units.

Continuous metal splines in kerfs along the four edges of each unit engage the metal clips and support the tile. They also act as a continuous seal to prevent air travel through the joints. Improved self-leveling of tile joints is assured since intersecting corners of four adjacent units are supported on the same member. The 48" metal tee splines having staggered ends in adjacent rows facilitates true alignment of joints and give a high degree of lateral rigidity to resist shifting and opening of joints.

Spring steel spacers are inserted in the finish channel at walls to prevent shifting of cut border units. ACOUSTONE "F", tee splines and clips are rigidly bound together to form a free floating construction suspended on 3/4" channels. The clip allows the 3/4" channels to move in any direction without transferring sufficient stress on the acoustical units to open joints.

The heavy pigmented finish paint on ACOUSTONE "F" creates high resistance to objectionable air travel through the tile.

ARCHITECTURAL SPECIFICATIONS FOR ACOUSTONE "F"
(CEMENTED OR NAILED INSTALLATIONS)

(*Phrases in parentheses are explanatory*)

1. Scope. (*List and locate all areas to receive acoustical treatment.*)

2. Materials. Acoustical material shall be ACOUSTONE "F" manufactured by the United States Gypsum Company having a (Noise Reduction Coefficient of 65 or 70) (sound absorption coefficient of . . . at 512 cycles per second) as tested by A. M. A. Laboratories; shall be composed of mineral fibers manufactured into tile units with a fissured surface; shall be capable of being brush painted repeatedly with oil paints without loss of sound absorption at 512 frequency or noise reduction coefficient; shall be rated "incombustible" by National Bureau of Standards; shall be finish painted on the exposed surface and bevels (*state color*) with washable paint and have a light reflection coefficient not less than 80% for white (or 70% for ivory), as tested by A.M.A. Laboratories.

(*a*) (*Use when units are applied with adhesive*). (*Choose 1 or 2 following.*)

(1) Units shall be 12" x 12" with square edges and shall have edges kerfed to permit leveling with concealed splines. Units shall weigh no more than 1¾ lbs. per square foot.

(2) Units shall be 12" x 12" with 1/8" beveled edges. Units shall weigh no more than 1¾ lbs. per square foot.

The adhesive shall be of a type manufactured expressly for the purpose; shall not be water soluble, shall not contain ingredients that react chemically with paint, or a solvent that has a stronger solvent action on an oil paint than naphtha; it shall contain no alcohol.

(*b*) (*Use when units are nailed directly to wood furring strips without cement. 13/16" beveled units are recommended for nailing.*) Units shall be 12" x 24", with beveled edges, and centerscored to simulate 12" x 12" units, and kerfed to receive fiber splines.

3. Installation. The installation shall be made by an applicator approved by the acoustical material manufacturer.

(a) (*Use when units are applied with adhesive*). Acoustical units shall be securely cemented in place to a (*state base as recommended on page 6*). Not less than 4 spots of adhesive averaging not less than 2½" diameter in direct contact with the tile and the surface to which it is applied shall be used per square foot of tile. Spots shall have a minimum diameter of 2". Tile shall be laid in a (*state pattern as square or diagonal or detail design*), with edges in alignment. (*Use following when square edge units are specified.*) Concealed splines shall be accurately fitted into the kerfs in the edges of the units so that there will be a spline at the junction of 4 abutting units and engaging the corners of all 4 units. Border units shall be scribed to neatly fit abutting surfaces.

(b) (*Use when units are nailed directly to wood furring strips. Only 13/16" beveled units are recommended.*) Units shall be securely attached to 1" x 3" wood furring strips spaced 12" on center, by face-nailing through the tile and concealed fiber splines placed into kerfs at edges of units with 3d or 4d finish nails countersunk slightly below the face of the tile. Necessary framing and anchorage for support of furring strips (shall, shall not) be a part of this work. Border units shall be neatly scribed to abutting surfaces.

MECHANICAL SUSPENSION "CLIP-SPLINE METHOD."

Note: Use Paragraphs 1, and 2, from above specification except material shall be only 7/8" beveled units 12" x 24" centerscored to simulate 12" x 12" units, kerfed and rabbeted to receive suspension members.

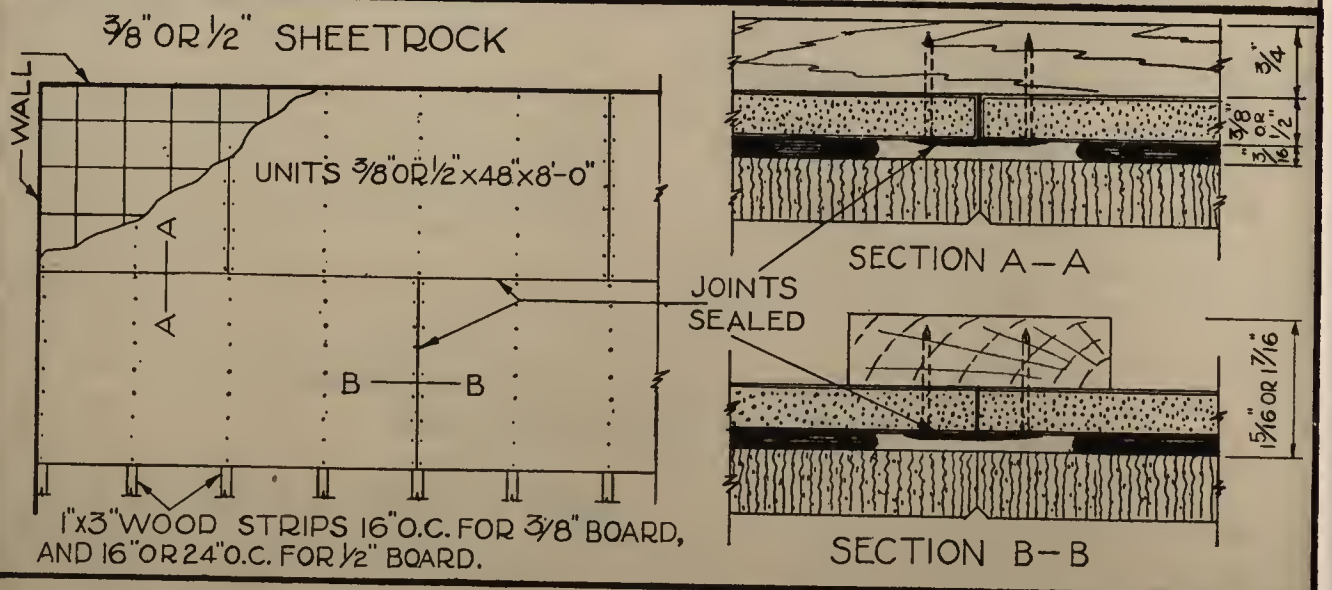
Delete paragraphs (a) and (b) under paragraph 2, Materials.

1. Installation. The installation shall be made by an applicator approved by the acoustical material manufacturer. The acoustical tile shall be installed by the *USG Clip-Spline Method* of mechanical erection. The acoustical contractor shall furnish and install necessary metal grillage and the metal finish channels (or wood mouldings) at wall intersections according to manufacturer's instructions. 1½" channels 4 feet on centers and supporting hangers 4 feet on centers (shall) (shall not) be installed by the acoustical applicator.

ACOUSTONE "F"

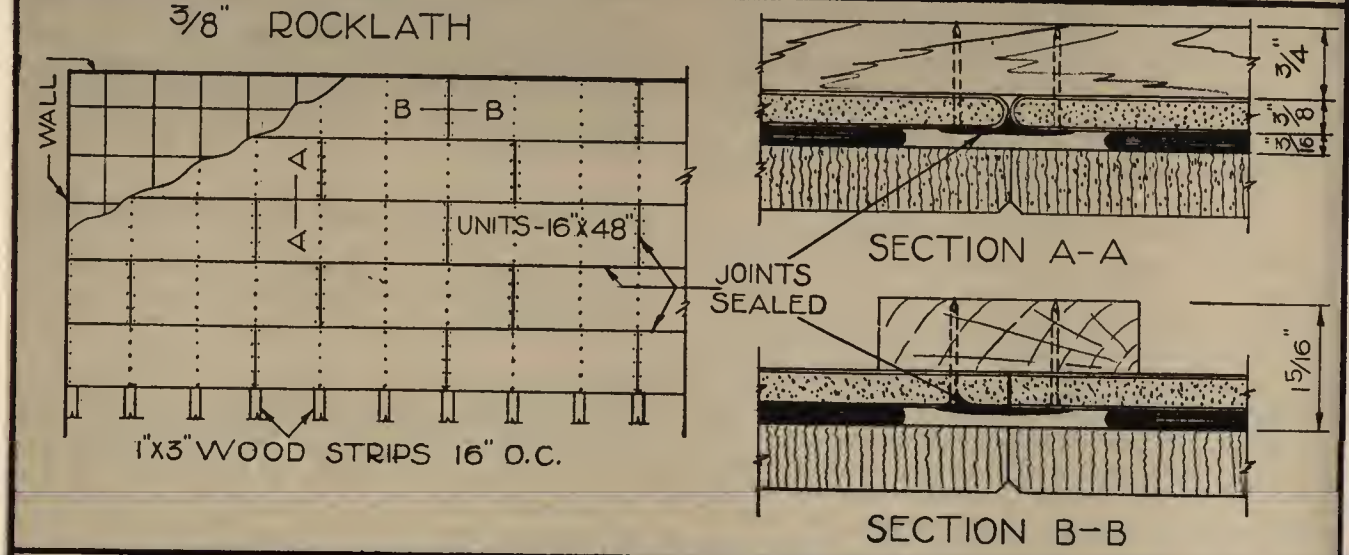
ACOUSTONE CEMENTED TO GYPSUM BOARDS ON WOOD STRIPS

SHEETROCK* WALLBOARD



NAILS - 1 1/8" 13 GAUGE BLUED 3/8" FLAT HEAD SMOOTH DIAMOND POINT
NAIL SPACING - CEILINGS 7" WALLS - 8"

ROCKLATH* PLASTER BASE

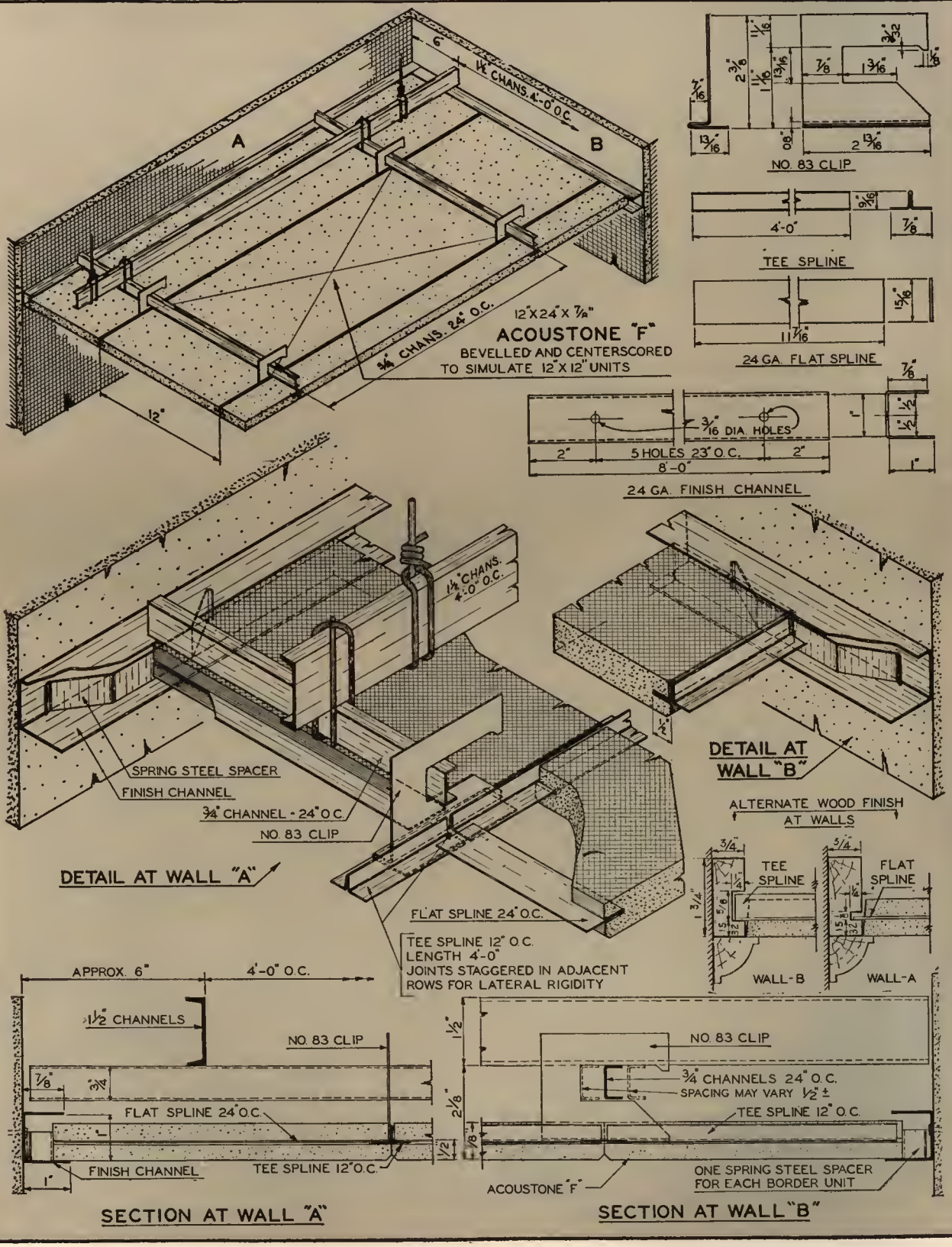


NAILS - 1 1/8" 13 GAUGE BLUED 3/8" FLAT HEAD SMOOTH DIAMOND POINT.
NAIL SPACING - APROX. 4" APART.

*Trademarks Reg. U. S. Pat. Off.

ACOUSTONE "F"

MECHANICALLY SUSPENDED ACOUSTONE "CLIP-SPLINE METHOD"



MOTIF'D* ACOUSTONE*

DESCRIPTION

MOTIF'D ACOUSTONE mineral acoustical tile is standard ACOUSTONE "F" mineral acoustical tile with a permanent integral decoration "etched" into its surface by an exclusive USG process. After the "etching" is completed, the tile is mill painted. The pattern is produced by the heavier shadow caused by the "etched" portion of the tile rather than by differences in applied color. Soft, low contrast can be maintained or the pattern can be accentuated by properly positioning the lighting source to increase the shadow effect.

SIZE

MOTIF'D ACOUSTONE is available in 12″ x 12″ units; 11/16″ or 13/16″ thick; with square edges only, kerfed for splines.

FUNCTION AND UTILITY

MOTIF'D ACOUSTONE embodies all the function and utility of ACOUSTONE "F" except for the following:

Light Reflection—The light reflection of white MOTIF'D ACOUSTONE is 78%.

Designs—Many standard tile patterns are available; or we will execute exclusive patterns of any design limited to "etching" single tile in not more than 2 directions and with a resulting pattern which can be produced within the area of four 12″ x 12″ units.

Cost—Costs slightly more than ACOUSTONE "F."

Installation—Application with adhesive and splines is the only method recommended using the same methods as for adhesive application of ACOUSTONE "F."

ARCHITECTURAL SPECIFICATIONS FOR MOTIF'D ACOUSTONE

(Phrases in parentheses are explanatory)

1. SCOPE. (*List and locate all areas to receive acoustical material*).

2. MATERIALS. Acoustical material shall be MOTIF'D ACOUSTONE manufactured by the United States Gypsum Company in (*state color*). Units shall be (*state thickness*) and have a (Noise Reduction Coefficient of . . .) or (512 frequency coefficient of . . .) (select from page 5).

Adhesive shall be (*refer to specification under ACOUSTONE "F"*).

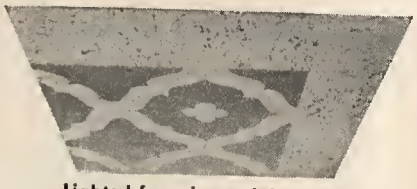
3. INSTALLATION. The installation shall be made by an applicator approved by the acoustical material manufacturer. The design shall be (*state standard pattern number or detail design*). The units shall be securely cemented in place. (*Continue according to adhesive application methods for ACOUSTONE "F"*.)

HOW IT WORKS

The unretouched photographs below were made from the same point of the same section of an installation of MOTIF'D ACOUSTONE under three different lighting conditions. (1) The left-hand picture shows about maximum contrast or color difference obtained under normal lighting: (2) The central illustration, the minimum contrast: (3) the reversal of pattern in the right-hand picture, when light was shifted 180° from that used in the left-hand view. Such changes in degrees of contrast are usually apparent in every MOTIF'D ACOUSTONE installation. This "mobile" effect shifts, not only with light changes, but with changes in position of the observer. The pattern never becomes monotonous. The barely measurable reduction in light reflective ability does not cause any significant changes in lighting costs.

Lighted from upper right corner

Lighted with single lights on either side of camera position



Lighted from lower left corner

DESIGNS

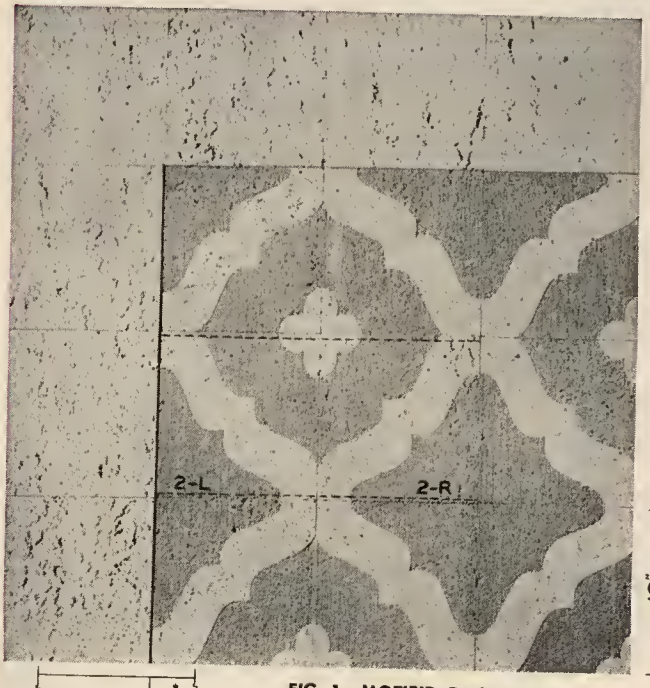


FIG. 1—MOTIF'D Design 2 R-L

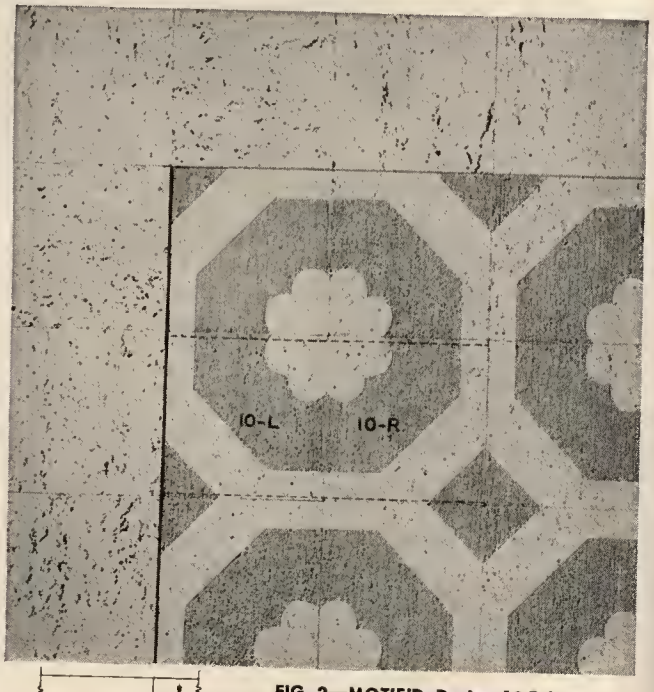


FIG. 2—MOTIF'D Design 10 R-L

*Trademarks Reg. U. S. Pat. Off.

AUDITONE* ACOUSTICAL TILE

DESCRIPTION

AUDITONE wood fiber acoustical tile is a slotted wood fiber tile designed to give maximum acoustical efficiency and strength and an unobtrusive, efficient, functional appearance. Each unit is finish-painted at the factory and is available accurately formed, with beveled or tongue and groove edges.

SIZES — ¾" or 1" by 12" x 12" or 12" x 24". (See Technical Data Below.) The 12" x 24" tongue and groove units are scored and slotted to represent two 12" x 12" units with the slots parallel to the long edges.

FUNCTION AND UTILITY

Sound Absorption—AUDITONE is made in two thicknesses with a Noise Reduction Coefficient of .65 and .70 and absorptions at 512 cycles per second of .68 and .79 respectively. (See Technical Data Below.)

Edge Treatment—AUDITONE is made with butt bevel edges for cementing to proper bases without supplementary nailing; supplied with tongue and groove edges for blind nailing directly to joists, studs or nailing strips. The tongue and groove maintains level joints and a smooth appearance. Tongue and groove AUDITONE is not recommended for application with adhesive. (See Technical Data Below.)

Paint and Color—Finish-painted at the factory on face and bevels in high light reflecting white.

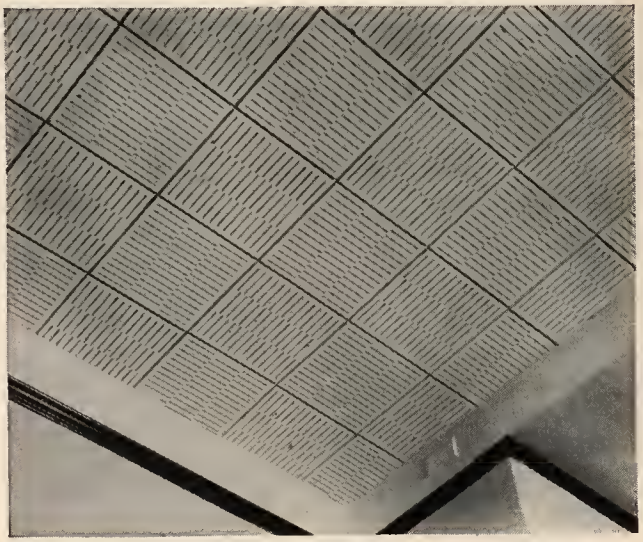
Weight—AUDITONE weighs approximately .91 lb. per square foot in the ¾" thickness and approximately 1.23 lbs. per square foot for the 1" thickness. (See Technical Data Below.)

Paintability and Maintenance

AUDITONE can be repeatedly brush or spray painted following normal paint procedures with oil, resin emulsion, casein, calcimine or any of the commercial types of paint without loss of sound absorption at 512 cycles per second or in the Noise Reduction Coefficient. AUDITONE can be cleaned with putty or paste type wallpaper cleaner.

Light Reflection

See Technical Data below.



Fire Resistance

Combustible.

Heat Conductivity

AUDITONE has a low thermal conductivity ("k" factor = .38).

Resistance to Soiling and Breathing

The smooth, painted finish of AUDITONE wood fiber acoustical tile resists soiling; and the tongue and groove edge type prevents objectionable air travel through the joints when used on suspended nailing strips.

Cost

Lower in cost than ACOUSTONE.

Limitations of Use

AUDITONE should not be used below wainscot height or where it will be subjected to severe impact or abrasion.

It is not recommended in dish-washing rooms, or where it will be exposed to steam or constant high humidity.

TECHNICAL DATA

SOUND ABSORPTION COEFFICIENTS

Acoustical Materials Association

Type	Thickness	Mounting	Coefficients 128	256	512	1024	2048	4096	Noise Red. Coef.	Wt. (lbs.) per Sq.Ft.
B	1"	1	.13	.33	.79	.85	.85	.72	.70	1.15
8	1"	2	.28	.48	.64	.86	.77	.75	.70	1.23
C	¾"	1	.09	.28	.68	.80	.79	.81	.65	0.91
C	¾"	2	.13	.49	.60	.72	.80	.81	.65	0.91

Bureau of Standards
Federal Specifications are Based on Bureau of Standards Tests

Type	Thickness	Mounting	Coefficients 128	256	512	1024	2048	4096	Noise Red. Coef.	Wt. (lbs.) per Sq. Ft.	SS-A-118a Feb. 12, 1948 512 Cycles	N. R.	Type	Class
8	1"	1	.24	.50	73	.82	.75	.64	.70	1.14	105	5	II	C
8	1"	2	.19	.64	.63	.72	.78	.70	.70	1.18	107	5	II	C
C	¾"	1	.08	.30	.66	.80	.86	.75	.65	.79	106	6	II	C
C	¾"	2	.16	.64	.52	.60	.72	.77	.60	.97	109	7	II	C

Tile tested were pointed with a full finish coat of point. Mounting No. 1—Cemented to plasterboard—considered equivalent to cementing to plaster or concrete ceilings. Mounting No. 2—Nailed to wood strips.

LIGHT REFLECTION:
AUDITONE B, White 74%
AUDITONE C, White 72%
Tests by Official A.M.A. Laboratory.

HEAT CONDUCTIVITY:
k = .38

FIRE RATING
Combustible

DESIGN DATA

UNITS		SLOTTED	SIZE	CENTER CROSS-SCORED
T&G Edge	Field	Yes	(¾" or 1") x 12" x 24"	Yes
	Field Fillers	Yes	(¾" or 1") x 12" x 12"	No
	Borders	No	(¾" or 1") x 12" x 24"	Yes
Butt-Bevel	Field	Yes	(¾" or 1") x 12" x 12"	No
	Borders	No	(¾" or 1") x 12" x 12"	No

*Trademark Reg. U. S. Pat. Off.

AUDITONE

INSTALLATION METHODS

AUDITONE is installed by approved U·S·G acoustical contractors by one of two methods:

1. Application with adhesive (Butt Bevel Type only with or without nailing).

2. Blind nailing directly to wood strips, studs, joists, or other wood supports.

ADHESIVE APPLICATION (All thicknesses)

See architectural specifications below for amount and type of adhesive recommended.

Size and Type of Units

Should not exceed 12″ x 12″; use butt bevel type only.

Bases for Adhesive Application of AUDITONE

Refer to "Bases for Adhesive Application of ACOUSTONE" page 6.

Patterns

A variety of ceiling and wall patterns may be obtained by turning the tile to change the direction of slots on adjacent units or groups of units. Diagonal or square patterns with or without plain borders may be used.

APPLICATION BY BLIND NAILING (All thicknesses)

Size and Type of Units

12″ x 24″ Tongue and Groove units only are used except for 12″ x 12″ field filler units adjacent to border.

Bases for Nailing

Tongue and Groove AUDITONE 12″ x 24″ may be nailed to supports spaced not to exceed 16″ on center for square pattern and 12″ on center for diagonal pattern. Nailing strips need not coincide with joints in acoustical units because of the tongue and groove feature in AUDITONE. Where nailing strips are used the following table gives size and span.

Size of nailing strips	Maximum space between supports
1″ x 2″	24″
1″ x 3″	36″
2″ x 2″	42″

Where a suspended ceiling is required, a double grillage is recommended using as main members (2″ x 2″) (2″ x 3″) or (2″ x 4″) which should be cross-furred with wood nailing strips spaced as shown in the above table. Steel channels (1½″ or 2″) may be used in lieu of the main wood members to which wood nailing strips may be wired. Nailing strips (2″ x 2″) or (2″ x 3″) will successfully span 48″ if a 1″ x 2″ stiffener strip is nailed to them midway between and parallel to the 48″ supports.

Patterns

Patterns are limited by the requirement that all slots must be parallel, the short joints between units offset. Tile may be laid diagonally or perpendicular with supports.

ARCHITECTURAL SPECIFICATIONS FOR AUDITONE

CEMENTED INSTALLATIONS

(*Phrases in parentheses are explanatory.*)

1. Scope. (*List and locate all areas to receive acoustical treatment.*)

2. Materials. Acoustical material shall be AUDITONE (¾″ "C" or 1″ "B") manufactured by the United States Gypsum Company; and shall be finish-painted on the exposed surface and bevels; with a light reflection coefficient not less than 70% as tested by A.M.A. Laboratories; capable of being brush-painted repeatedly with oil paints without loss of sound absorption at 512 frequency or Noise Reduction Coefficient. The (Noise Reduction Coefficient) (sound absorption coefficient at 512 cps) as tested by A.M.A. shall be not less than (*choose value from sound absorption table on page 21*).

Units shall be 12″ x 12″ butt bevelled.

The adhesive shall be (Refer to ACOUSTONE Specification Page 7).

3. Installation. (Refer to page 7 except eliminate any reference to splines and spline alignment.)

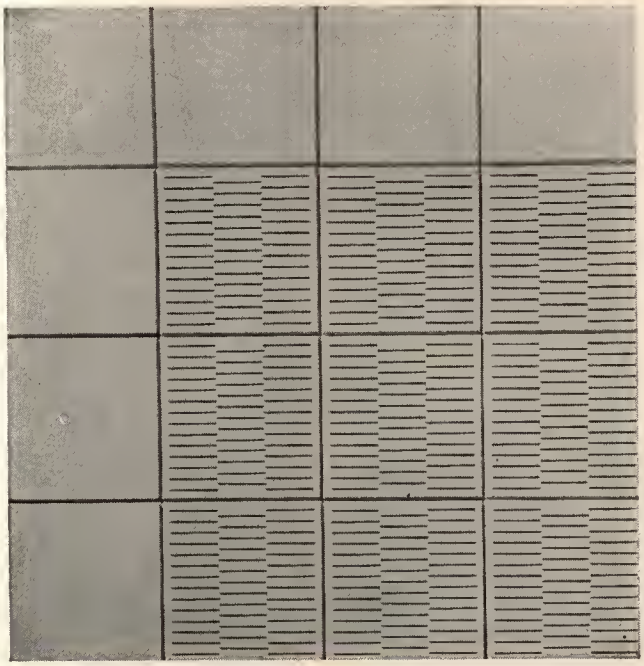
NAILED INSTALLATIONS

Note: Use paragraphs 1, and 2, from above specifications except materials shall be T&G AUDITONE 12″ x 24″.

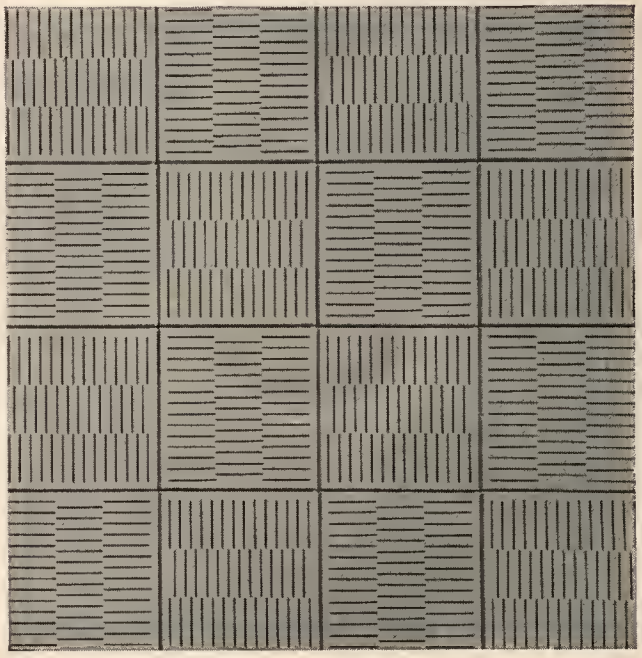
1. Installation. The installation shall be made by an applicator approved by the acoustical material manufacturer. The units shall be installed by blind nailing through the tongue to (wood joists, studs, furring strips, or suitable nailing surface), spaced not to exceed 16″ on centers as specified and furnished in place under section "Carpentry." (Wood grounds shall be installed where necessary to furnish a satisfactory nailing base for border acoustical units at their intersection with walls or other abutting surfaces.)

(Reference should be made under "Carpentry" as follows: "Joists or studs or furring strips shall present a suitable level surface to receive acoustical treatment without shimming or additional furring by the acoustical contractor".) Necessary framing and anchorage for support of furring strips (shall, shall not) be a part of this work.

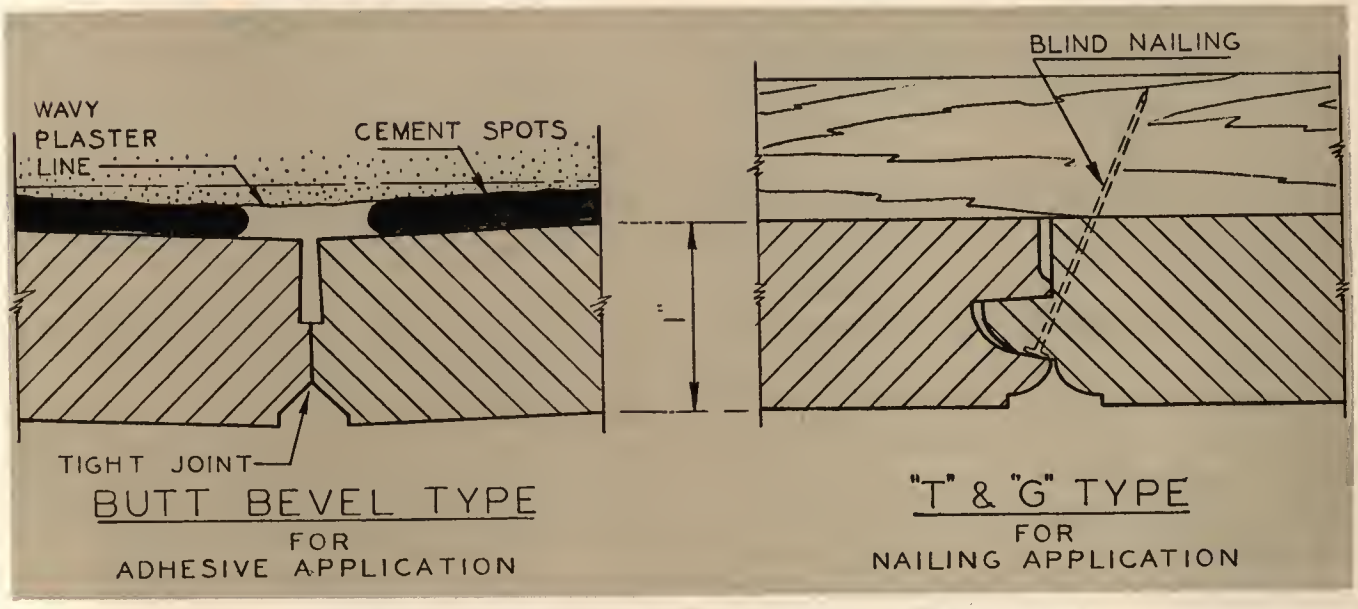
AUDITONE



AUDITONE "B"
Field 12″ x 12″ Laid Parallel—Border 12″ x 12″ Plain Tile



AUDITONE "C"
Field 12″ x 12″ Checkerboard Pattern—No Border



OTHER U·S·G SOUND CONTROL MATERIALS

PERFATONE*—An incombustible acoustical tile of perforated metal enclosing a rock wool absorbent pad. The units, 12″ x 24″, are centerscored to simulate 12″ x 12″ units. They are held in place by special Tee runners attached to metal furring or other supports. PERFATONE is in a higher price range than ACOUSTONE "F" or AUDITONE.

PERFORATED ASBESTOS BOARD—An incombustible acoustical construction consisting of perforated 3/16″ asbestos board covering rock wool pads or blankets. The perforated facing is attached with wood screws or by other means to furring strips. This construction is commonly used in spaces subject to high humidity, impact or abrasion, and in radio studios. It is in a higher price range than ACOUSTONE "F" or AUDITONE.

U·S·G SOUND INSULATION—For insulating rooms against extraneous noises. This special U·S·G construction employs patented resilient floor chairs, and wall and ceiling resilient clips to support room surfaces and furnish an effective barrier against sound travel.

*Trademark Reg. U. S. Pat. Off.

SABINITE* ACOUSTICAL PLASTER

SABINITE TROWEL FINISH "M"

DESCRIPTION

SABINITE Trowel Finish is a highly efficient acoustical plaster, scientifically prepared to produce a continuous trowel finish of exceptional sound absorbent qualities. It is manufactured in four standard colors and white and requires the addition of water only.

FUNCTION AND UTILITY

SABINITE Trowel Finish acoustical plaster is particularly effective for sound conditioning.

Sound Absorption—Noise reduction coefficient of .60. (See table below.)

Fire Resistance—Basically a mineral, it is incombustible.

Beauty—Its fine texture troweled surface provides unusual beauty, eliminating the mechanical effect generally associated with acoustical treatment.

Adaptability—Conforms to any architectural design. Generally applied over new plastered surfaces, but may also be applied over most existing surfaces through use of a special asphalt emulsion bonding coat according to manufacturer's directions.

High Light Reflection—Laboratory tests indicate light reflection of 64 per cent for SABINITE Trowel Finish Oyster White.

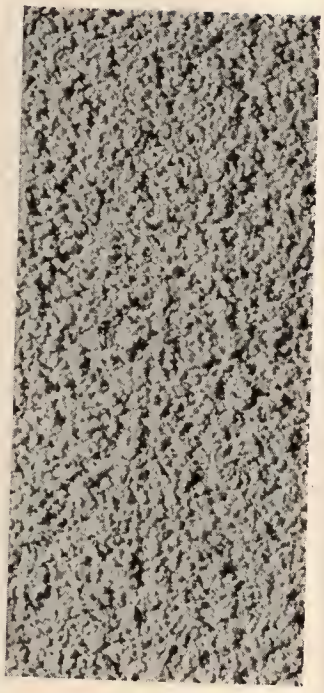
Heat Insulation—SABINITE Trowel Finish has a "k" value of 0.50.

Maintenance—SABINITE Trowel Finish may be cleaned using a putty-type wallpaper cleaner or with a vacuum cleaner using hose and brush attachment.

SABINITE Trowel Finish may be redecorated with TEXOLITE* paint (Standard or Imperial). Apply according to USG specification for painting SABINITE acoustical plaster. (Available on request.)

Tests by a nationally recognized laboratory showed

Sabinite Trowel Finish



Sabinite Float Finish and 38

(Actual size of texture)

SABINITE Trowel Finish had a noise reduction coefficient of .50 after 5 spray coats of Imperial TEXOLITE paint were applied.

Easily Applied—Any good plaster craftsman can apply SABINITE.

Economical—Gives more sound absorption per dollar invested than most other commonly used acoustical materials. Low in initial cost.

LIMITATIONS

1. Designed for use on ceilings and areas not exposed to rough usage.

2. Should not be used where exposed to excessive moisture, (See SABINITE 38—Next Page), and should not be used on the exterior where exposed to the elements.

3. To insure best results, SABINITE must be applied in strict accordance with manufacturer's directions.

SOUND ABSORPTION DATA

SABINITE Type	Thickness	128	256	512	1024	2048	4096	NRC	Authority
Trowel Finish	½ Inch	.16	.26	.48	.77	.83	.85	.60	B. of Stds.
Float Finish	½ Inch	.19	.22	.43	.80	.75	.75	.55	B. of Stds.
38	½ Inch	.25	.26	.32	.60	.76		.50	Riverbank Lab.

*Trademarks Reg. U.S. Pat. Off.

SABINITE ACOUSTICAL PLASTER

SABINITE FLOAT FINISH "F"

DESCRIPTION

SABINITE Float Finish is a highly efficient acoustical plaster used where a float finish is desired. It is manufactured in four standard colors and white and requires the addition of water only.

FUNCTION AND UTILITY

SABINITE Float Finish acoustical plaster is effective for sound conditioning and has a slightly harder surface than SABINITE Trowel Finish.

Sound Absorption—Noise Reduction Coefficient of .55. (See table on opposite page.)

Fire Resistance—Basically mineral, it is incombustible.

Appearance—Its continuous floated surface provides the appearance of a heavy sand float finish.

Adaptability—Conforms to most architectural designs.

High Light Reflection—Laboratory tests indicate light reflection of 54 per cent for SABINITE Float Finish Oyster White.

Heat Insulation—SABINITE Float Finish has a "k" value of 0.76.

Maintenance—SABINITE Float Finish may be cleaned with a vacuum cleaner using hose and brush attachments. SABINITE Float Finish may be redecorated with TEXOLITE paint (Standard or Imperial). Apply according to USG specification of painting SABINITE acoustical plaster. (Available on request.)

LIMITATIONS

1. Designed for use on ceilings and areas not exposed to rough usage.

2. Must be applied over new plastered surfaces.

3. Should not be used where exposed to excessive moisture (use SABINITE 38), and should not be used on the exterior where exposed to the elements.

4. To insure best results, SABINITE Float Finish must be applied in strict accordance with manufacturer's directions. (Available on request.)

SABINITE 38

DESCRIPTION

SABINITE 38 is an hydraulic acoustical plaster prepared for use in locations subjected to high moisture conditions. It is manufactured in white only and provides a float finish.

FUNCTION AND UTILITY

SABINITE 38 is effective for sound conditioning in shower rooms, for ceilings in swimming pools, etc.

Sound Absorption—Noise Reduction Coefficient of .50. (See table on opposite page.)

Fire Resistance—Basically a mineral, it is incombustible.

Appearance—Its continuous floated surface provides the appearance of a heavy sand float finish.

Adaptability—Conforms to most architectural designs.

Heat Insulation—SABINITE 38 has a "k" value of 0.80 (estimated).

Maintenance—SABINITE 38 may be cleaned with a vacuum cleaner using hose and brush attachments.

It may be painted with Imperial TEXOLITE paint applied according to USG directions which will vary with conditions encountered. These directions are available upon request.

LIMITATIONS

1. Designed for use on ceilings and areas not exposed to rough usage.

2. Must be applied only over a portland cement-lime basecoat.

3. To insure best results, SABINITE 38 must be applied in strict accordance with manufacturer's directions.

These directions are available on request, and are also given in SABINITE Acoustical plaster Technical Information Folder, ATA File Number 39-B.

PLASTERING SPECIFICATIONS

GENERAL PROVISIONS

In cold weather a minimum temperature of 40°F. shall be maintained in the building until the plaster is dry. After plaster has set, ventilation shall be provided to eliminate excessive moisture in the building. In hot, dry weather, all openings shall be closed with sash or cloth during the application of plaster. No plaster shall be allowed to dry before setting.

SCOPE

Unless otherwise shown on drawings, all walls and ceilings shall be finished as herein described.

MATERIALS

Finish Coat—Acoustical plaster shall be SABINITE Acoustical Plaster (Trowel Finish) (Float Finish) (Type 38) (Specify) manufactured by United States Gypsum Company. Color shall be as designated by the architect.

MIXING AND APPLICATION

Mixing and application of SABINITE Acoustical Plaster and the basecoat plaster shall be in strict accordance with the manufacturer's printed directions which are hereby made a part of this specification.

Note to Architect: For these printed directions refer to Technical Information Folder for SABINITE Acoustical Plaster AIA File Number 39-B.

ACOUSTICAL SERVICE

Installation of acoustical tile is by United States Gypsum Company approved District Contractors. Upon request, the United States Gypsum Company, or its authorized acoustical contractors, will make analyses and recommendations, without obligation, on sound control problems. A complete line of acoustical materials is available.

USG ACOUSTICAL CONTRACTORS

ARKANSAS	Fort Smith	Harry G. Barr Co.	424 Garrison Ave.
	Little Rock	Nevil C. Withrow Co.	Pyramid Bldg.
CALIFORNIA	Los Angeles	Acoustical Contractors, Inc.	1701 W. Slauson Ave.
	San Francisco	F. K. Pinney, Inc.	636 Clay St.
COLORADO	Denver	Construction Specialties Co.	2026 Arapahoe St.
CONNECTICUT	Hartford	W. T. Roberts Construction Co.	60 Putnam St.
DISTRICT OF COLUMBIA	Washington	Anning-Johnson Co., Inc.	1733 Wisconsin Ave., N. W.
FLORIDA	Miami	Ray-Hof Agencies	3004 N. W. North River Drive
GEORGIA	Atlanta	Lewis & Co.	33 Hunter St., S.W.
ILLINOIS	Chicago	Anning-Johnson Co., Inc.	1514 W. Van Buren St.
	Moline	Builders Sales & Service Co.	1516 Fourth Ave
	Peoria	Watson Engineering Co.	507 First National Bank Bldg.
	Rockford	Acoustical Engineering Co.	Shaw at Charles St.
INDIANA	Indianapolis	Brown-Anning-Johnson Co.	1800 Alvord St.
IOWA	Cedar Rapids	Midland Sales Co.	Security Bldg.
	Davenport (See Moline, Ill.)		
KENTUCKY	Louisville	Pochel-Chowning Co., Inc.	1404 W. Market St.
LOUISIANA	Baton Rouge	Pioneer Contract & Supply Co.	2510 Government St.
MASSACHUSETTS	Cambridge	W. T. Roberts Construction Co.	Third & Rogers Sts.
MICHIGAN	Detroit	The Nichols Co.	Michigan Bldg.
	Grand Rapids	Harold R. Sobie Co.	956 Cherry St.
MINNESOTA	Minneapolis	Hauenstein & Burmeister, Inc.	614 Third Ave. South
MISSISSIPPI	Greenwood	Stokes Interiors of the Delta, Inc.	200 Carrollton Ave.
	Jackson	Stokes Interiors, Inc.	126 S. Farish St.
MISSOURI	Kansas City	The Stokes Company	2035 Washington St.
	St. Louis	Hamilton Co.	4239 Lindell Blvd.
NEBRASKA	Omaha	Porter-Trustin Co.	910 S. Saddle Creek Road
NEW JERSEY	East Orange	Woolsulate Corporation	21 S. Sixteenth St.
NEW YORK	New York	Waldvogel Bros., Inc.	17 E. 42nd St.
	Rochester	S. A. Spencer	135 Spring St.
	Syracuse	A. P. Madden Co.	218 Harrison St
NORTH CAROLINA	Greensboro	Bonitz Insulation Co.	411 Prescott St.
OHIO	Cincinnati	R. E. Kramig & Co.	222 E. Fourteenth St.
	Cleveland	Anning-Johnson Co., Inc.	1836 Euclid Ave.
	Cleveland	H. A. Erf Acoustical Co.	3868 Carnegie Ave.
	Columbus	General Maintenance & Engineering Co.,	1231 McKinley Ave.
OKLAHOMA	Oklahoma City	Denman Floor Co.	910 N. Hudson St.
OREGON	Portland	Frank Stepanek & Co.	3446 N. E. Broadway
PENNSYLVANIA	Philadelphia	W. M. Moyer Co.	1616 Walnut St.
	Pittsburgh	Standard Floor Co.	141 Gulf Bldg.
TENNESSEE	Chattanooga	The Currin Co.	1208 Carter St.
	Memphis	R. Cluck Floor Co.	676 Jefferson Ave.
TEXAS	Dallas	Macatee, Inc.	4703 Bengal St.
	Fort Worth	Builders Material Co., Inc.	2307 Montgomery St.
	Houston	Miller Bros. Specialty Co.	5014 San Jacinto St.
	San Antonio	General Supply Co.	227 S. Salado St.
UTAH	Salt Lake City	Elias Morris & Sons Co.	250 East South Temple St.
VIRGINIA	Richmond	W. Morton Northen & Co., Inc.	2 North Sixth St.
WASHINGTON	Seattle	Pioneer Sand & Gravel Co.	901 Fairview Ave., North
WEST VIRGINIA	Huntington	Frank B. Groves	P. O. Box 1872
WISCONSIN	Milwaukee	Insulation Service Co.	2317 W. Lisbon Ave.

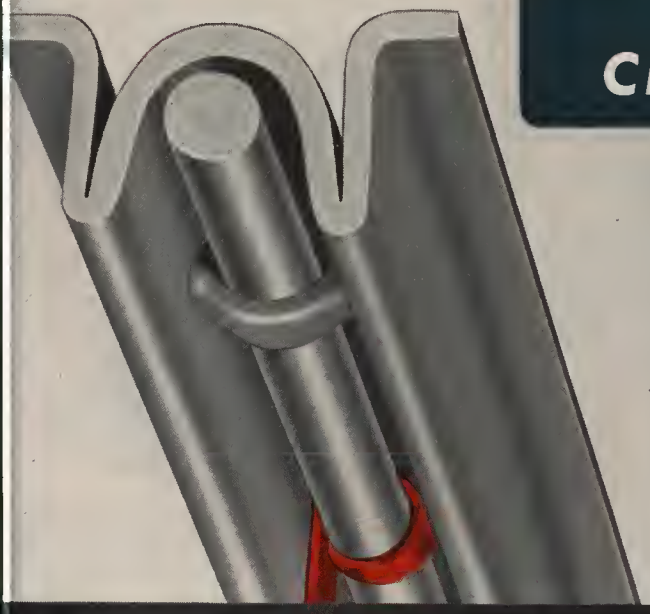
SERVICE—Installation of acoustical tile is by United States Gypsum Company approved District Contractors. Upon request, the United States Gypsum Company, or its authorized acoustical contractors, will make analyses and recommendations, without obligation, on sound control problems. A complete line of acoustical materials is available.

USG UNITED STATES GYPSUM COMPANY

MEMBER OF

Nailock® METHOD

OF SUSPENDED CEILING CONSTRUCTION



Provides a means of mechanical fastening for acoustical ceiling materials.

U.S. Pat. 2160794
U.S. Pat. 2419420

CATALOG N-1

AND FOR FASTENING ALL NAILABLE MATERIALS TO STEEL, CONCRETE AND MASONRY

NAILOCK STEEL DIVISION

THE SANYMETAL PRODUCTS CO., INC.

1701 URBANA RD. • CLEVELAND 12, OHIO

The NAILOCK METHOD OF SUSPENDED CEILING CONSTRUCTION

securely fastens every unit in place and assures a rigid, safe and permanent installation. Nailock Universal Nailing Channels provide a means for constructing a rigid, safe and permanent installation of a wide variety of ceiling materials to receive acoustical tiles without limitations as to size, type or manufacturer.

Basically, the Nailock Method employs only four devices: (1) Nailock Universal Nailing Channel, incorporating a means for automatically and securely locking nails driven into it, provides a continuous, rigid and lightweight furring member; (2) Nailock Nails which, when driven into the nailing channel, loop themselves automatically around the rod. This is the exclusive feature of Nailock Universal Nailing Channels; (3) Spring Lock Clips for attaching Nailock Universal Nailing Channel to supporting members; (4) Metal End Lock Strips which maintain perfect alignment in installing plaster boards and prevent "breathing" through joints. The term Nailock describes a strong, perfectly-formed, complete loop of the nail around the rod, affording a stronger, firmer and safer form of attachment against pull than ordinary nails driven into wood or other nailable materials. Nailock Nails are manufactured in different sizes and lengths to meet construction requirements.

Nailock Universal Nailing Channels, although used primarily for suspended ceiling construction, provide an ideal method of installing panels, slabs, sheets and other kinds of covering, flat or corrugated, in fact any nailable material, over steel or concrete. The method is as simple and safe as it is economical. Nailock Universal Nailing Channels permit the use of a wide variety of materials commonly used for suspended ceiling construction and are equally adaptable to remodeling as well as to new construction work. Applications may be as varied as the architect's ingenuity in utilizing Nailock Universal Nailing Channels. Several applications are illustrated as on pages 3, 4, 5 and 6. Nailock Universal Nailing Channels may be used as "metal furring" for installing:

- Fire-resisting backing to receive acoustical tiles
- Thermo and sound insulating materials
- Ceiling and wallboards of fiber, Gypsum, etc.
- Plain asbestos sheets
- Plaster bases of Gypsum
- Wood furring strips

There are four methods of installing Nailock Universal Nailing Channels. These methods of use are illustrated at the bottom of this and the opposite page. The Nailock Method is the simplest, fastest and safest means for installing suspended ceilings with or without acoustical materials. Engineering Laboratory Test Data presented on page 7 substantiates fully the claim of safety and permanency.

For further information consult a Nailock Nailing Channel Distributor (see page 8 for complete list), or write direct to Nailock Steel Division, The Sanymetal Products Co., Inc., 1701 Urbana Road, Cleveland 12, Ohio.

ADVANTAGES

The Nailock Method of suspended ceiling construction presents several exclusive advantages, the practicability of which have been revealed by the experience of contractors in making numerous installations. Advantages otherwise unobtainable are as follows:

All parts used by the Nailock Method are metal.

The wide nailing course of Nailock Universal Nailing Channels speeds work. The distance between the two edges of Nailock Universal Nailing Channel at the widest is nearly ¾", affording a nailing course so wide as to offer no difficulty in making the nail strike somewhere within its limits. Whenever the point of the nail strikes on either side of the channel, or on the rod in the center, it is automatically deflected into the proper course. This feature makes for the utmost speed in installation and uniformly good results from every nail locking or anchoring itself on the rod in the channel.

The Nailock Method is the simplest and safest method of installing a suspended ceiling construction with or without acoustical tiles, especially when the Nailock Spring Lock Clip is used for attaching Nailock Channel to the carrying member.

The Nailock Method is practical, structurally and economically, for constructing suspended ceilings where Asbestos Board, Gypsum Board or Structural Insulation Board are used as a finish. It is not necessary that an acoustical tile installation be used to justify the use of the Nailock Method.

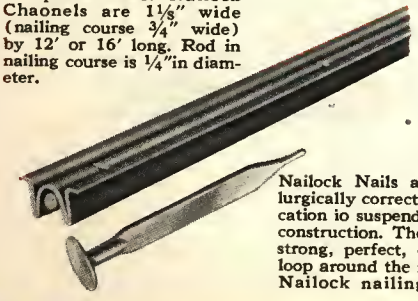
The Nailock Method of suspended ceiling construction doesn't in any way alter the usual methods of suspending a ceiling but permits the use of the widest variety of backing or backerboard materials, any type of acoustical materials attachable by mechanical means, or by cementing, and all of the usual methods and materials of finishing a ceiling, including plastering.

The Nailock Method provides a safeguard against vibration, sudden shock and damage to ceilings resulting from structural adjustments of the building, such as settling. The Nailock Method assures positive anchorage of backing or backerboard or finish ceiling materials.

The Nailock Method permits the use of larger crews in making installations in large areas due to the speed with which Nailock Universal Nailing Channels can be attached to carrying members through the use of Nailock Spring Lock Clips. Consequently, the muss commonly associated with ceiling construction work is evident for a shorter time. This makes Nailock especially preferable for remodeling. Because the Nailock Method is dry construction, it speeds completion of the job.

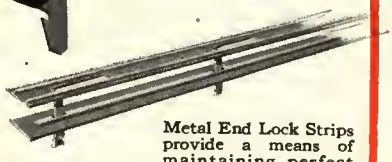
Metal End Lock Strips prevent passage of air between the edges of the backerboard and the consequent "breathing" that would occur through the joint.

Nailock Universal Nailing Channels are formed of 16 gauge strip steel by rolling in special dies. Nailock Chaonels are 1⅛" wide (nailing course ¾" wide) by 12' or 16' long. Rod in nailing course is ¼"in diameter.



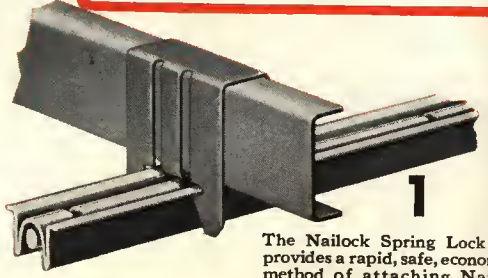
Nailock Nails are metallurgically correct for application io suspended ceiling construction. They form a strong, perfect, complete loop around the rod in the Nailock nailing course.

The Nailock Spring Lock Clip is easily snapped on to the carrying members and in turn speedily receives the Nailock Channel and securely holds it.



Metal End Lock Strips provide a means of maintaining perfect alignment in installing backerboard and prevents "breathing" through the joints.

FOUR BASIC METHODS OF USE

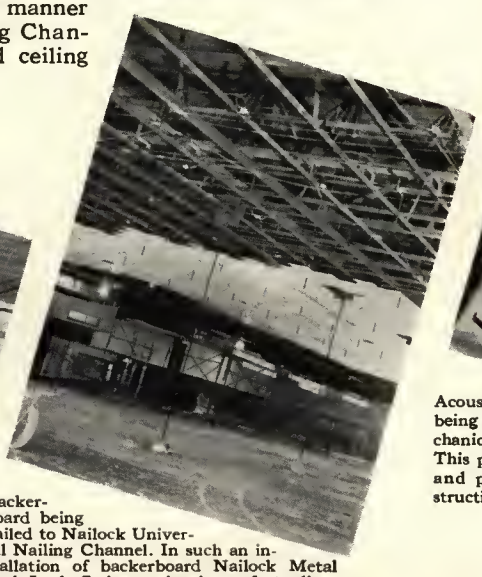


1

The Nailock Spring Lock Clip provides a rapid, safe, economical method of attaching Nailock Universal Nailing Channels to steel carryiog members.

How it is being used

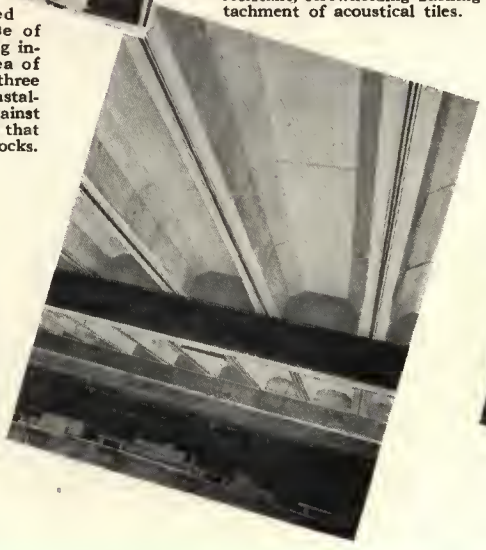
Applications of Nailock Universal Nailing Channels have been confined mostly to suspended ceiling construction, although their adaptability and practicability as a method of furring in concrete construction is obvious. Applications may be as varied as the architect's and contractor's ingenuity in adapting Nailock Universal Nailing Channels for various purposes. These illustrations show the manner in which Nailock Universal Nailing Channels are being used for suspended ceiling construction.



Backer-board being nailed to Nailock Universal Nailing Channel. In such an installation of backerboard Nailock Metal End Lock Strips maintain perfect alignment and prevent "breathing" through joints. Acousti-Lock Board with its shiplapped long edges makes a level, fire-resistant, screwholding backing for the attachment of acoustical tiles.

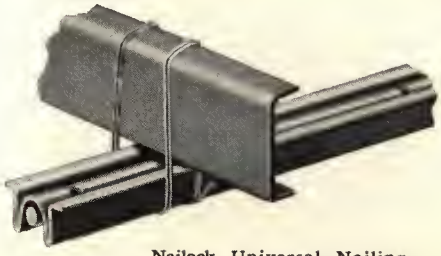
Acoustical tiles being fastened by mechanical means to backerboard. This provides a smooth, uniform, safe and permanent suspended ceiling construction.

Nailock Universal Nailing Channels being attached to carrying members by use of wire tie. This suspended ceiling installation covers a total area of 100,000 square feet divided in three equal sections. This type of installation provides protection against excessive vibration and damage that might occur from severe earth shocks.



Here Nailock Universal Nailing Channels are used for furring strips imbedded in pan type concrete construction to provide the means for attaching laminated backing board for receiving acoustical tile mechanically fastened. Refer to page 6 for construction details.

Nailing Channels attached to carrying members assures a rigid, uniform, safe and permanent suspended ceiling construction in Laboratory Building of a large manufacturer. This suspended ceiling installation illustrates adaptability of Nailock Method to troffer lighting.



2 Nailock Universal Nailing Channels may be attached to carrying members by the use of a saddle wire tie or a stirrup wire tie.

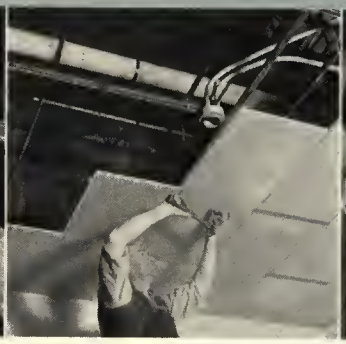
3 Nailock Universal Nailing Channels may be tack welded electrically or acetylene welded to steel carrying members.

4 A method of furring in concrete construction is provided when Nailock Universal Nailing Channels are imbedded in concrete slab or pan type construction.

THE *Nailock* METHOD OF SUSPENDED CEILING CONSTRUCTION WITH ACOUSTICAL TILE MECHANICALLY FASTENED OR CEMENTED TO SOLID BACKING

INSTALLATION REQUIRES *only 3 Operations*

Attach Nailock Universal Nailing Channel to carrying member by use of Nailock Spring Lock Clip. Use of this clip with special device for snapping it on to carrying member speeds up work and assures safety and permanency of installation.



Nailing solid backing to Nailock Universal Nailing Channel with Nailock Nails which form locking loop around rod and assure rigidity and permanency.

Cementing acoustical tile on to solid backing. This type of suspended ceiling construction avoids delay of waiting for plaster to dry.

Acoustical tiles being screwed on to solid backing. This provides for secure attachment of each tile unit, yet allows easy removal in emergencies without damaging tile.

PERMITS USE OF ANY ACOUSTICAL MATERIALS REQUIRED

The simplicity of this Nailock Method of suspended ceiling construction is emphasized by the operations illustrated. The solid backing is nailed directly to Nailock Universal Nailing Channels and provides a surface to which the small units of acoustical tile can be mechanically fastened by screws or cemented.

Acoustical tile cemented on or screwed on to solid backing provides a rigid, safe, permanent ceiling construction without the usual delay for a plaster base to dry. Solid backing adds fire protection and prevents "breathing" of the suspended acoustical tile ceiling. Acoustical tile mechanically fastened allows easy removal of the tile and replacement exactly as before whenever an emergency makes it necessary to get at the utilities above the ceiling area. An attachment for electric hand drills makes application of mechanically fastened tile extremely fast and sets each screw to just the right depth without any lost motion.

SPECIFICATIONS

For Furnishing and Installing Suspended Ceilings With Acoustical Treatment by the Nailock Method

Areas to be treated: Where called for on architect's plans, specifications and room finish schedule.

Hangers: Shall be spaced 4′-0″ O. C. in both directions of the area to be treated, special care being taken to see that the final rows of hangers are never spaced greater than 6″ from any wall. Hangers to be of size and type.....

Carrying members: Shall be for normal conditions, 1½″ cold rolled channels attached to hangers at proper level, and shall be water leveled, all to be spaced 4′-0″ O. C. and supported every 4′-0″.

Nailing Channels: Are to be Nailock Universal Nailing Channels spaced approximately but not over 24″ O. C. and attached to the carrying members. Attachment to be made by means of Nailock Spring Lock Clip or by means of a double 16 gauge wire tie. The first and the last Nailock Channels to be installed approximately 2″ from the parallel walls.

Backing: (1) Where acoustical tile are to be mechanically fastened; The entire area is to be covered with a solid backing of 9/16″ x 24″ x 96″ double laminated Gypsum Board with a screw retaining core, such as Acousti-Lock Board, nailed directly to Nailock Universal Nailing Channels with Nailock Nails, 1¾″ in length, spaced not over 5″ apart. (2) Where acoustical tile are to be cemented on; The entire area is to be covered with a solid backing of ½″ x 24″ x 96″ Gypsum Sheathing nailed directly to Nailock Universal Nailing Channels with Nailock Nails, 1¾″ in length, spaced not over 5″ apart. The backing for either mechanically fastened or cemented on acoustical tile shall be installed at right angles to the Nailock Universal Nailing Channels and care taken that all long-side joints be well matched. In all cases the backing shall extend beyond the Nailock Channels and a Nailock Metal End Lock Strip installed at every cross joint.

Acoustical tile: (1) Cemented on; To be cemented to the backing in accordance with the specifications and instructions of the manufacturer of the acoustical tile specified. *Note:* When no acoustical treatment is to be applied and ceiling finish is to be asbestos board, Gypsum Board or structural insulation board, use this specification and omit preceding paragraph on acoustical tile. (2) Mechanically fastened; To be applied to the backing by means of small wood screws (four to each tile), all in accordance with the specifications and instructions of the manufacturer of the acoustical tile specified.

Sound transmission: While the function of acoustical tile is mainly to act as a sound deadener for noises originating within the room or space where they are installed, the Acoustical Tile-Nailock combination, in addition, makes a very effective sound stop for noises originating both from within and without. The Nailock Nails, forming a loop around the rods, virtually afford a double spring isolation against transmission of sound.

DETAIL OF ACOUSTICAL TILE MECHANICALLY FASTENED

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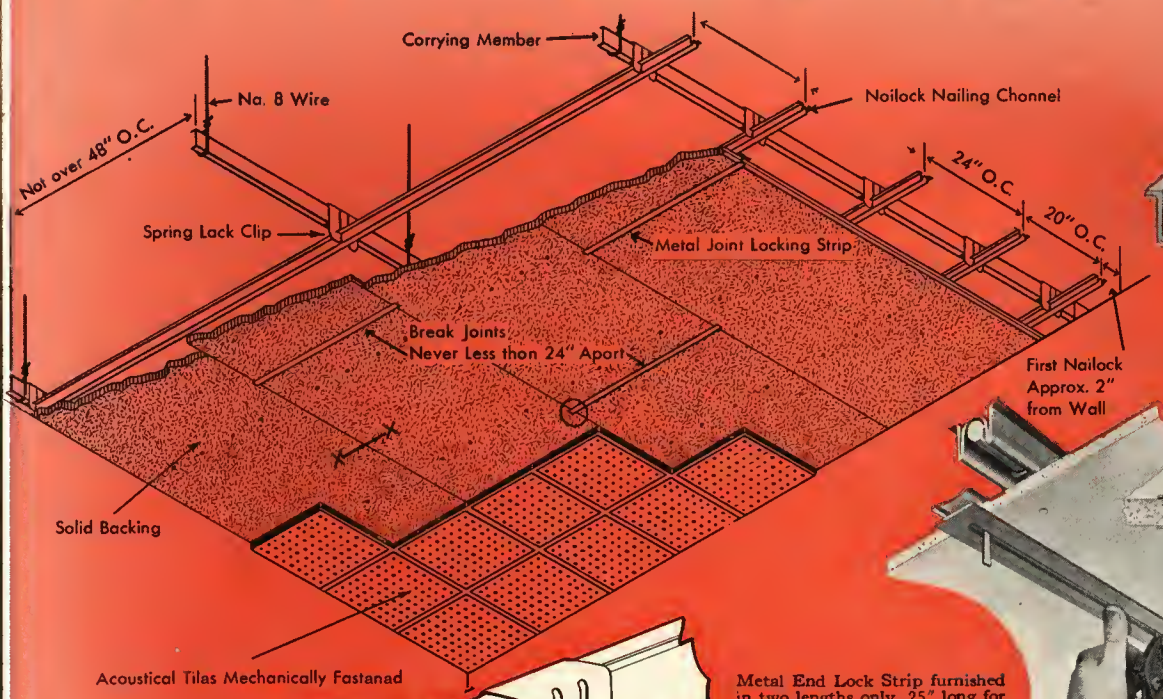
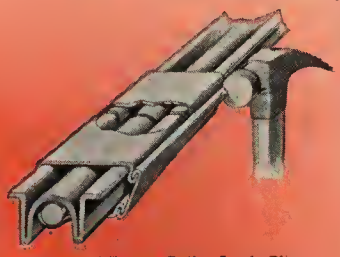
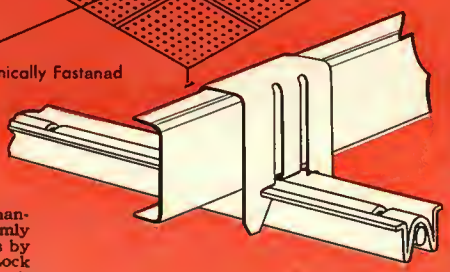
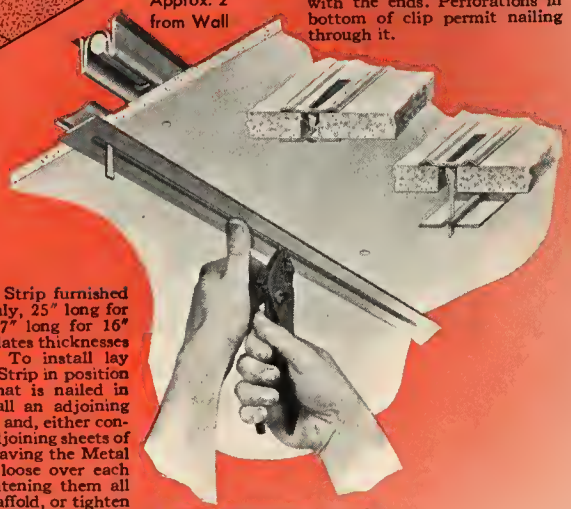




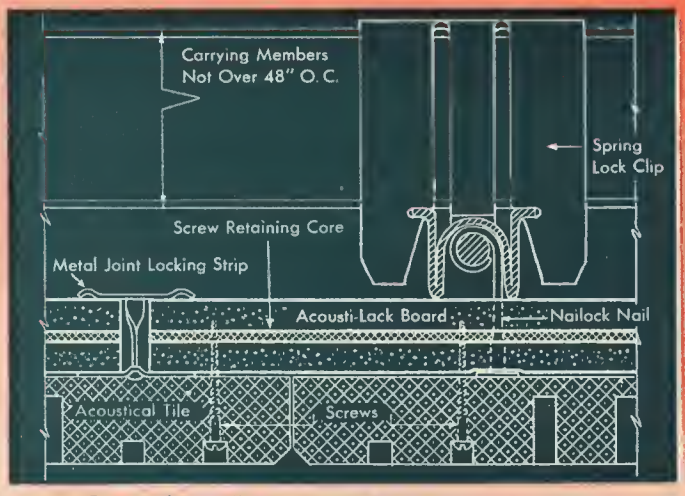
Special Zipper Splice Lock Clip holds adjoining ends of Nailock Nailing Channel in rigid position and prevents bulges or depressions in ceiling surface. This unit is securely fastened over adjoining channels by driving wedge on side until flush with the ends. Perforations in bottom of clip permit nailing through it.



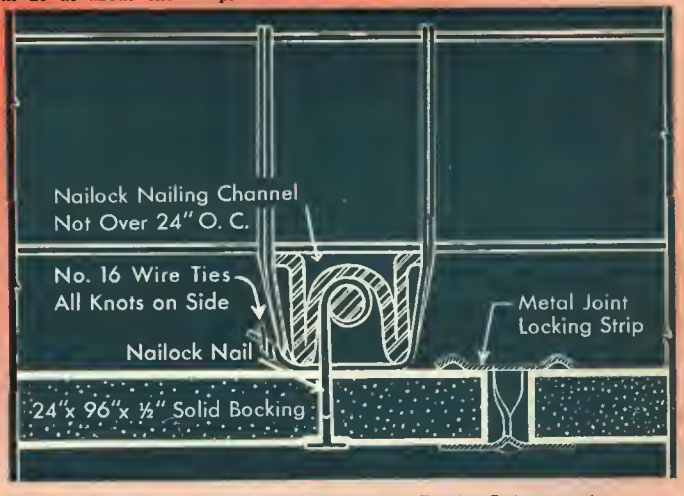
Nailock Universal Nailing Channels may be rapidly and firmly fastened to carrying members by using the Nailock Spring Lock Clip. The use of this clip speeds up the work and assures a rigid, firm and permanent installation.



Metal End Lock Strip furnished in two lengths only, 25" long for 24" board and 17" long for 16" board; accommodates thicknesses from ⅜" to 1". To install lay Metal End Lock Strip in position on the board that is nailed in place. Next install an adjoining sheet of material; and, either continue installing adjoining sheets of backing board, leaving the Metal End Lock Strip loose over each opening and tightening them all before moving scaffold, or tighten Metal End Lock Strip as you install each adjoining piece of backer board. To tighten Metal End Lock Strip over each opening take an ordinary pair of pliers, pull down metal tabs and twist each one until the holding tab breaks off flush with the bottom strip of the Metal End Lock Strip, which it will do at about one complete turn.



Construction detail where acoustical tiles are to be screwed on a laminated board with screw retaining core (Acousti-Lock Board). Size of this board is 5/16" x 24" x 96". Ship-lap on long edges. The ship-lapped edges prevent "breathing". The Nailock Method permits the use of a wide variety of materials and any acoustical materials desired installed in any pattern.



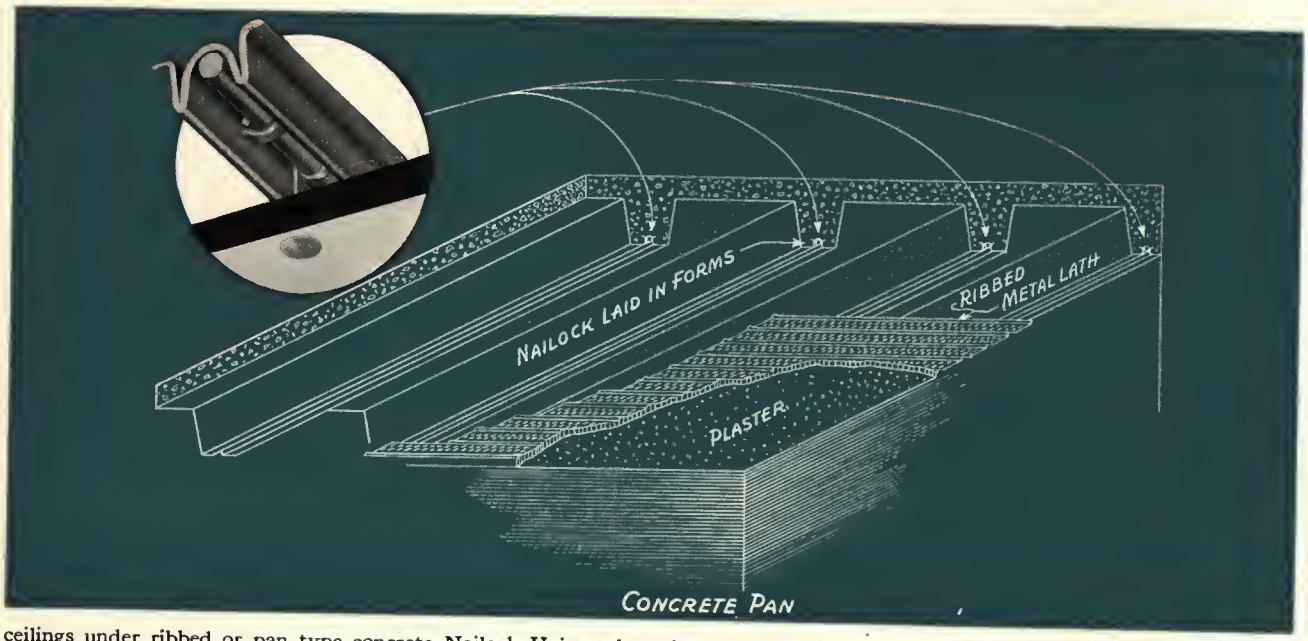
Nailock Universal Nailing Channels or Furring Strips may be fastened to carrying members by means of a double 16 gauge wire tie, as illustrated. This illustration also shows how backing board is nailed to Nailock Universal Nailing Channel and provides a good foundation to which any acoustical tile may be cemented.

The NAILOCK Method Permits Use of a Wide Variety of Materials for Suspended Ceiling Construction

The installation of permanent or temporary ceilings, requiring the use of Asbestos Board, Gypsum Board or Structural Insulation Board, and other similar materials, is facilitated by the use of Nailock Universal Nailing Channels. Nailing units of such materials to Nailock Channels with Nailock Nails brings each unit of the material tight against the Nailock Channel and holds it firmly and permanently in place. Be sure to use proper length Nailock Nails for the thickness of material being applied. Use 1½" long nails on ¼" to ⅜" thick board; 1¾" long nails on ½" thick board; 2" long nails on any material that is thicker than ½" up to 1" thick; 2½" long nails in material 1" to 1½" thick; and 3" long nails in material 1½" to 2" thick. A Metal End Lock Strip may be used for concealing the joints and maintaining perfect alignment. Taping long side joints as commonly practiced with Gypsum Wallboard can be done where desired.

Nailock Universal Nailing Channels must be installed in accordance with the material manufacturer's specifications covering the spacing for the installation of the materials. Nailing shall also be done to comply with the manufacturer's specifications. Some materials require nailing strips not more than 12" O. C., while others require them not more than 16" O. C.

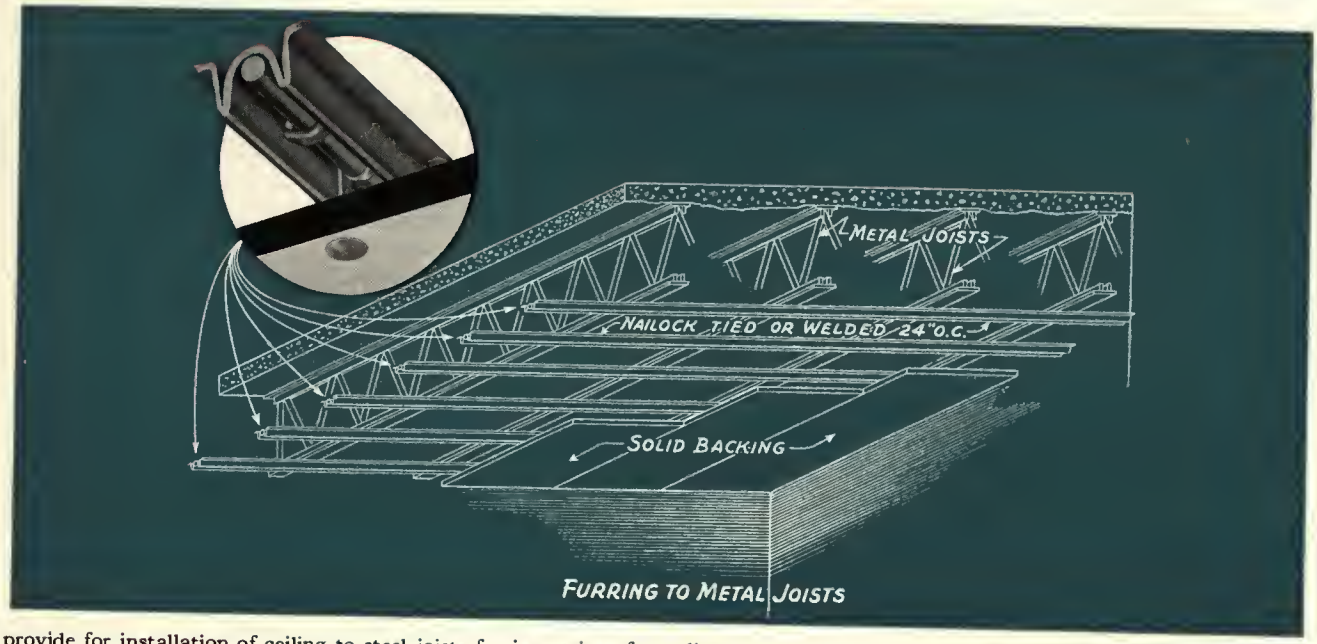
THE *Nailock* METHOD OF FURRED PAN TYPE CONCRETE CONSTRUCTION



For ceilings under ribbed or pan type concrete Nailock Universal Nailing Channels provide a convenient, suitable, safe and permanent means for the installation of various materials, such as ribbed lath for plaster, Gypsum Board, etc., which may be nailed with Nailock Nails directly to Nailock Channels. With Nailock Channels set in place and concrete poured around them, a strong, firm anchorage in the concrete is provided. Refer to laboratory test data on page 7 for load carrying capacity on Nailock Channels and Nailock Nails.

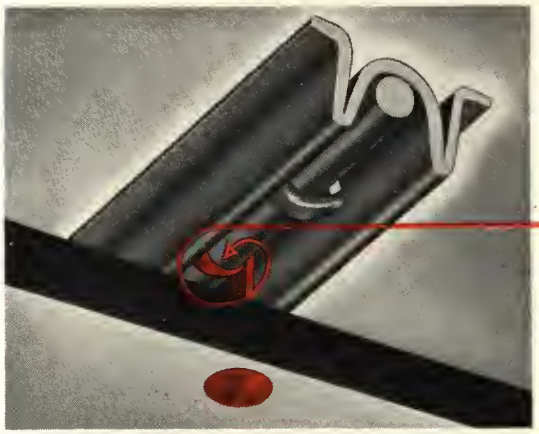
When acoustical tiles are to be applied, provision must be made for a suitable backing, such as Gypsum Board, to which the tiles may be fastened. The installation of the backing and the acoustical tiles should be made in the manner illustrated and described on pages 4 and 5.

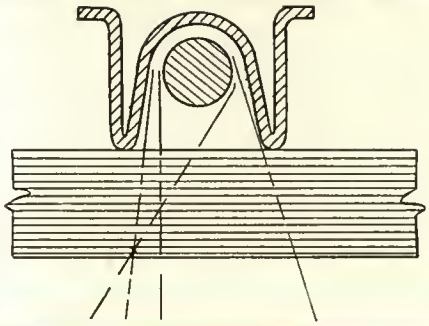
THE *Nailock* METHOD OF FURRING TO STEEL JOISTS



To provide for installation of ceiling to steel joists furring strips of Nailock Universal Nailing Channels provide for a firm, safe and permanent ceiling. Nailock Channels should be installed at right angles to the steel joists in accordance with limitation of span requirements as set forth in the current issue of A.S.A. and tack welded or wire tied to joists with two strands of 16 gauge or four strands of 18 gauge galvanized wire. Nailock Universal Nailing Channels provide for the subsequent application of various materials, such as ribbed lath for plaster, Gypsum Board, etc., which may be nailed directly to Nailock Channels with Nailock Nails. Refer to laboratory test data on page 7 for load carrying capacity on Nailock Channels and Nailock Nails.

When acoustical tiles are to be applied, provision must be made for a suitable backing, such as Gypsum Board, to which the tiles may be fastened. The installation of the backing and the acoustical tiles should be made in the manner illustrated and described on pages 4 and 5.





THE *Nailock* METHOD SECURELY FASTENS EVERY UNIT OF MATERIAL IN PLACE, ASSURING A POSITIVE ANCHORAGE AND A SAFE, PERMANENT INSTALLATION

NOTE: Width of nailing course provided by Nailock Universal Nailing Channels and how Nailock Nail locks on rod and holds backing or other material tight against channel.

The width of the Nailock nailing course speeds work because nails may be driven from several different angles and still strike somewhere within the limits of the nailing course. Whenever the point of a nail strikes on either side of the channel, or on the rod in the center, it is automatically deflected into the proper course to form a complete loop lock around the rod, thus providing security and safety that is otherwise unobtainable. This makes for the utmost speed in installation.

ENGINEERING SERVICE

Your inquiries in regard to the use and application of Nailock Universal Nailing Channels for specific purposes will be given prompt and careful attention by engineers of long experience in the application of insulating, acoustical and other materials. Engineering and laboratory work is conducted continually for the purpose of proving the degree of practicability of Nailock Universal Nailing Channels from the standpoint of economy, convenience and betterment of construction. Address your request for engineering assistance to Nailock Steel Division, The Sanymetal Products Co., Inc., 1701 Urbana Road, Cleveland 12, Ohio.

Engineering Laboratory Tests Prove Safety and Permanency of *Nailock* Method

Nailock Universal Nailing Channels were subjected to engineering laboratory tests by:

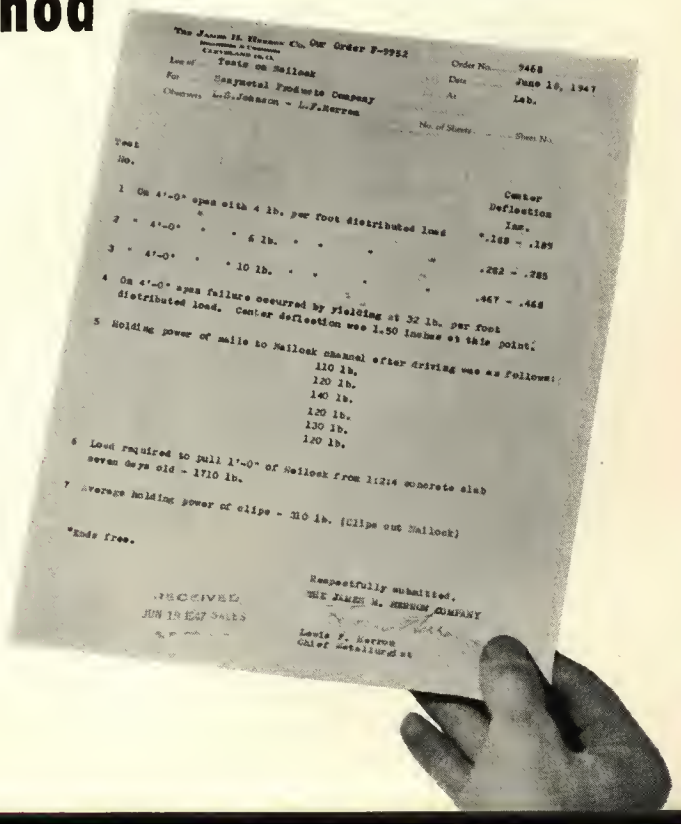
The James H. Herron Company
Engineers and Chemists
1360 West Third Street
Cleveland 13, Ohio

The observers were L. S. Johnson and L. F. Herron, chief metallurgist. Test Data Report was issued on June 18, 1947.

Test was conducted with 4′ span of Nailock Universal Nailing Channel with ends free. Test showed load carrying capacity exceeding all requirements. Not until a load of 32 lbs. per square foot was applied to the 4′ span did a failure occur. This would indicate Nailock Universal Nailing Channels have the load carrying capacity required for normal types of ceiling construction.

The average holding power of Spring Lock Clips is 310 lbs. The load required to pull 1′ of Nailock Universal Nailing Channel from a concrete slab is 1710 lbs.

The holding power of Nailock Nails driven into Nailock Channel as derived from six tests was determined to be an average of 122 lbs.


The James H. Herron Co. Our Order P-9952
Cleveland 13, O.

Test on Nailock — Order No. 9468
For Sanymetal Products Company — Date June 18, 1947
Observers L. S. Johnson - L. F. Herron — At Lab.
No. of Sheets — Sheet No.

Test No.		Center Deflection Ins.
1	On 4′-0″ span with 4 lb. per foot distributed load	.188 - .189
2	" 4′-0″ " " 6 lb. " " "	
3	" 4′-0″ " " 10 lb. " " "	.282 - .285
4	On 4′-0″ span failure occurred by yielding at 32 lb. per foot distributed load. Center deflection was 1.50 inches at this point.	.467 - .468

5 Holding power of nails to Nailock channel after driving was as follows:
110 lb.
120 lb.
140 lb.
120 lb.
130 lb.
120 lb.

6 Load required to pull 1′-0″ of Nailock from 1:2:4 concrete slab seven days old - 1710 lb.

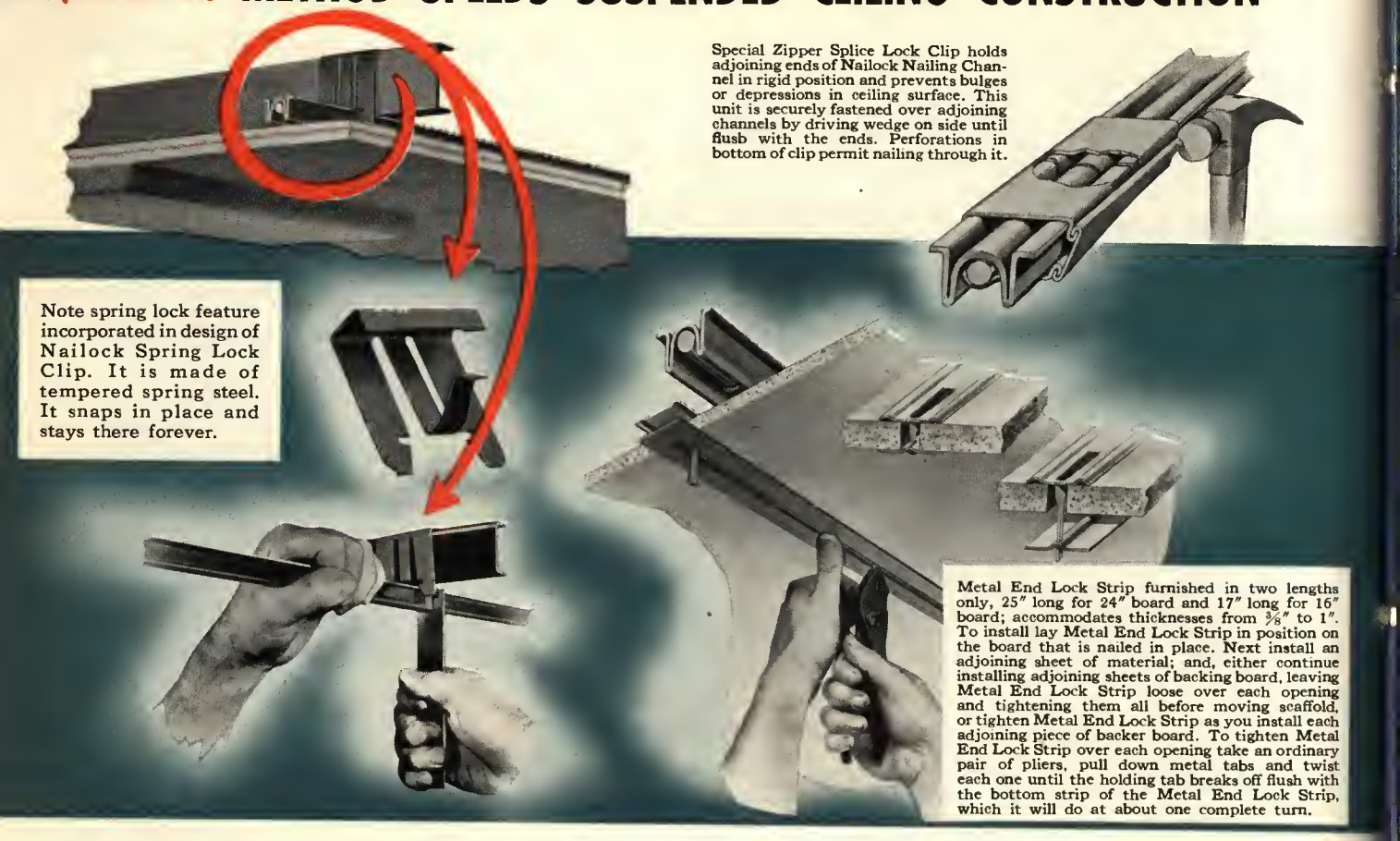
7 Average holding power of clips - 310 lb. (Clips cut Nailock)

*Ends free.

RECEIVED
JUN 19 1947 SALES

Respectfully submitted,
THE JAMES H. HERRON COMPANY
Louis F. Herron
Chief Metallurgist

THE *Nailock* METHOD SPEEDS SUSPENDED CEILING CONSTRUCTION



Special Zipper Splice Lock Clip holds adjoining ends of Nailock Nailing Channel in rigid position and prevents bulges or depressions in ceiling surface. This unit is securely fastened over adjoining channels by driving wedge on side until flusb with the ends. Perforations in bottom of clip permit nailing through it.

Note spring lock feature incorporated in design of Nailock Spring Lock Clip. It is made of tempered spring steel. It snaps in place and stays there forever.

Metal End Lock Strip furnished in two lengths only, 25″ long for 24″ board and 17″ long for 16″ board; accommodates thicknesses from ⅜″ to 1″. To install lay Metal End Lock Strip in position on the board that is nailed in place. Next install an adjoining sheet of material; and, either continue installing adjoining sheets of backing board, leaving Metal End Lock Strip loose over each opening and tightening them all before moving scaffold, or tighten Metal End Lock Strip as you install each adjoining piece of backer board. To tighten Metal End Lock Strip over each opening take an ordinary pair of pliers, pull down metal tabs and twist each one until the holding tab breaks off flush with the bottom strip of the Metal End Lock Strip, which it will do at about one complete turn.

Nailock Universal Nailing Channel Distributors

Distributors for Nailock Universal Nailing Channels are located in principal cities throughout the United States and Canada. In the following listing of distributors every state and province is listed for the purpose of identifying the particular distributor who is the source of supply for each state or province. Whenever unable to obtain Nailock Universal Nailing Channels through distributors, please wire or write factory at Cleveland 12, Ohio.

ALABAMA—Birmingbam: Acoustl Engineering Co., American Life Bldg.
ARIZONA—Phoenix: J. B. Matz, 817 West Madison.
ARKANSAS—Little Rock: Acoustics & Specialties, Inc. 313 Center Street.
CALIFORNIA—Los Angeles: The Harold E. Shugart Co., 911 N. Sycamore Avenue; Oakland: The Western Ashestos Co., 428 Latham Sq. Bldg.; San Francisco: The Western Ashestos Co., 675 Townsend Street; Sacramento: The Western Asbestos Co., 1224 I Street.
COLORADO—Denver: Lauren Burt, Inc. of Colorado, 3254 Walnut Street; Salt Lake City, Utah: Lauren Burt, Inc. of Wyoming, 557 So. Third West.
CONNECTICUT—Hartford: The C. A. Bader Co., 229 Buckingham Street.
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DISTRICT OF COLUMBIA—Bladensburg, Md.: The Hampshire Corp., 4626 Defense Highway.
FLORIDA—Jacksonville: Acoustl Engineering Co. of Fla., 139 Riverside Avenue; Miami: Acoustl Engineering Co. of Fla., 46 N. E. Sixth Street; Tampa: Acoustl Engineering Co. of Fla., P. O. Box 291.
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ILLINOIS—Chicago: Branch-Nicoloff Co., 549 W. Washington Blvd.
IOWA—Omaha, Neb.: Earl S. Lewis & Co., 412 Woodmen of the World Bldg.
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KENTUCKY—Louisville: E. C. Decker Co., 107 W. Main Street.
LOUISIANA—New Orleans: Acoustics & Specialties, Inc., Hibernia Bank Bldg.
MAINE—Boston, Mass.: Pitcher & Co., 177 State Street.
MARYLAND—Baltimore: The Hampshire Corp., 330 West 24th Street.
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NEBRASKA—Omaha: Earl S. Lewis & Co., 412 Woodmen of the World Bldg.
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THE SANYMETAL PRODUCTS CO., INC.

1701 URBANA ROAD • CLEVELAND 12, OHIO

Printed in U.S.A.

POMEROY

system

of

MECHANICAL FASTENINGS
FOR ACOUSTICAL MATERIALS

METAL STUDS AND FURRING FOR
NON-BEARING WALLS AND CEILINGS

CONTINUOUS METAL CONCRETE INSERTS

CAT. 4

S. H. POMEROY COMPANY · 25 BRUCKNER BOULEVARD, NEW YORK 54, N. Y.

The Pomeroy System

The Pomeroy System is the universal Dry Wall and Ceiling Supporting System for all kinds of finishing materials. Such materials as Plaster Boards, Acoustical Units of all kinds.

Asbestos Cement Boards, Flush Metal Panels, Insulating Boards, etc., can be securely anchored in place on walls or ceilings.

The Pomeroy Anchor Bar which is the heart of the System is designed to receive and hold Annular Nails, Buttoned Flanges, Screws, Kerfed Tiles, etc. This one bar is adapted to perform all the functions of a Ceiling Furring Strip, Wall Stud or Concrete Insert.

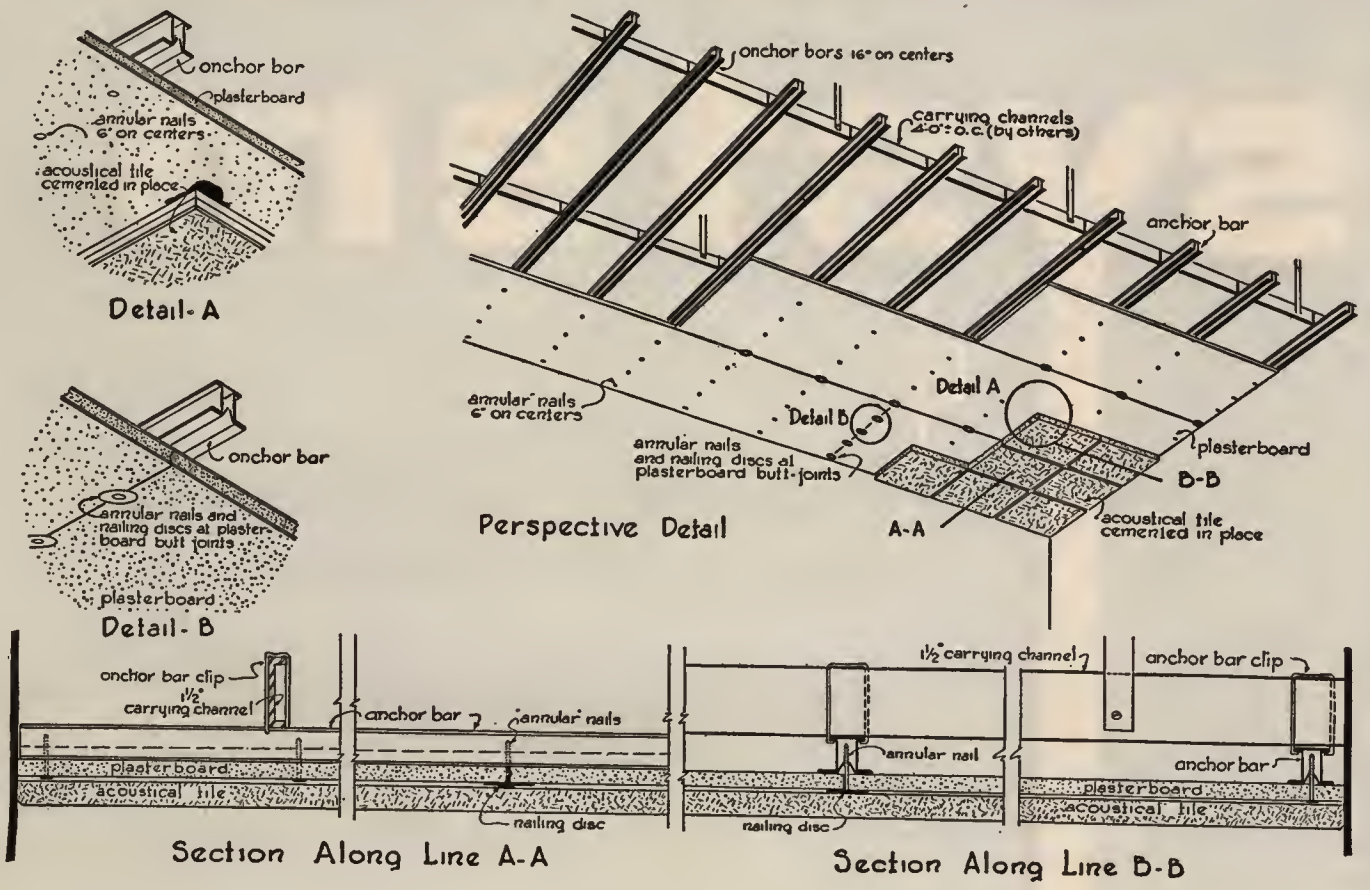
Details for the attachment of Flush Metal Panels, Wall Boards, Fluorescent Lighting Fixtures, etc., will be furnished upon request.

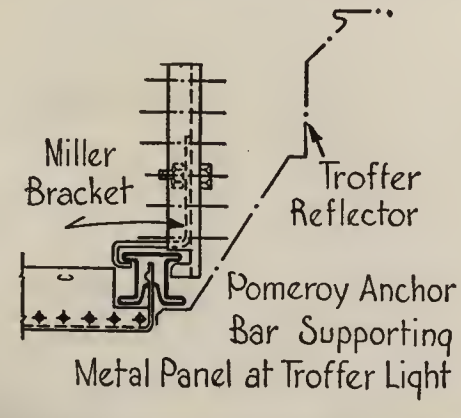
Detail No. 1 shows method of supporting Fireproof Plaster Board backing for Acoustical Units. (See below.)

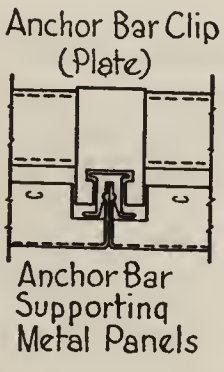
Detail No. 2 shows the method used to suspend and spline, 12" x 24" kerfed fireproof Acoustical Units. (See top page 3.)

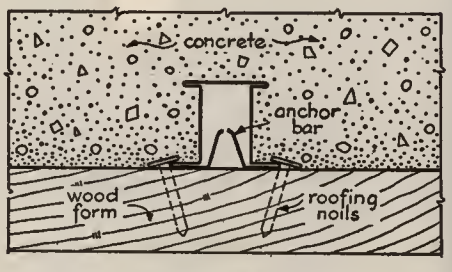
Detail No. 3 showing typical framing to receive perforated asbestos cement panels with removable and adjustable features. See Cross Sectional Views at Y and X. (See botton page 3.)

DETAIL No. 1





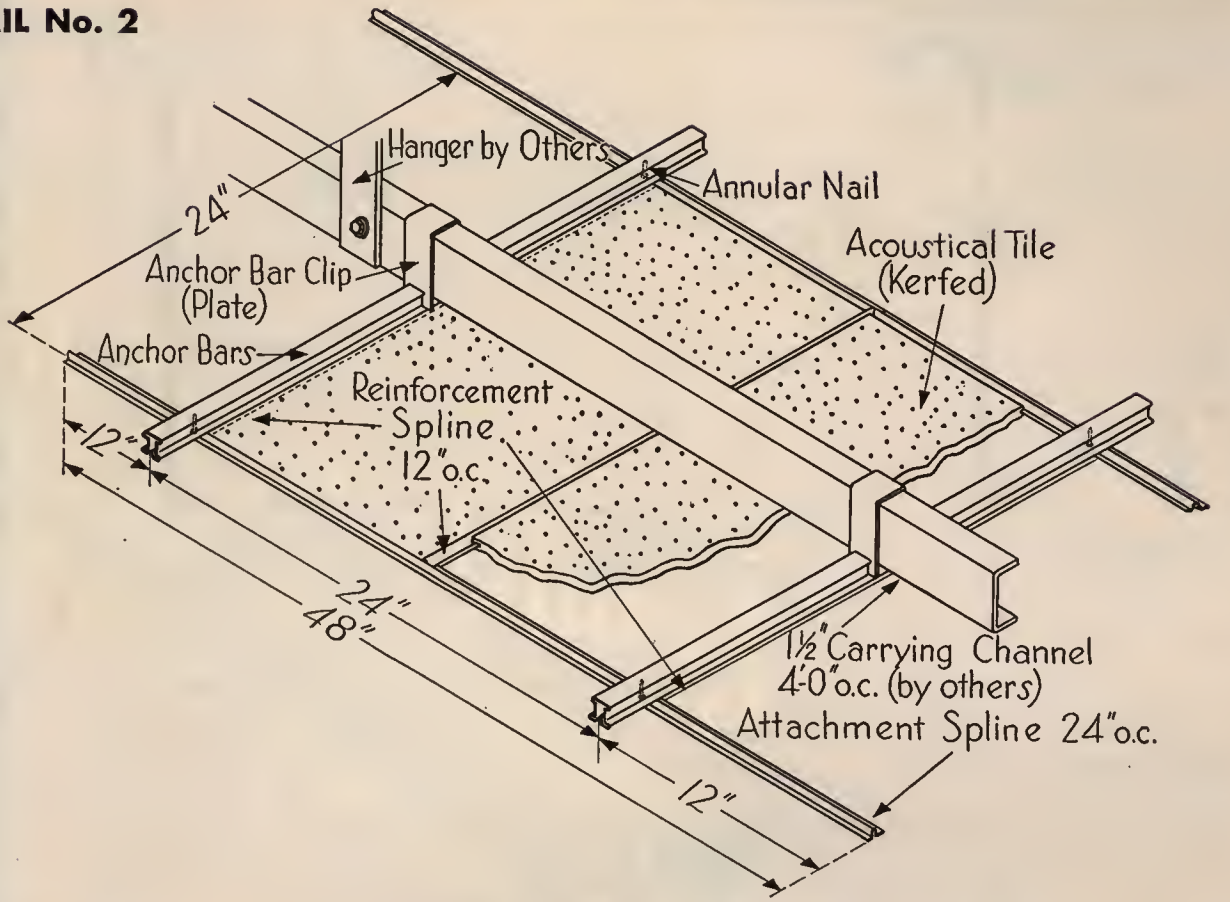




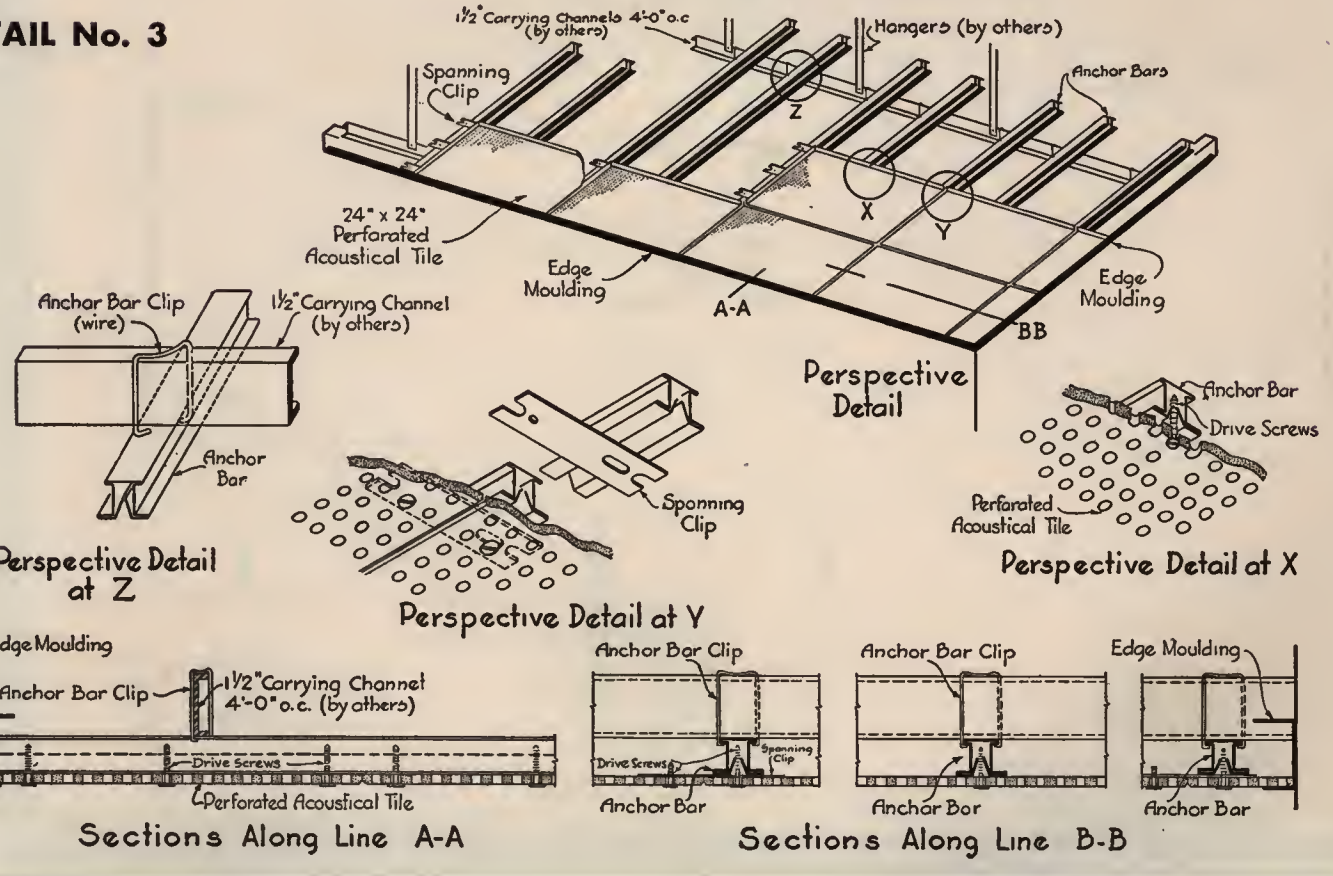
Anchor Bar

Details showing method of using Anchor Bor for concrete insert.

DETAIL No. 2

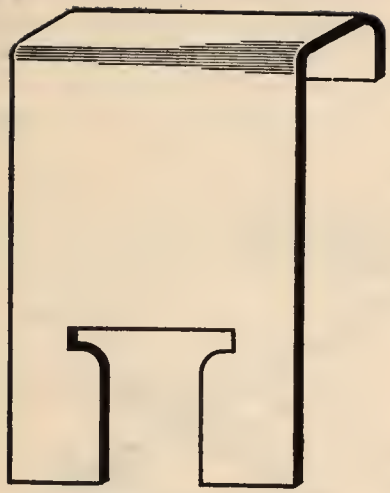


DETAIL No. 3

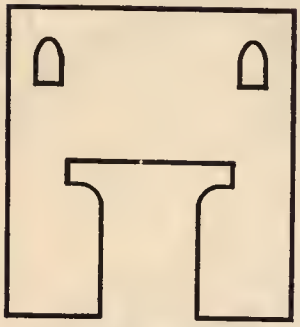


POMEROY SYSTEM PARTS

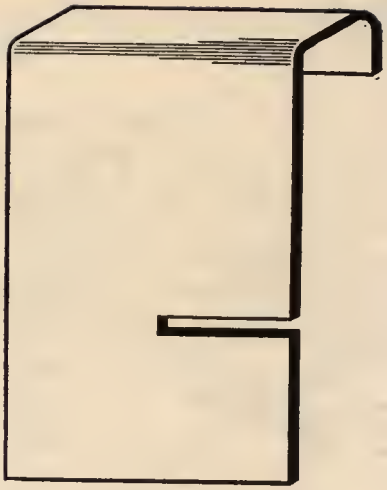
Details are Full Size



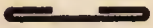
ANCHOR BAR CLIP
(Plate)



SHORT-STRAIGHT
ANCHOR BAR CLIP



BUTTWALL
ANCHOR BAR CLIP



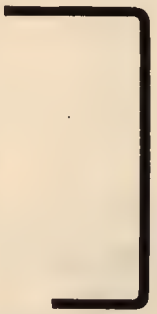
BUTT JOINT CLIP

SPANNING CLIP

COUPLING

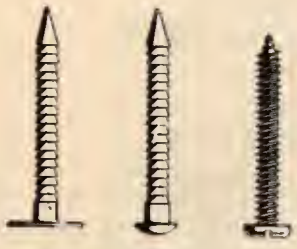
ANCHOR BAR CLIP
(Wire)

ANCHOR BAR



EDGE MOULDING

ATTACHMENT SPLINE
(Pierced for Nails)



ANNULAR NAILS
& SHEET METAL SCREWS

TILE
REINFORCEMENT
SPLINE

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THE *Jackson System*

"Nailing to Metal"

STEEL CHANNELS and INSERTS

for

Nailing Materials to Steel, Concrete, and Masonry.
Mechanical Fastenings for Acoustical Materials.
Metal Furring for Walls and Concrete Inserts.

Sole Distributors

THE MID-WEST ACOUSTICAL & SUPPLY CO.

General Office and Warehouse—1812 St. Clair Ave., Cleveland 14, Ohio

Telephone: MAin 0031

the Jackson system of nailing to metal is an all metal system for supporting and fastening securely by mechanical devices a number of building materials used for ceiling and wall construction.

The basic devices of the Jackson System are a continuous rigid and light weight furring member of zinc-coated steel and a spear point nail. The dove tail profile of this furring member incorporates an inverted V-shaped nailing groove throughout its length. The nail is forced into the nailing groove of the metal furring member and locked in place by its shoulder (as shown in the circle above).

Spear point nails are manufactured in various lengths to meet construction requirements. Other metal parts, consisting of various clips and splines, are used to complete the system and are shown herein.

Jackson System is installed by and available through all acoustical contractors and manufacturers.

the uses of Jackson system are as varied as the architects' ingenuity in employing this nailable and economical "metal furring" for installing the following products:

Acoustical tiles and treatments.
Thermal and sound insulating materials.
Ceiling and wall boards of fibre, gypsum, etc.
Perforated or plain asbestos panels.
Plaster bases of gypsum.
Nailable concrete inserts.
Metal nailable ceiling framing.

Illustrated in this bulletin are several methods of installing acoustical materials with Jackson System. Architects can specify Jackson System with the utmost confidence.

For furthur engineering and construction information write to:
The Mid-West Acoustical & Supply Co.
1812 St. Clair Avenue, Cleveland 14, Ohio

mounting furring strips preparatory to applying ceiling base using the JACKSON SYSTEM.

perforated asbestos panels attached to JACKSON SYSTEM.

Jackson system parts

furring clip

tile attachment spline

butt wall furring strip

furring strip or concrete insert

Furring strip splicer

tile reinforcement spline

Jackson system

fastening ceiling base of plasterboard into position using the JACKSON SYSTEM.

ceiling base ready for application of acoustical tile. Note the clips used in the JACKSON SYSTEM.

butt wall furring clip

straight-leg butt wall clip (long)

straight-leg furring clip (short)

plasterboard butt joint clip

butt wall tile reinforcement angle

spear point nail

advantages

Jackson System has been carefully engineered and field tested to provide the best possible means of installing suspended acoustical ceilings. It provides a permanent, safe, economical means to install acoustical tiles and other ceiling materials of practically every size, type and manufacture. It is equally adaptable to remodeling as well as to new construction.

All parts of the system are incombustible and are not affected by temperature changes.

The rigid light weight furring member of zinc-coated steel is easily handled on the job.

Installation is direct and speedy. Special tools are not required.

Expense and delays of ordinary plastering are eliminated.

Accurately machine-kerfed acoustical tiles assure uniform setting with all tiles finished to an even plane.

Tiles cannot work loose. Each tile is securely held by positive mechanical fastenings.

Close fitting splines prevent passage of air between the edges of the tiles.

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kerfed acoustical tile	page 6
parts	pages 2-3
perforated asbestos panels	page 7
specifications	page 9

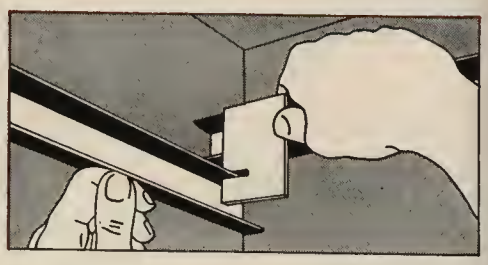
Jackson System installation

Install Channel Carrying Bars. The first step in installing the complete framing for the acoustical ceiling finish is fastening 1½ x ⅜ inch channel carrying bars at the correct height and perfectly level. Carrying bars, which usually run the long way of the room, are installed 6 inches out from parallel walls and not over 4 feet-0 inch on centers.

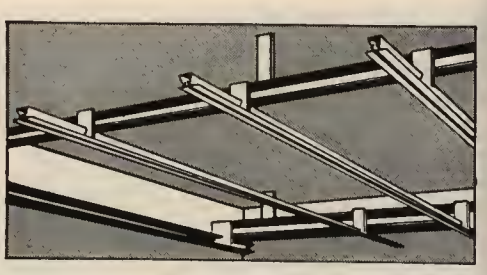
Install Jackson Ceiling Framing. Illustrations Nos. 1-3 inclusive show the steps taken to install the two basic furring members of Jackson System. Note how easily these members are attached to the carrying bars to form a permanent, positive all-metal ceiling framing. Illustration No. 4 shows a completed section framing ready for the acoustical tile or other finish ceiling material.

Install Kerfed Acoustical Tile. Illustrations Nos. 5-9 inclusive show the steps in the installation of the acoustical tile. Note how the acoustical tiles are fastened to the furring strips and reinforced on the sides running at right angles to the furring strips by means of tile reinforcement splines.

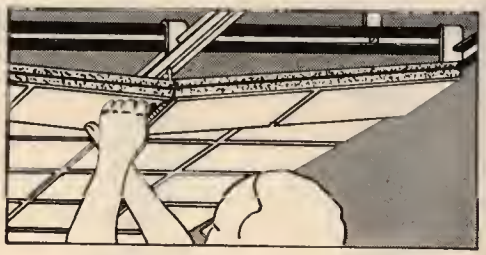
Thus Jackson System gives an installation that is direct, speedy and decidedly economical. Each tile is securely held by positive mechanical fastenings with close fitting splines which prevent passage of air between the edges of the tiles.



1 **install butt wall furring strips** • At both short ends of the room — where the ceiling finishes or butts against the wall — install the butt wall furring strip. Attach this strip to the channel carrying bars with the butt wall furring clips, as illustrated. Next . . .

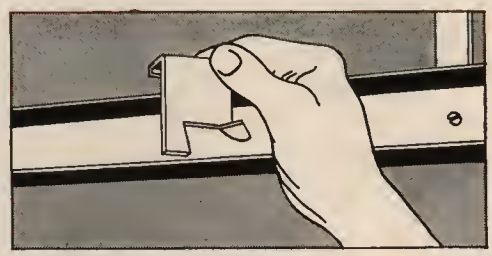


4 **ready for the tile** • Illustration shows supporting members of the metal ceiling suspension system ready to receive and support the acoustic tile units.

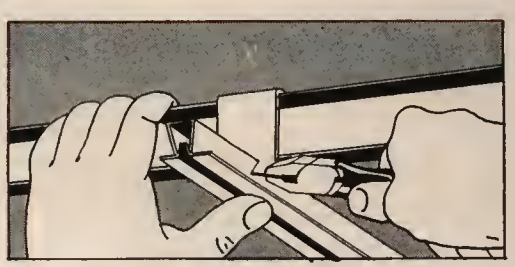


7 **complete the course** • To install closure tiles at end of each course, place an attachment spline in the butt joint of two tile units. Engage the groove of one tile with the spline of the tile already installed. Engage the groove of the other tile in the flange of the butt wall furring strip. To fasten both tiles, apply upward pressure until the spear point nails engage the continuous furring strip.

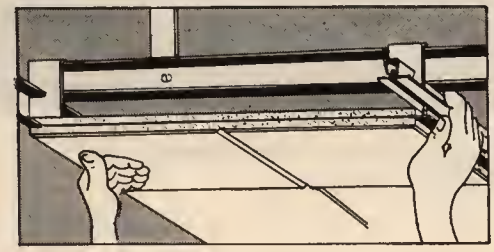
Jackson system



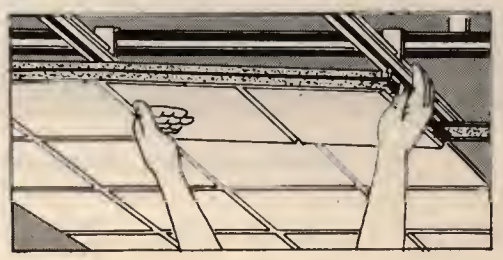
2 set clips for furring strips • To fasten all other cross furring strips, place the furring clip, as illustrated, on the carrying channel. Space clips to accommodate the size of acoustic tile to be installed. Then . . .



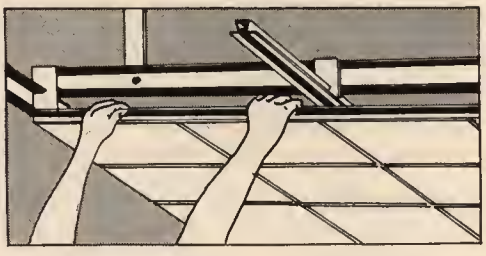
3 fasten furring strips in place • To fasten the metal nailing furring strips to the channel carrying bars, bend down the leg of the furring clip over the furring strip with pliers, as illustrated.



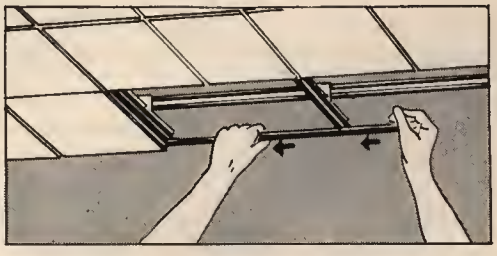
5 start the acoustic tile • Start the tile at the short end of the room. Insert the lower flange of the butt wall furring strip into the groove of the acoustic tile. Place an attachment spline—with spear point nails inserted—into the other end of the acoustic tile unit. Snap in place as illustrated.



6 continue the course • All other acoustic tile—except when finishing at the other short end of the room—are installed as illustrated. Engage the groove in the acoustic tile to the attachment spline at the butt joints. At the other end of the tile unit, snap an inserted attachment spline in place.

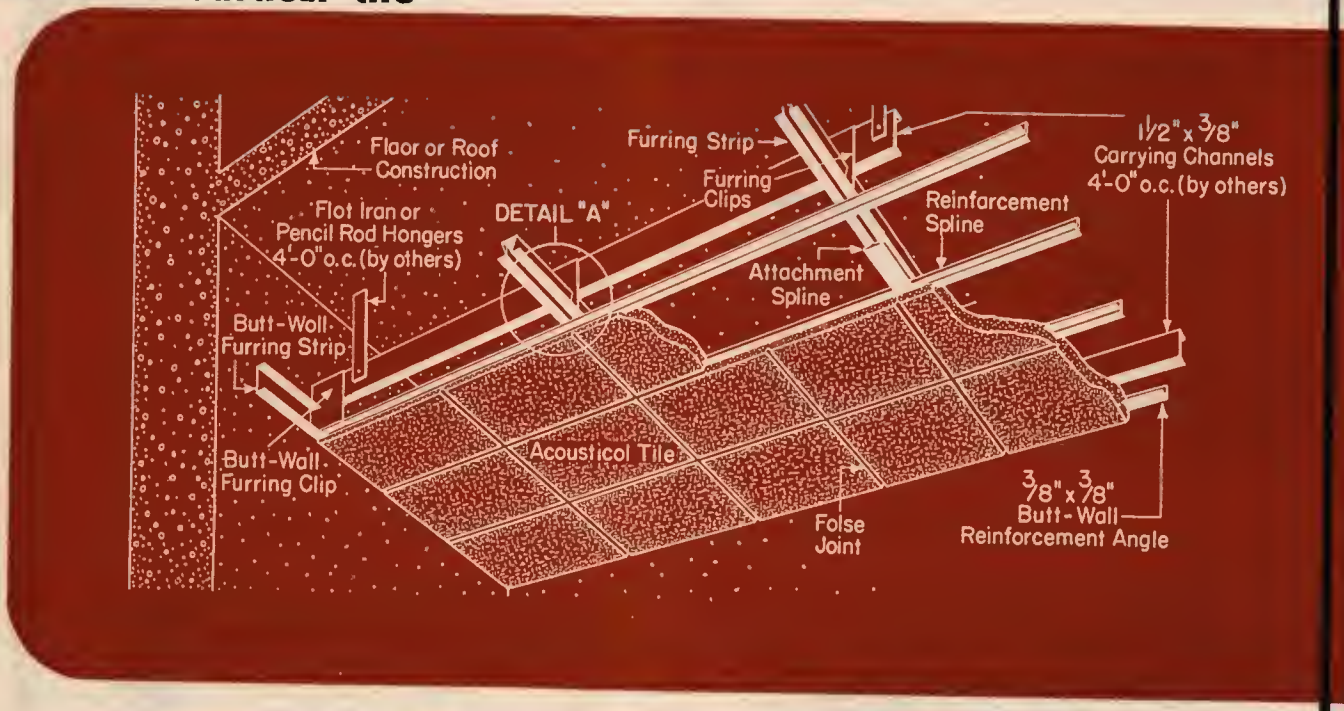


8 install the reinforcement spline • After each course of tile is fastened in place, insert the reinforcement (or T) spline as illustrated—to bear on the butt wall furring strip and attachment splines. This reinforcement spline (4 feet long) should be installed in broken joints on alternate courses—thus supporting tile on all four edges, sealing joints and preventing "breathing."



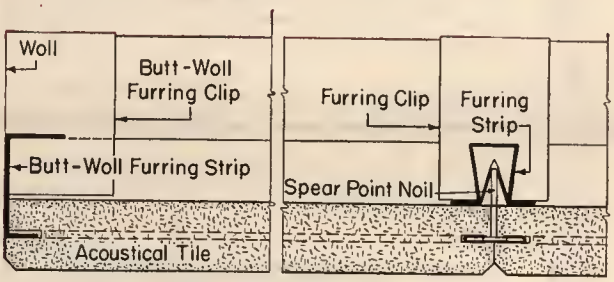
9 install closure tiles on long wall • Engage two acoustic tile units. Support the three sides of these tiles as previously described. Slide the butt wall tile reinforcement angle (3/8 x 3/8 inch) through the grooved fourth side of these tiles—to complete the continuous supports. Repeat this procedure to the end acoustic tile unit.

kerfed acoustical tile

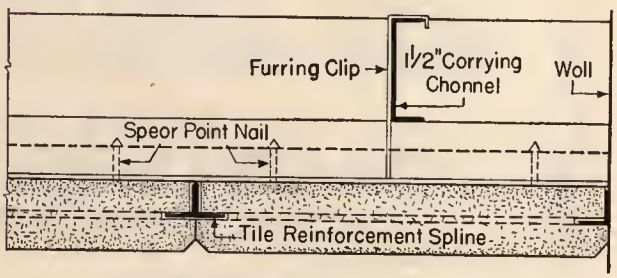


Kerfed acoustical tile supported by Jackson System. Detail shown is for 12 to 24-inch tiles.

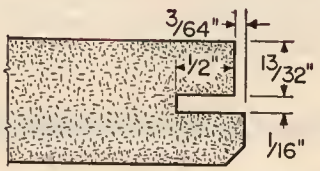
construction details



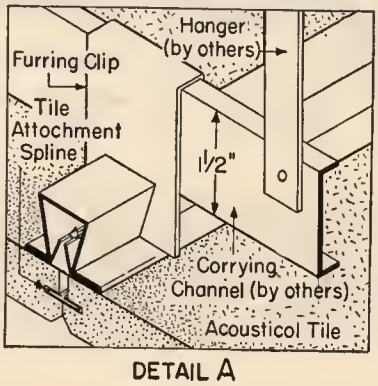
LONGITUDINAL SECTION THRU CEILING



TRANSVERSE SECTION THRU CEILING

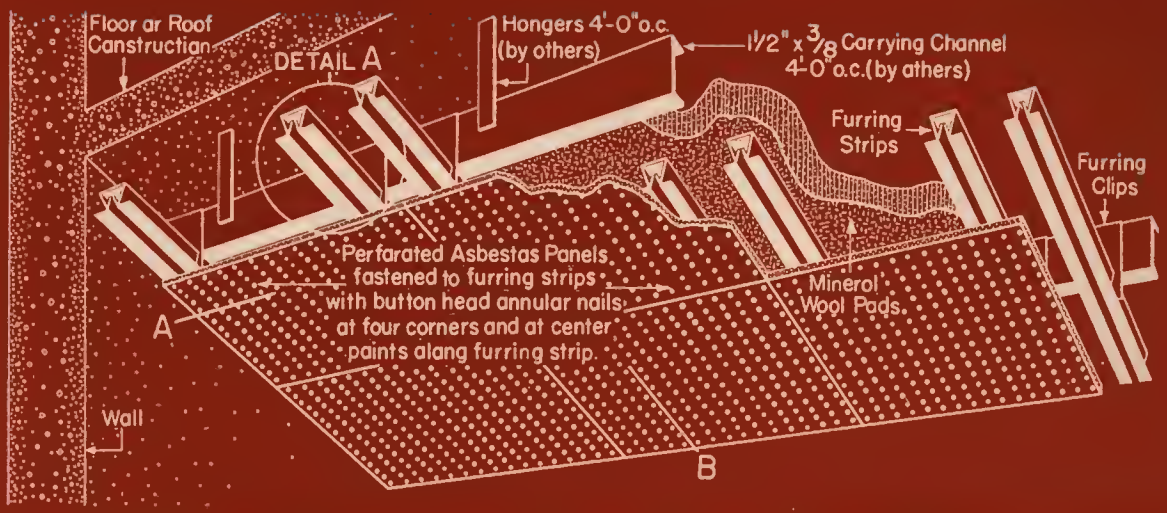


Detail showing dimensions for kerfing of acousticol tile to be suspended by The Jackson System (Detail same on all four sides)

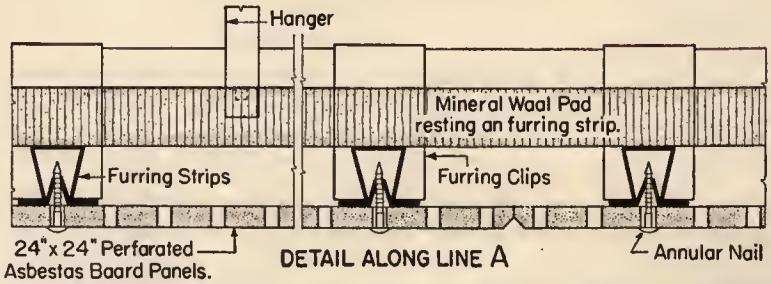


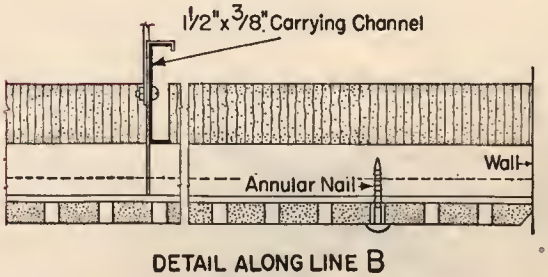
DETAIL A

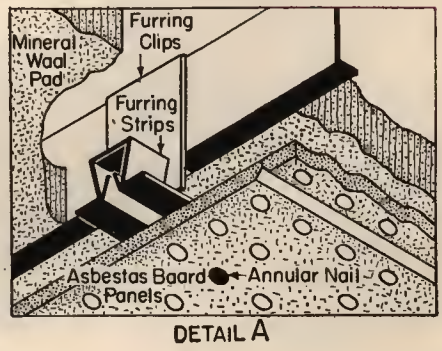
perforated asbestos panels



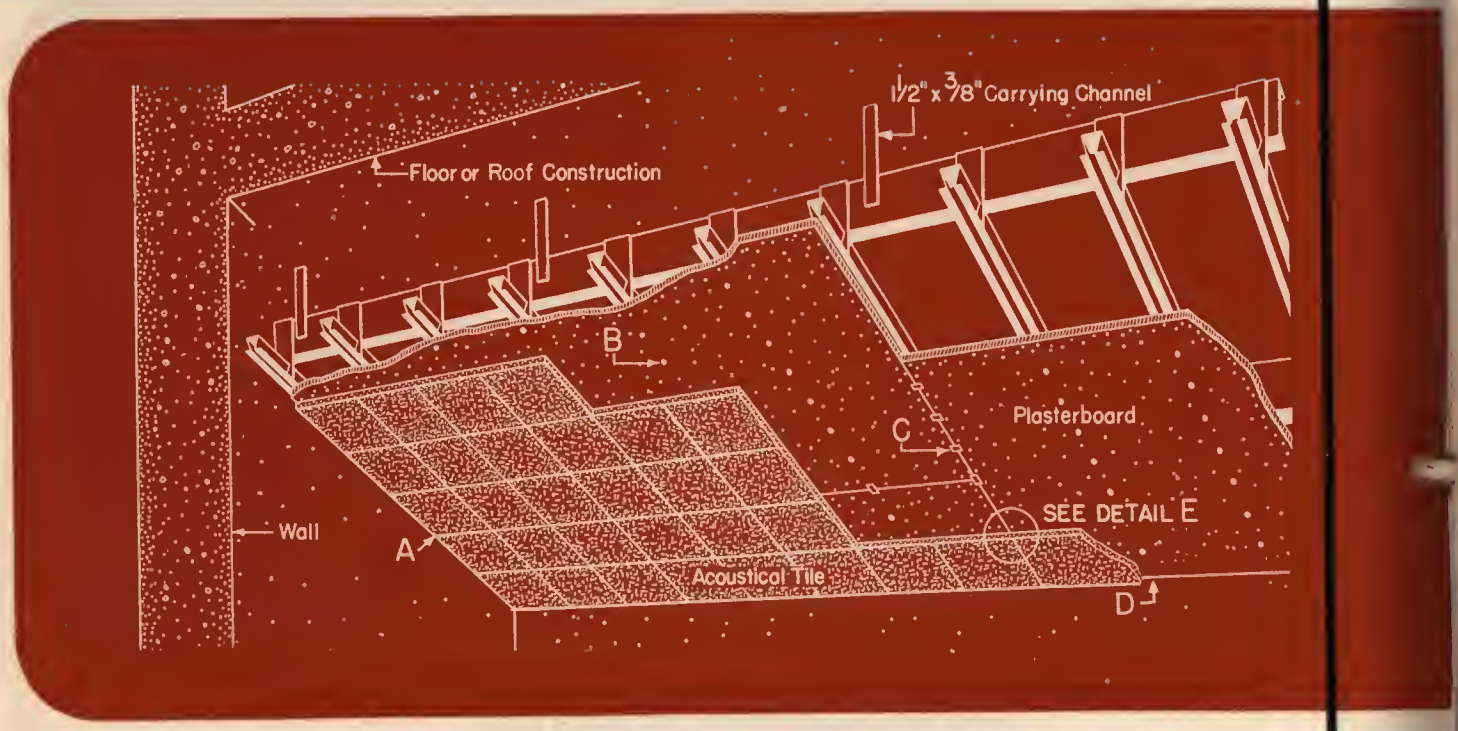
Perforated asbestos panels supported by Jackson System. Note mineral wool pads installed on top of furring strips.





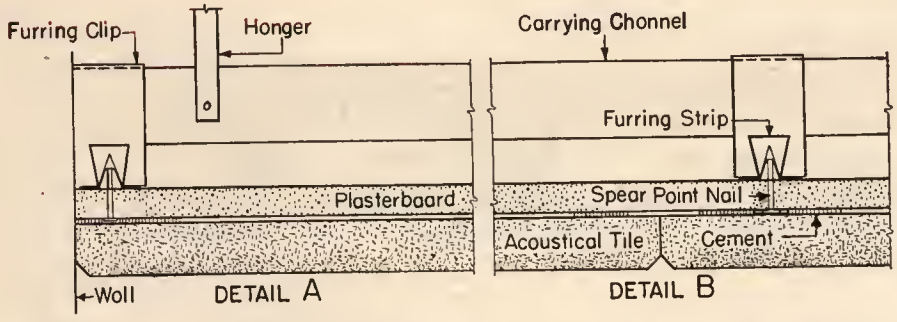


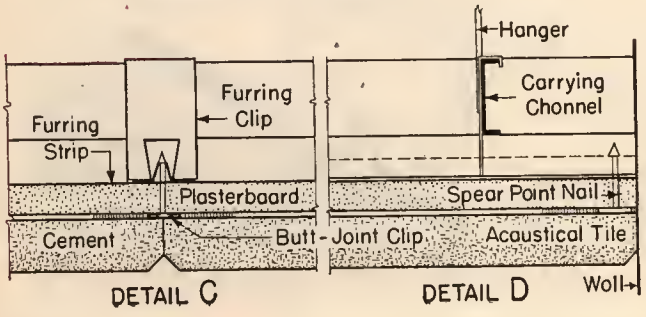
acoustical tile cemented to plaster board

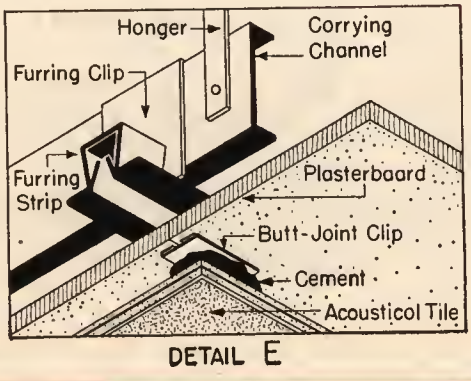


Plasterboard backing attached to Jackson System. Plasterboard backs-up and prevents breathing of suspended acoustical tile ceiling.

construction details







Jackson system

specifications

for furnishing and installing acoustical suspended, attached or furred ceilings with "the Jackson system" of mechanical fastening . . . permits the use of any acoustical material desired

areas to be treated—Where called for on Architect's plans, specifications and room finish schedule.

Note: No metal channel cross furring, metal lath or plaster required in areas where acoustical material is to be installed with Jackson System.

Note: In areas where acoustical material is to be installed, the electrical contractor shall furnish and install all the necessary supports required for his work to be located above the acoustical ceilings.

hangers—(Inserted under lathing specifications) Hangers shall be inserted in the concrete forms before concrete is poured or attached to steel beams or concrete arches in a manner approved by the Architect. Hangers or concrete inserts are to be spaced not over 4'-0" on centers. Flat iron extension hangers 1" x ⅛" are to be attached to hangers or concrete inserts. Extension hangers are to be properly bolted to the carrying bars. Pencil rod hangers may be used in lieu of flat iron hangers.

carrying bars—(Inserted under lathing specifications)

Note: Architect should select either the Channel Type or the Jackson Type and specify as given below. Erection specifications are the same for both types.

channel type—The carrying bars are to be 1½" x ⅜" channels spaced not over 4'-0" on centers and 6" out from parallel walls and fastened to the flat iron hangers with ⅜" bolts. Pencil rod hangers may be used in lieu of flat iron hangers.

Jackson type—(Alternate). The carrying bars are to be Jackson Furring Strip spaced not over 4'-0" on centers and 6" out from parallel walls. The carrying bars are to be fastened to the flat iron hangers by means of Jackson Straight Leg Furring Clip (Long), which has been attached to the hanger with ⅜" bolt.

erection—Carrying bars are to be installed so that they run parallel to the wall surfaces and the long way of the space to be treated. Where carrying bars end at a wall or beam, holes shall be cut into the construction and the carrying bars inserted therein. Carrying bars are to be erected perfectly level and true to line, located at proper height to receive the Jackson Metal Furring Strip and the acoustical material at the proper finished ceiling height as shown on Architect's plans, specifications and finished room schedule.

Specifications for special applications will be submitted upon request.

a Jackson method for any type of acoustical installation

Note: The architect should specify the type of Jackson System required for the acoustical installation as noted below.

kerfed acoustical tile

(*see page 6*)

furring strips—are to be Jackson Furring Strips properly fastened to the carrying bars with Jackson Metal Furring Clip and spaced on centers to accommodate the units of the acoustical tile to be installed. Where the acoustical material finishes and butts against the wall at the short ends of the room, install Jackson Butt Wall Furring Strip fastening it to the carrying bars with the Jackson Butt Wall Furring Clip.

acoustical tile—kerfed and rabbeted for the Jackson System is to be fastened in place to the Jackson Furring Strip with Jackson Attachment Spline and Spear Point Nails, engaging the tile at the butt joints running parallel to the Jackson Furring Strip. The attachment spline, with Spear Point Nails inserted, is to be inserted in the kerf of the acoustical tile and the tile attached to the Jackson Furring Strip by pushing the Spear Point Nails into the continuous "V" shaped groove of the Jackson Furring Strip, which locks the acoustical tile in place. At the butt joints of the acoustical tile that run at right angles to the furring strip, insert in the kerf of the tile the Jackson Tile Reinforcement Spline, which reinforces the tile and prevents passage of air at all four joints of the acoustical tile units.

perforated asbestos panels

(*see page 7*)

furring strips—are to be Jackson Furring Strips fastened to the carrying bars with Jackson Metal Furring Clip and spaced on center to accommodate the asbestos panels to be installed.

Note: Usual spacing for 24" x 24" panels is on alternate centers of approximately 23¾" x 21¼" so that the panels can be fastened to the strips along the third row of perforations.

perforated asbestos panels—are to be fastened to the Jackson Furring Strips with button head Annular Type Nails inserted through the perforations of the panels at the four corners and at center points along furring strips.

Where diameter of perforations is greater than 5/32" specify Spear Point Nails.

acoustical tile cemented to plasterboard backing

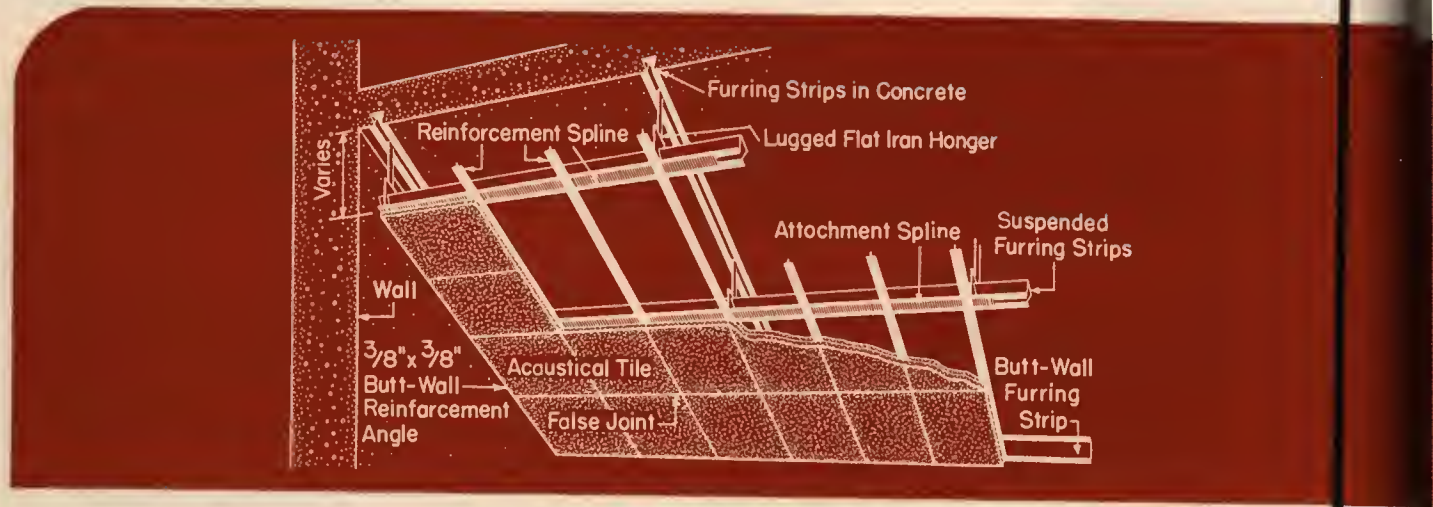
(*see page 8*)

furring strips—are to be Jackson Furring Strips fastened to the carrying bars with Jackson Metal Furring Clip and spaced on 16" centers. The first and last furring strips are to be installed approximately 2" from the parallel walls.

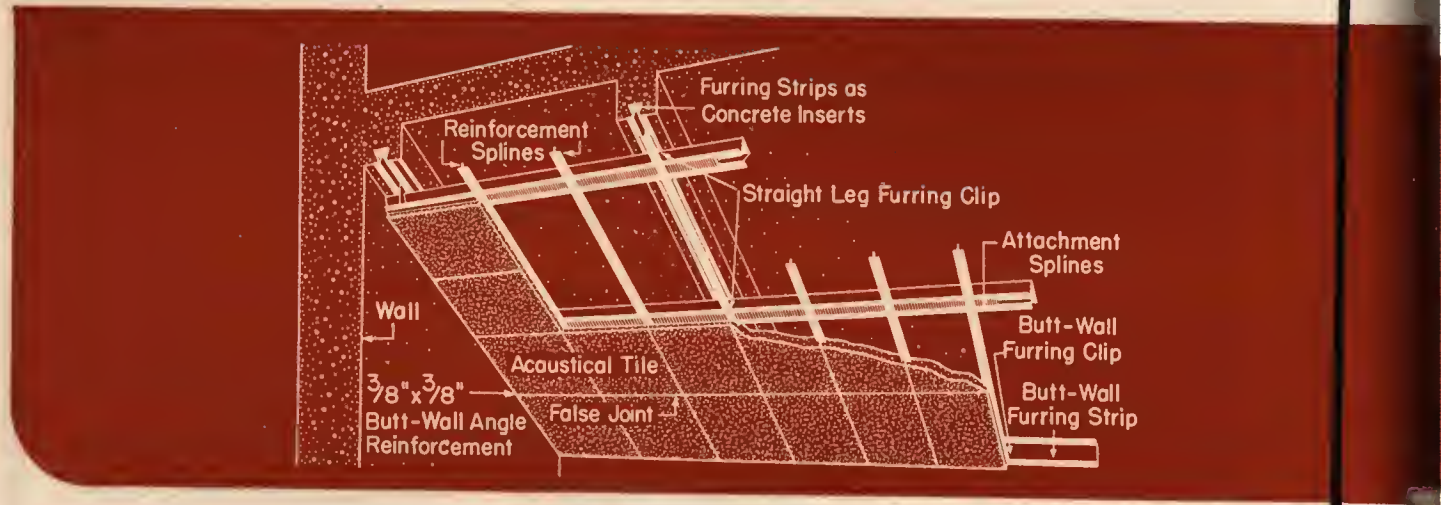
plasterboard—is to be attached to the Jackson Furring Strip with the proper size Jackson Spear Point Nail for the thickness of material used (25/32" Spear Point Nail for ⅜" material; 29/32" for ½" material). Nails are to be spaced not over 6" on centers. At the butt joints of the plasterboards, Jackson Butt Joint Clips with Spear Point Nails inserted are to be used spaced not over 6" on centers.

acoustical tile—is to be cemented to the plasterboard in accordance with the specifications of the manufacturer of the acoustical tile.

concrete inserts

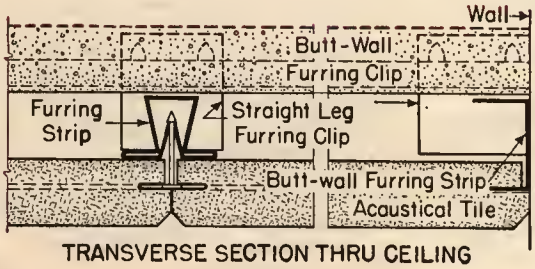


Jackson furring strips used as concrete inserts on flat concrete construction.

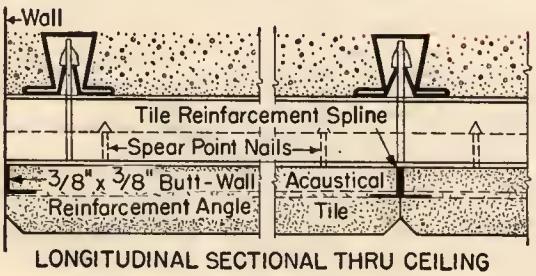


Jackson furring strips used as concrete inserts on ribbed concrete construction.

construction details

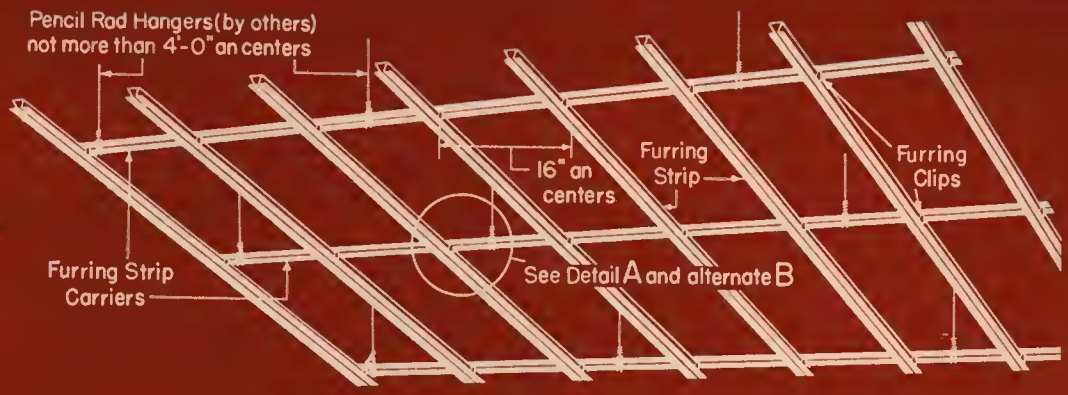


TRANSVERSE SECTION THRU CEILING

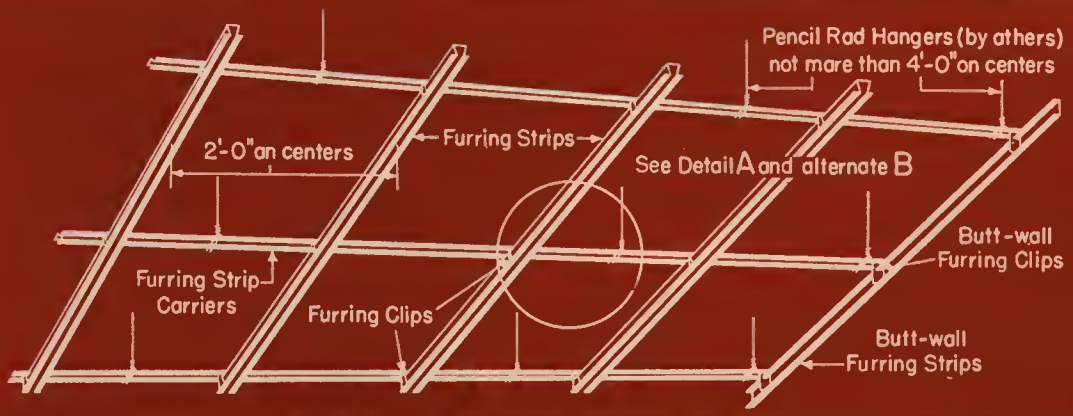


LONGITUDINAL SECTIONAL THRU CEILING

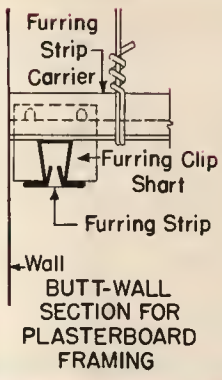
Jackson carrying bars



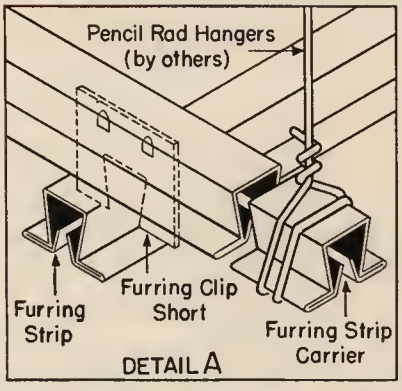
Jackson furring strips used as carrying bars for plasterboard panels.



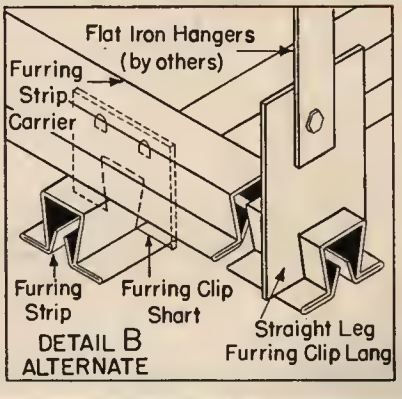
Jackson furring strips used as carrying bars for kerfed acoustical tile.



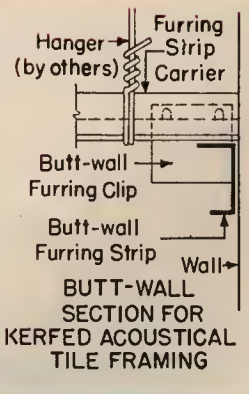
BUTT-WALL SECTION FOR PLASTERBOARD FRAMING



DETAIL A



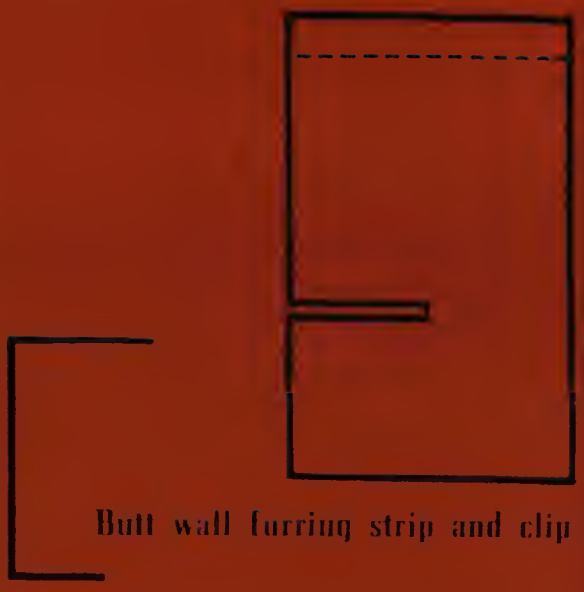
DETAIL B ALTERNATE



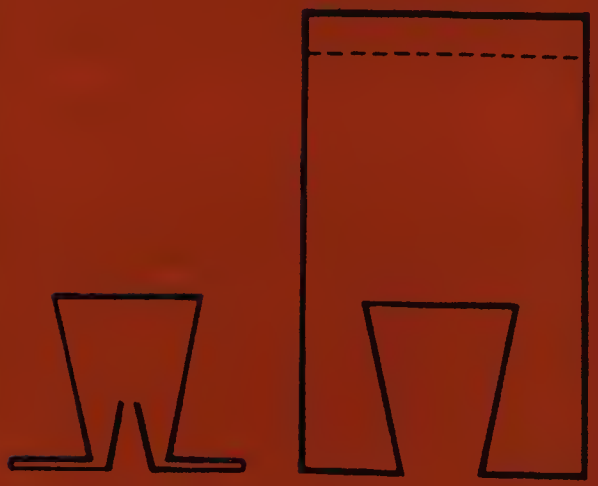
BUTT-WALL SECTION FOR KERFED ACOUSTICAL TILE FRAMING

REPRESENTATIVE ACOUSTICAL TREATMENTS INSTALLED WITH JACKSON SYSTEM

Chevrolet Assembly Plant	Flint, Mich.
Dravo Corporation	Philadelphia, Pa.
Dyers Restaurant	Toledo, Ohio
Eagle Supermarket	Clinton, Iowa
Eastman Kodak Company	Rochester, N.Y.
Ford Motor Company	Dearborn, Mich.
General Electric Company	Erie, Pa.
General Motors Truck-Coach	Pontiac, Mich.
General Motors Chevrolet	Cleveland, Ohio
J. L. Hudson Company	Detroit, Mich.
Halle Bros. Co.	Cleveland, Ohio
Highland Park Schools	Highland, Mich.
Mellon Institute	Pittsburgh, Pa.
Monmouth Manufacturing Co.	Cleveland, Ohio
O'Henry Hotel	Greensboro, N.C.
Pacific Telephone & Telegraph Co.	San Francisco, Calif.
Western Union Telegraph Co.	Cincinnati, Ohio
Wright Aeronautical Corp.	Wood-Ridge, N.J.



Butt wall furring strip and clip



Furring strip and clip

Tile reinforcement spline

Plain and tile attachment spline

Spear point nail

Annular nails and sheet metal screws

Furring strip splicer

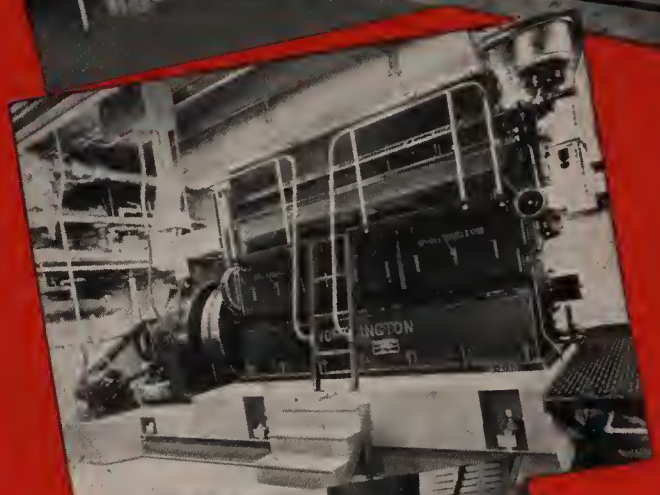
THE *Jackson System*

Printed In U S A

Manufactured by **THE YODER COMPANY**
FABRICATING DIVISION
5500 WALWORTH AVENUE • CLEVELAND 2, OHIO

KORFUND

VIBRATION CONTROL



for all types

of equipment

and applications

Lengthens building and machine life
Improves working and living conditions
Decreases original building and foundation costs
Permits more efficient plant layout
Increases production • Reduces work spoilage

Easy to install and adjust • Economical
Long lived • Trouble-free service

Choice of Steel Spring, Cork or Rubber as isolating medium assures right isolation for the job
Standard units quickly obtainable • Special designs also available

Recommendations backed by 45 years of experience
Representatives in principal cities

See selector chart on page 2 which tells at a glance the recommended Korfund Isolation for any particular job.

A. I. A. Ref. No. 37-H

THE KORFUND COMPANY, INC., Specialists in Vibration Control for over 45 years

6-48 5M
COPYRIGHTED 1948

Korfund isolation selector chart

How To Use This Chart: Isolation recommendations are listed opposite each machine by numbers which correspond with numbers assigned to Korfund products described on pages 3 and 4.

Where more than one product is listed (e. g., Cork Materials—12, 13, 14 and 15), selection is governed by allowable loadings, etc. given in product description.

Isolated concrete foundations are required where machine size and characteristics necessitate a stabilizing mass and/or a rigid support for the machine.

Isolation recommended for highest efficiency offers, in most cases, advantages of easier installation and longer life in addition to maximum vibration isolation. Consequently, the over-all cost is often no higher than for alternate recommendations.

Selections herein are based upon normal installation conditions and are subject to variations in event of unusual job circumstances. In such cases, consult Korfund, without obligation. It is recommended that make, model number, speed and location of equipment in building be given when ordering isolation.

ADDITIONAL DATA AND PRICES ON ALL PRODUCTS FURNISHED UPON REQUEST

MACHINE	ISOLATION RECOMMENDED FOR HIGHEST EFFICIENCY		ALTERNATE RECOMMENDATION Sotisfactory for less critical jobs	
	No Concrete Foundation Required	Concrete Foundation Required	No Concrete Foundation Required	Concrete Foundation Required
Air Conditioners, Unit	6, 7, 8, 18	—	16	—
Brakes	1	—	18	—
Broaches	1	4	—	12, 13, 14, 15
Business Machines	21	—	—	—
Centrifuges	1	—	—	—
Clickers	1	—	19	—
Coal Pulverizers (large)	—	12, 13, 14, 15	—	—
Compressors:				
1. Fractional H.P.	5, 7, 9, 10, 20	—	—	—
2. Vertical & Horizontol under 400 RPM	—	†	—	12, 13, 14, 15
3. Vertical 400-600 RPM (over 15 H.P.)	—	1, 3	—	—
4. Vertical 400-600 RPM (under 15 H.P.)	1	—	7, 16, 17, 19	—
5. Vertical over 600 RPM & V, W, or radial over 400 RPM	1	—	7, 16, 17, 19	—
6. Centrifugal	—	4	—	11, 13, 14, 15
Dinkers	1	—	18, 19	—
Dry Cleaning Machines	1	—	—	12, 13, 14, 15
Dynomometers	—	1, 3, 4	—	12, 13, 14, 15
Engine Generators Low-Speed Diesel & Gas				
1. Single Cylinder	—	3	—	12, 13, 14, 15
2. Two, three, four & five cylinder	—	3, 4	—	—
3. Six cylinder and above	—	4	—	12, 13, 14, 15
Engine Generators & Power Units (High-Speed Diesel & Gasoline)	1, 2	—	16, 19	12, 13, 14, 15
Evaporative Condensers	6, 7, 8, 18	—	16	—
Fans:				
1. Utility Unit Blowers	7, 9, 20	—	17	—
2. Heating, Ventilating & Air Conditioning	22	—	—	11, 12, 13, 14
3. Industriol Forced & Induced Draft	—	1, 4	—	12, 13, 14, 15
4. Industriol Exhousters	1	—	16, 22	12, 13, 14, 15
Flame Cutters	—	3, 4	—	—
Foundry Jolt-Moulding Machines	—	1, 4	—	12, 13, 14, 15
Furnaces	1, 4	—	—	—
Gear Cutters	1	—	18	—
Grinders:				
1. Centerless, cylindrical, tool and small surface	1	—	—	—
2. Roll	—	4	—	—
3. Surface (large)	—	1	—	—
Hammers	—	1, 4	—	—
Hammermills	1	—	18, 19	—
Hogs and Crushers, Meat	1	—	18, 19	—
Instrument Panels	1, 5, 7, 8, 10	—	18	—
Jig Borers	1	—	—	—
Loundry Extractors	—	1, 12, 13, 14	—	—
Lathes (large)	—	1, 4	—	14
Milling Machines	1	—	11, 19	—
Motor Generator Sets	1	—	7, 9, 19, 20	—
Paper Cutters	1	—	18, 19	—
Pebble Mills	1, 2	—	—	18
Pipe Supports	1, 6, 8	—	—	—
Presses, Hydroulic	4	4	—	12, 13, 15
Presses, Newspoper				
1. New Installations	—	12, 13, 14, 15	††	—
2. Existing installations—write Korfund	††	—	—	—
Presses, Printing (except newspapers)	11	—	—	—
Presses, Punch	1	4	18, 19	—
Pumps:				
1. Centrifugol	1	—	7, 9, 16, 19, 20	12, 13, 14, 15
2. Reciprocating Vertical	—	12, 13, 14, 15	16, 18, 19	—
3. Reciprocating Horizontol	—	†	—	12, 13, 14, 15
Shopers	11, 18, 19	—	—	—
Sheors	1	1, 4	18	—
Turbines	—	12, 13, 14, 15	—	—

††Press Column Isolation

†write Korfund

TYPICAL SPECIFICATIONS

1. Mochines Mounted Directly on Isolation Moterial:

"To prevent vibration and shock transmission, the (machine) shall be resiliently mounted directly on Korfund (type of isolator). Isolator sizes to be determined by manufacturer and units to be installed in accordance with manufacturer's instructions."

2. Mochine ond Driving Unit Mounted on Isolated Steel Bose:

"To prevent vibration and shock transmission, the (machine and driving unit) shall be mounted on an integral steel base which shall be resiliently mounted on Korfund (type of isolator). Isolator sizes to be determined by manufacturer and units to be installed in accordance with the manufacturer's instructions."

3. Machines Mounted on Isolated Concrete Foundation:

"To prevent vibration and shock transmission, the (machine) shall be mounted on a concrete foundation which is supported on Korfund (type of isolation). Isolation sizes to be determined by manufacturer and material to be installed in occordance with manufacturer's instructions."

4. Fons and Motors:

"Fans and motors shall be mounted on separate bases consisting of structural angles forming rails held in rigid alignment by adjustable chocks. Construction of bases must be such as to permit job-site changes in motor position, drive-center distance, fan rotation, and fan and motor mounting bolt locations if necessary. The isolating medium in the bases shall be cork, rubber-in-shear, or springs (specify one). Bases shall be the Korfund Adjustable Duplex Twin Rail Type."

NOTE: Brief product descriptions from pages 3 and 4 can be incorporated if more detailed specifications are desired.

SPRING TYPE

Karfund steel-spring mauntings provide the mast efficient methad af isalating vibration, approaching 100% in effectiveness. Adaptable to practically any type af installatian since their elastic qualities can be predetermined and accurately cantrolled. Adjustable ta meet unforeseen conditions without foundatian changes. Individual maunting load capacities up to 50,000#. Furnished in several designs ta accammadate entire range of disturbing frequencies. Karfund spring isalatars usually outlast the machine because all parts, including springs, are designed with a high safety factor.

1. TYPE LK VIBRO ISOLATOR—Universal Type.

Laad Range: 30# to 17,000#. All-directianal isalatar far applicatian under machines causing vibration ar under sensitive units requiring pratection from external vibratian. Installed directly under machine, structural base, ar light cancrete foundatian. Cast semi-steel constructian. Fully adjustable with vertical and harizantal thrust contral and built-in levelling device.

2. TYPE SK VIBRO ISOLATOR

For heavy-duty marine and stationary installations demanding extreme horizontal thrust capacity. Similar to Type LK (left) except of all-welded steel construction.

3. TYPE UP VIBRO ISOLATOR

Laad Range: 50# ta 10,000#. All-steel unit with extra-lang springs for isalating very law frequency vibratian. Used with structural base or concrete foundatian an which machine is mounted. Built-in levelling device. Separate snubber contral when required.

4. TYPE UN VIBRO ISOLATOR. (Alsa Type UV)

Laad Range: 3,000# ta 50,000#. Heavy-duty unit used ta suppart heavy machines and concrete inertia mass if required. Built-in levelling device. Separate snubber control when required.

5. TYPE AK VIBRO ISOLATOR

Load Range: 30# to 200#. Law-cast, efficient spring isalatar for light-weight machinery. Assembled unit fastens directly to machine legs or base.

6. VIBRO HANGER

Laad Range: 50# to 650#. For suspended installations. Alsa used as pipe hanger when vibratian transmission through pipes is a prablem.

RUBBER MOUNTINGS

Although not so durable as steel springs, rubber can be applied effectively ta prevent vibratian and noise transmissian in many types of installations. Ecanomical, efficient for smaller machines of medium and high frequency. Not recammended far impact machinery or for use in presence af sunlight, acids, alkalies, or temperatures over 130° F. Available an special arder in synthetic rubber for applications exposed continuously to oil.

7. TYPE RMG RUBBER-IN-SHEAR

Laad Range: 30# ta 100# per inch. Length 18" maximum. Bonded rubber-in-shear unit for small and medium-size machinery. Hardness af rubber varied ta suit operating canditions. Loading determines length of mounting.

8. TYPE RH RUBBER-IN-SHEAR HANGER

Laad Range: 10# to 50# per inch length. 6" maximum standard. Rubber-in-shear maunting designed for use in suspended installations. Safety feature eliminates possibility of equipment falling in event of damage ta rubber. Also used as resilient pipe hanger.

9. RUBBER COMPRESSION AND SHEAR MOUNTINGS—

TYPE RS

Laad Range: Compressian—20# to 125#; Shear—to 40#. Combinatian of steel spring and rubber increases load capacity and stability aver conventional rubber mountings af equal size. Small size, law cost permit incorparation in design of original equipment.

10. RUBBER COMPRESSION AND SHEAR MOUNTINGS—

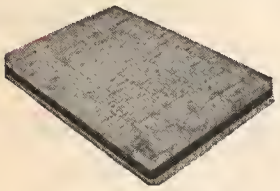
TYPE R

Laad Range: Compressian—10# to 700#; Shear—2# to 375#. Conventional type rubber mounting. Size and rubber durometer varied to suit loading.

CORK

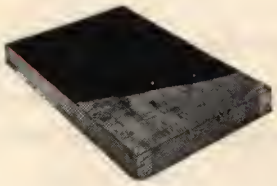
Economical, easy to install. Excellent in preventing noise transmission and effective as isolator for medium- and high-frequency vibration. Cork is not adversely affected by oil, water, sunlight, heat or cold and, when properly utilized, gives years of effective service.

11. STEEL-BOUND CORK



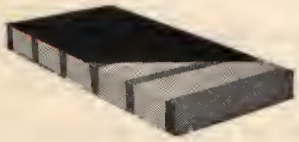
Load Range: 1000# to 3000# per sq. ft. Used directly under machines, skids, structural base or concrete block. Natural cork strips bound in steel frame. Thickness: 1", 1½", 2", 3", or 4". Size up to 30" x 60", with minimum width of 5".

12. BASE ISOLATOR



Load Range: 1000# to 3000# per sq. ft. Plates applied directly to base of foundation pit and joints sealed, presenting unbroken, watertight surface upon which concrete may be poured. Natural cork mat with top and bottom surfaces bound with asphalt and asphalt felt. Standard plates 24" x 48" or furnished cut to size. Can be cut with hand saw. Thicknesses: 1", 1½", 2", 3", and 4".

13. BALANCED ISOLATOR

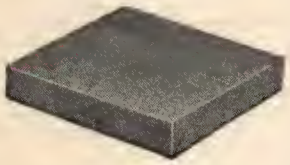


Load Range: 400# to 1000# per sq. ft. Applied in same manner as Base Isolator (No. 12). Also applied as side isolation for concrete foundations. Cork strips interspaced with load-balancing, sound-insulating filler; amount of natural cork varied to suit loading. Can be cut with hand saw. Standard plate 36" x 48" or cut to size. Thicknesses: 1½", 2", 3", 4".

14. PANEL SEISMO DAMPER

Load Range: 250# per sq. ft. to 1400# per sq. ft. Recommended for jobs involving very unequal or light load distribution. Natural cork pads bonded to underside of heavy-gauge sheet-metal panel on which concrete is poured. Area and placement of cork determined for optimum loading in accordance with weight distribution. Thicknesses: 2", 3", 4".

15. ARMSTRONG'S VIBRACORK



Load Range: Standard Density—1500# to 4000# per sq. ft.; Heavy Density—5700# to 8500# per sq. ft. Granules of cork compressed and baked under pressure; exact density control maintained. Standard sheets 12" x 36" or cut to size. Can be cut with hand saw. Thicknesses: Standard Density—2", 3"; Heavy Density—1", 2", 3".

16. VIBRO BAR

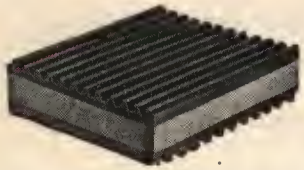
Load Range: 50# to 650# per 6" length. For medium- and high-speed machines. Channel-type rail, employing natural cork as isolating medium. Individual units, continuous rails, or integral bases.

17. VIBRO BAR SPECIAL

Load Range: 100# to 400#. Similar to Vibro Bar (above) but lighter construction. One size only—3" x 6". Inexpensive, efficient.

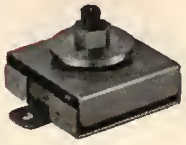
CORK AND RUBBER

18. ELASTO RIB



Load Range: 750# to 5000# per sq. ft. Effective for absorbing noise, vertical and horizontal vibration. Installed directly under machines, skids, structural bases or concrete foundations. Fine-granule cork bonded between oil-resistant, ribbed-rubber. Grooved rubber provides increased deflection and forms a non-skid surface. Standard plate 24" x 36" or cut to size. 1" thick. Can be cut with knife or circular saw.

19. ELASTO RIB DAMPER—TYPE ER



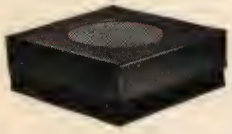
Load Range: 160# to 1260#. Elasto Rib in metal housing which permits bolting of machine to floor.

Can be provided with isolated through-bolts to resist upward thrust.

20. ELASTO RIB DAMPER—TYPE AER

Load Range: Up to 150#. Similar to Type ER (above) except for lighter load.

21. VIBRO PLATE



Load Range: 25# to 400#. For elimination of vibration and noise transmission from business machines and small units not requiring bolting down. Placed directly under legs of machine; no tools required for installation. Cork and oil-resistant rubber unit in metal housing. Non-skid pad prevents "walking."

22. DUPLEX TWIN RAIL FAN AND MOTOR BASE

Separate base for fan and motor. Pairs of structural angles form rails which are held in rigid alignment by adjustable chocks. Cork, Rubber-in-Shear or Steel Springs furnished as the isolating medium. Unique patented construction permits job-site changes in motor position, drive-center distance, fan rotation and bolt-hole spacing. Light weight, strong, and extremely easy to install.

THE KORFUND COMPANY, INC.

48-80 32nd Place Long Island City 1, N. Y. Phones IRonsides 6-7580 -1 -2

lath, plaster and wallboard

section 12

metal lath, trim and accessories **a**

plaster bases, plaster, wallboards **b**

ALABAMA

Metal Lath Company

INCORPORATED

"Four-A Quality"

ALABAMA METAL LATH COMPANY, Inc., Box 992, Birmingham, Ala.

Alabama Metal Lath and Accessories

—backbone of Beautiful, Durable, Fire-Safe plastered walls and ceilings

Products of Alabama Metal Lath Company make beautiful, durable, fire-safe plastered walls and ceilings. Plastering over Alabama Metal Lath strongly resists shock, impact, vibration, stress and tension, to which walls and ceilings are subjected.

The superior strength and resilience of Alabama Metal Lath have won approval of Architects, Builders and Owners everywhere. Metal lath construction gives speed, savings and safety.

The sound insulating qualities of plaster construction using Alabama Metal Lath provide reasonable degrees of quietness. For example, 2-inch solid and 4½-inch hollow metal lath partitions have sound insulation values of 35 to 42 decibels.

The fire resisting features of Alabama Metal Lath-and-plaster provide excellent barriers to fire. In countless cases, Alabama metal lath-and-plaster construction has confined fires to points of origin.

The economy of Alabama metal lath construction includes savings in space, weight and materials, permitting lower insurance rates, minimum upkeep, and resistance to the ravages of vermin, termites and rodents. This means higher degrees of sanitation and all-around superiority over other methods of construction.

Alabama Metal Lath and Accessories are made by craftsmen using efficient machinery, much of it custom-made. Planned, straight-lined production methods are used. Production checks and final inspections are in effect at all times. Only highest quality open hearth steel is used and Alabama Metal Lath is manufactured in accordance with U. S. Department of Commerce Simplified Practice Recommendation R3-44.

Alabama Metal Lath Products are packaged in crates or bundles to require minimum storage space and to protect contents.

Alabama Metal Lath Products are sold only through dealers. We will be glad to supply you the name of the dealer nearest you who handles "Four-A" products.

Plastering can be no better than the lath beneath it. Quality materials plus quality methods and workmanship are your assurance of reliability in Alabama Metal Lath and Accessories.

CHECK THESE ALABAMA METAL LATH ADVANTAGES

- √ Easy to Handle
- √ Fast to Erect
- √ Readily Adapted
- √ Rapid Coverage
- √ Use Less Plaster
- √ Help Prevent Cracks
- √ Insulation Against Noise
- √ Fire Resistant
- √ Long-Run Economy

ALABAMA SMALL MESH DIAMOND LATH

General Purpose, Utility Metal Lath

For walls, partitions, ceilings . . . the high reinforcing strength of Alabama Small Mesh Diamond Lath makes it the ideal base for beautiful, durable, fire-safe plastering.

6,400 OPENINGS PER SQ. YARD

Alabama Small Mesh Diamond Lath is cut and expanded uniformly into small openings (approximately 6,400 per square yard). This great number of openings increases proportionately the area of steel. Rigidity thus obtained insures a minimum of sagging as the plaster is applied. The small openings of Alabama Small Mesh Diamond Lath prevents excessive droppings of plaster on the backside, thus avoiding undue waste.

SELVEDGE EDGES, EASY TO HANDLE

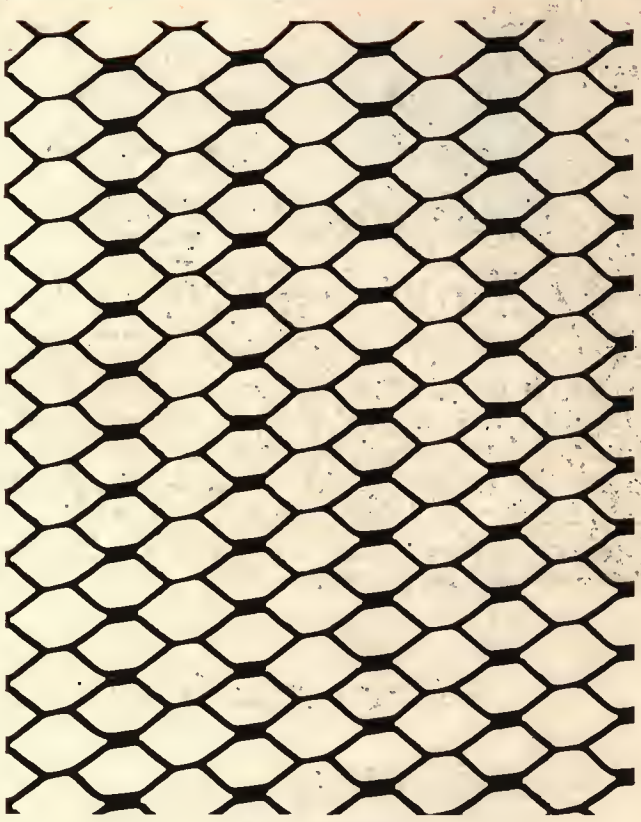
Each sheet has square ends and smooth edges. Because there are no jagged edges, Alabama Small Mesh Diamond Lath is easy to handle and fast to put up.

RAPID COVERAGE, LESS PLASTER

The small meshes require less plaster when applying the scratch coat because excessive droppings are eliminated. The even, uniform surface enables the plasterer to cover greater area in less time than larger meshes require.

ADAPTABLE FOR MANY USES

The twist of the strands gives the sheets ample rigidity to reinforce and support plastering. However, with proper forming, Alabama Small Mesh Diamond Lath can readily be bent for most types of ornamental work. This lath is also ideal backing for fireproofing of steel beams, girders and columns.



ACTUAL SIZE

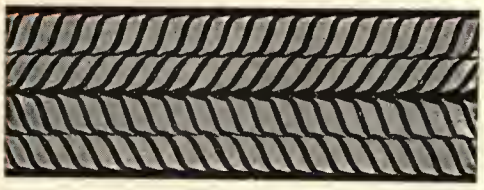
Alabama Small Mesh Diamond Lath Available In Self-furring Form

Catalog Information

SHEETS	BUNDLES
27x96 in. 2 sq. yds.	10 sheets 20 sq. yds.

WEIGHT per Square Yard	
Painted Copper Alloy Steel	2.5 lbs.
Painted Copper Alloy Steel	3.4 lbs.
Galvanized Steel	3.4 lbs.

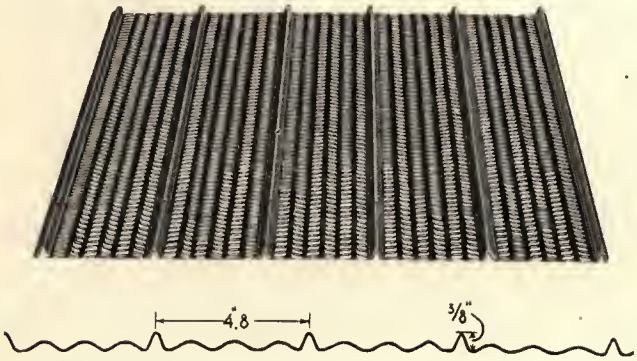
METAL LATH



1/8" FLAT RIB LATH

Made in a double herringbone pattern, this lath has closely spaced ribs 1/8" deep running lengthwise. It has the smallest mesh of any flat rib lath. In erecting, the sheets are locked together by nesting the side ribs. The small mesh prevents dropping and waste of plaster. The rigidity permits a wider spacing of supports and saves labor. This is a lath of extra strength that is truly a plaster saver.

Painted copper alloy steel, 2.75 or 3.4 lbs. per sq. yd.
Sheets are 27x96 inches (2 sq. yds.).
Packed 10 sheets to the bundle (20 sq. yds.).



3/8" RIB LATH

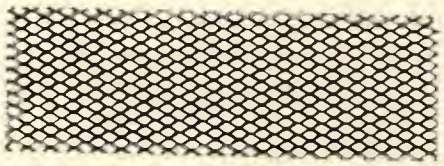
This lath has heavy longitudinal ribs 3/8" deep spaced 4.8" apart. These ribs provide exceptional stiffness to the sheet. Ends and sides of the sheets are straight and parallel. Self-furring lath with sufficient strength and rigidity to permit wide spacing of supporting cross channels, it can be installed on ceilings and overhead supports by one man, resulting in labor and material savings. Ideal for furred or suspended ceilings and reinforcing for floor slabs in standard bar joist floor and roof construction. Takes concrete readily.

Painted copper alloy steel, 3.4 or 4 lbs. per sq. yd.
Sheets are 24x96 inches.
Packed 9 sheets to the bundle (16 sq. yds.).

3/4" RIB LATH

Heavy, strong lath with 3/4" deep longitudinal ribs spaced 6" apart. Has stiffening members between ribs. Used extensively with steel bar joist construction, this lath makes an ideal reinforcement for concrete floors and roofs. Also serves as form for wet concrete. Great stiffness and rigidity provided by the heavy ribs permit construction of solid plaster partitions without use of studs.

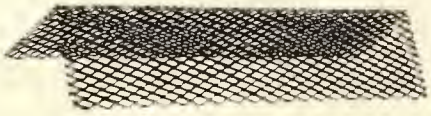
Painted copper alloy steel, .60 or .75 lbs. per sq. ft.
Sheets are 2 feet wide, lengths of 7, 8, 9, 10 and 12 feet.
Packing is done specially for each order.



STRIPLATH

This is regular Alabama Small Mesh Diamond Lath formed in strips 3" wide. It is used on jobs where metal lath is not used throughout. It should *always* be used around window and door frames. Also serves to cover sections of walls and ceilings where joints in construction tend to make plaster cracks occur.

Painted copper alloy steel, strips are 3" wide x 8'-0" long.
Packed 75 pieces to a bundle, 600 lineal feet.
Weight per 1000 lineal feet, 85 lbs.



CORNALATH

This is an angle lath with smooth Selvedge edges formed like regular Small Mesh Diamond Lath. It, like Striplath, is useful on jobs where metal lath is not used throughout. Cornalath should always be used in corners where walls meet walls and walls meet ceiling. This reinforcing of interior corners prevents cracks where they are most likely to occur.

Painted copper alloy steel, pieces are 8' long and 2"x2" or 3"x3".
Packed 75 pieces to a bundle, 600 lineal feet.
Weight per 1000 lineal feet of 3"x3", 157 lbs.
Weight per 1000 lineal feet of 2"x2", 120 lbs.

CORNER BEADS

ALABAMA Metal Lath Company INCORPORATED "Four-A Quality"

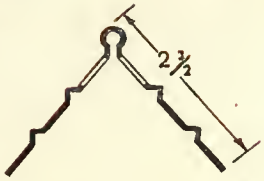
A-4 STANDARD ARCH

Serves two purposes: as arch corner bead or straight corner bead. In curved work, it bends easily and quickly without kinks or wrinkles. Protects exposed corners. Provides ample key for the plaster. Ideal for straight work, too. May be used with or without clips.

26-gauge galvanized steel: 8-, 9-, 10- and 12-foot lengths. Crated wt., 185 lbs. per 1000 lineal feet.

A-12 WIDE FLANGE SMALL NOSE

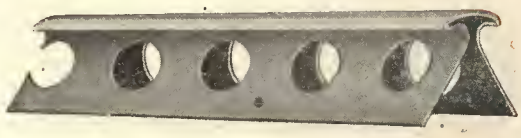
This bead fills the need where a wider flange and greater rigidity are required. It is particularly adaptable for use on masonry walls, beams and columns. Provides a straight bead to which the plasterer works rapidly and accurately.



26-gauge galvanized steel: 8-, 9-, 10- and 12-foot lengths. Crated wt., 400 lbs. per 1000 lineal feet.

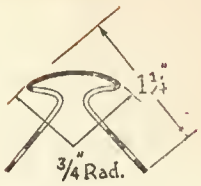
Crating Table For Corner Beads

Length	Pieces Per Crate	Lineal Feet
8 feet	70	560
9 feet	60	540
10 feet	50	500
12 feet	50	600

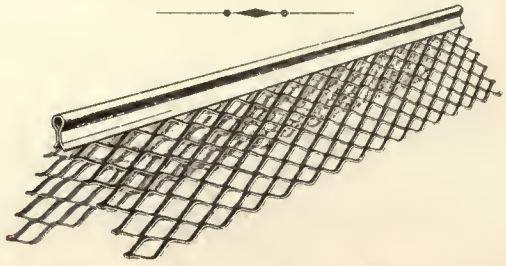


A-5 3/4" RADIUS BULL NOSE

The bull nose is formed on a 3/4" radius. This bead is used for rounded corners in halls and corridors where traffic is unusually heavy; also in deep window embrasures. Especially recommended for schools, hospitals, office buildings and similar public buildings.



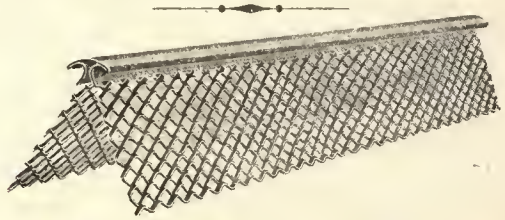
26-gauge galvanized steel: 7-, 8-, 9-, 10- and 12-foot lengths. Crated wt., 290 lbs. per 1000 lineal feet.



X-1 EXPANDED 2-1/2" SMALL NOSE

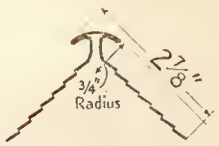
Expanded Diamond Mesh permits keying the plaster right up to the nose of the bead. The mesh insures perfect bond and provides effective reinforcement where most needed. Especially recommended for masonry corners subject to abuse.

26-gauge galvanized steel 8-, 9-, 10- and 12-foot lengths. Crated wt., 230 lbs. per 1000 lineal feet.



X-10 EXPANDED 3/4" RADIUS BULL NOSE

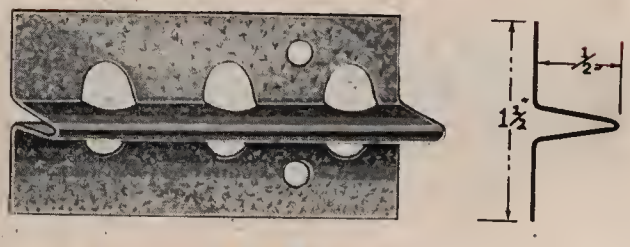
Designed for heavy duty reinforcement of broad, rounded corners of hospital corridors and public buildings. The expanded Diamond Mesh wings offer the same advantages as X-1 Expanded Small Nose Corner Bead (above).



26-gauge galvanized steel: 7-, 8-, 9-, 10-, and 12-foot lengths. Crated wt., 365 lbs. per 1000 lineal feet.

ALABAMA
Metal Lath Company
INCORPORATED
"Four-A Quality"

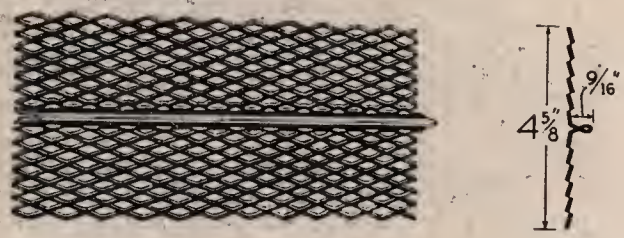
LATHING ACCESSORIES



A-6 PLAIN BASE SCREED

Many plastered walls come down to bases or wainscots of a different material, such as cement and composition. The base screed serves to separate the plaster from the other material while keying to both. This Base Screed also provides a straight, neat joint. This is the standard Base Screed, designed to be flush with the finished surface.

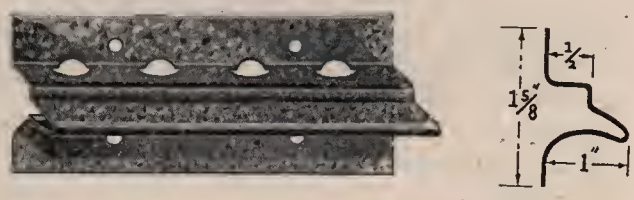
26-gauge galvanized steel; 10-foot lengths.
1000 lineal feet per crate, weighing 153 lbs.



X-3 EXPANDED BASE SCREED

This serves the same purpose as A-6 (above), but differs in having flanges of expanded Diamond Mesh. The dividing strip is a firm and rigid 9/16" ground, designed to be flush with the finished wall. The mesh provides a perfect bonding of the plaster and cement on either side of the division.

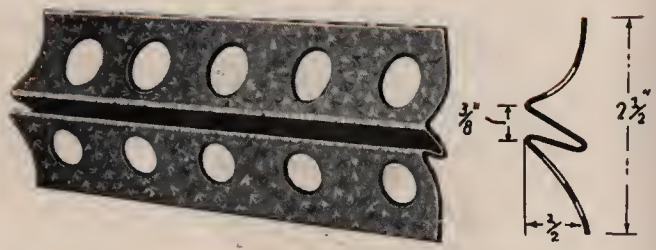
26-gauge galvanized steel; 10-foot lengths.
500 lineal feet per crate, weighing 230 lbs. per 1000 lineal feet.



A-7 CURVED POINT BASE SCREED

Sometimes the base or wainscot is of a material thicker than the plaster wall above, as in the case of tile, terrazzo, cement and composition. This curved point screed forms a rigid, straight cap for the lower part and a ground for the plaster above.

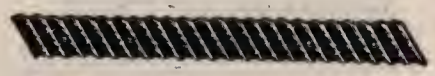
26-gauge galvanized steel; 10-foot lengths.
1000 lineal feet per crate, weighing 195 lbs.



A-8 CONCEALED PICTURE MOULD

This is put up before plastering. Being firmly attached to the supports, this concealed picture mould can carry considerable weight. After the finish plaster coat is applied, it appears as a narrow, even line, neat and inconspicuous. As it is recessed beneath the surface of the wall, this picture mould is not a dust catcher like projecting picture mould; thus is more sanitary.

26-gauge galvanized steel; 10-foot lengths.
1000 lineal feet per crate, weighing 260 lbs.



GALVANIZED WALL TIES

These corrugated wall ties are for bonding brick or stone veneers to wood framework. Two holes in one end are for nailing.

Galvanized steel; Approx. ¾"x7".
Packed 1000 to a carton, weighing 30 lbs. (approx.).

TIE WIRE—HANGER WIRE

8-GAUGE GALVANIZED HANGER WIRE
100 lb. coils

16-GAUGE GALVANIZED TIE WIRE
100 lb. coils

18-GAUGE GALVANIZED TIE WIRE
100 lb. coils
25 lb. hanks

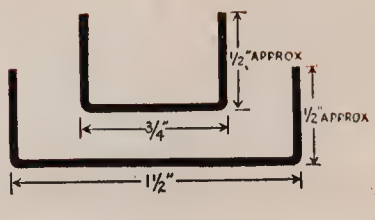
A-9 CORNER BEAD CLIPS

Attachments for Corner Beads with short flanges. These clips add bracing strength to beads used to straighten brick and tile corners. In wood construction, they take the place of wide flanges.

Packed 1000 to a box, weighing 30 lbs.

ALABAMA
Metal Lath Company
INCORPORATED
"Four-A Quality"

COLD ROLLED CHANNELS



Alabama Cold Rolled channels are accurately fabricated from 16-gauge open hearth steel, painted after fabrication. They have great tensile strength and rigidity, but are light in weight. They are formed straight and true with perfect right angles and approx. 1/2" legs. Being cold rolled, they can be formed and spliced readily.

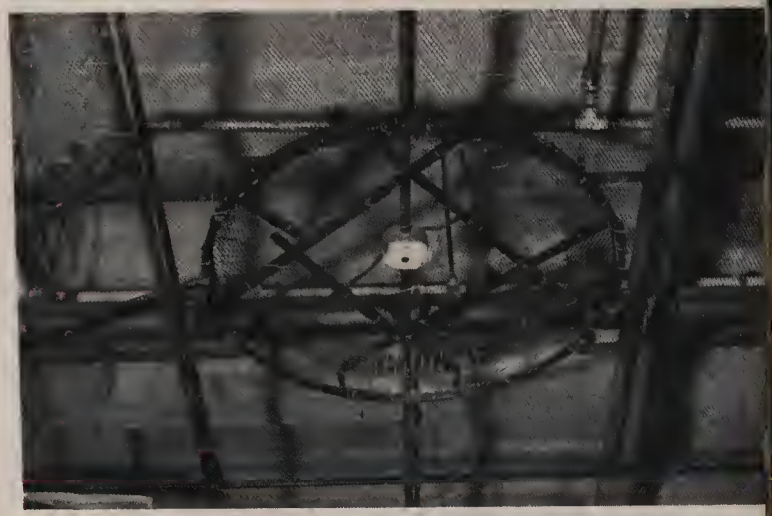
These channels are widely used in most types of fire-safe construction as supporting members for metal lath in solid plaster partitions, for furring and for hollow stud partitions and suspended ceilings.

16- AND 20-FOOT LENGTHS

Furnished Painted Only

Size	Pieces Per Bundle	Approx. Wt. Per 1000 Lineal Ft.
3/4"	20	300 lbs.
1-1/2"	10	475 lbs.

Your Assurance of Dependable Quality



Your Assurance of Dependable Metal Lath and Accessories

ALABAMA
Metal Lath Company
INCORPORATED
"Four-A Quality"

P. O. BOX 992, BIRMINGHAM, ALABAMA

SOLD THROUGH DEALERS ONLY

MILCOR MANUAL

FIREPROOF BUILDING PRODUCTS

METAL LATH AND ACCESSORIES

THE COMPANY

The Inland Steel Products Company is the foremost national manufacturer of "Firesafe" sheet metal products, largely consumed by the building industry. Constant improvement in design, materials, workmanship, and methods of production has marked the company's progress, until today Milcor Products are accepted nationally as standards of quality.

DIVERSIFIED LINE OF PRODUCTS

In addition to the line of Metal Lath, Plastering Accessories and Metal Trim, including Casings, Stools, Metal Bases, etc., described in this catalog, the Inland Steel Products Company is among the largest manufacturers making a complete line of metal building products.

MANUFACTURING AND DISTRIBUTING FACILITIES

The Inland Steel Products Company's plants consist of over a million (1,000,000) square feet of floor space and its properties cover forty (40) acres of land.

In addition to its main plants in Milwaukee 1, Wisconsin, and Cleveland 14, Ohio, equipped with modern machines, there are branches in Chicago 9, Illinois; Kansas City 8, Missouri; Detroit 2, Michigan; Buffalo 11, New York; Cincinnati 25, Ohio; Rochester 9, New York; Los Angeles 23, Calif.; Baltimore 24, Maryland; and St. Louis 10, Mo. Sales offices are maintained in other principal centers.

CATALOGS AVAILABLE

(Size 8½x11 inches to fit filing cabinet.)

No. 101 Milcor Metal Trim

No. 200 The Milcor Manual (Metal Lath and Allied Products)

No. 302 Milcor Steel Roofing and Roofing Accessories

No. 402 Milcor Furnace Pipe and Fittings.

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MILCOR PRODUCTS—SPECIAL FEATURES

EXPANSION WING FEATURE

One of the outstanding features of Milcor Lathing Accessories, is the expanded metal lath wing which forms an integral part of the corner bead, base screed, metal casing, and other products. The wings of various widths are formed of ⅜-inch diamond mesh expanded metal lath.

The advantages over the older types of plastering accessories are apparent:

(1) The network of the expanded metal wings assures keying of the plaster close up to the base of the exposed metal member.

(2) There is a definite economy in labor due to the simplicity of erection—these products can be wired, stapled, nailed or spotted, as best adapted to the particular type of wall construction, without the use of clips.

Painting—All black metal lath is painted after cutting and expansion with Special Elastic Asphaltum Paint.

Galvanizing—All galvanized sheets are tight coated with new, pure zinc spelter before cutting and expansion.

Sheet Steel—Products so specified are cut from the highest grade of carefully inspected prime open-hearth sheet steel, either painted or galvanized as noted.

Copper Alloy Steel—The peculiar ability of copper alloy steel to resist corrosion is well known. Milcor "Copper Alloy" is of standard quality, carefully controlled for uniformity in production.

Products are furnished in Copper Alloy Steel painted or galvanized steel as noted.

LABELS

Every bundle of Milcor Lath is conspicuously labeled with a distinctive metal tag vouching clearly for weight and particular metal used. Thus verification of specification requirements is easily insured.

MILWAUKEE 1, WISCONSIN

CLEVELAND 14, OHIO · CHICAGO 9, ILL. · BALTIMORE 24, MD. · KANSAS CITY 8, MO. · LOS ANGELES 23, CALIF. · ROCHESTER 9, N. Y.
DETROIT 2, MICH. · BUFFALO 11, N. Y. · CINCINNATI 25, OHIO · ST. LOUIS 10, MO.

Send Inquiries to INLAND STEEL PRODUCTS COMPANY (Formerly Milcor Steel Co.)
P. O. Box 393, Milwaukee 1, Wis.

MILCOR SPECIALMESH

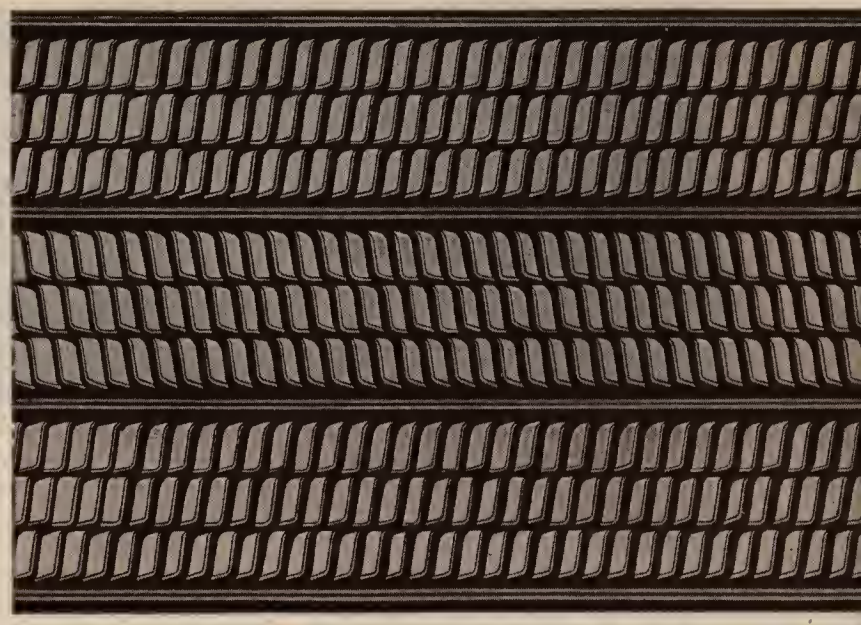
Milcor Specialmesh is a rib lath specially adapted for interior walls and ceilings. The meshes are so formed that in plastering the slightest pressure of the trowel completely imbeds the lath, and due to the small mesh, waste of plaster is eliminated. The longitudinal stiffening ribs are ⅜ inch wide, spaced 1⅝ inches on center and are connected at ¼-inch intervals by strands. These strands, in turn, are strongly reinforced at their junctures by stiffening members (two between each pair of ribs). All sheets are squared on both ends.

SHEET SIZE

24x96 in., packed 9 sheets (16 sq. yds.) per bundle.
27x96 in., packed 10 sheets (20 sq. yds.) per bundle.

MATERIALS AND WEIGHTS (lbs. per sq. yd.)

COPPER ALLOY STEEL, PAINTED—2.75, 3.40.



MILCOR SPECIALMESH METAL LATH

STAY-RIB NO. 1

No. 1 Stay-Rib Lath is ideally adapted for interior plaster.

It is designated for maximum rigidity and, due to its added metal surface, unusual economy of material—an adequate key, however, is assured. The longitudinal stiffening ribs are ½ inch wide, spaced 1¾ inches on center interconnected at ¼-inch intervals by strands. These, in turn, are strongly reinforced at their centers by a stiffening member.

Fewer supporting runner channels and less labor are required because the spacing can be made much wider without impairing safety.

SHEET SIZE

24x96 in., packed 9 sheets (16 sq. yds.) per bundle.

MATERIALS AND WEIGHTS (lbs. per sq. yd.)

COPPER ALLOY STEEL, PAINTED—2.75, 3.40.

STAY-RIB METAL LATH NO.1

STAY-RIB NO. 2

No. 2 Stay-Rib has ⅜-inch heavy longitudinal ribs spaced 4.8 inches on center with five stiffening members between ribs forming adequate reinforcement for the connecting strands spaced at ¼-inch intervals.

It is ideal for all purposes where a self-furring lath is required for wide spans on ceilings and for floor reinforcing over steel joists.

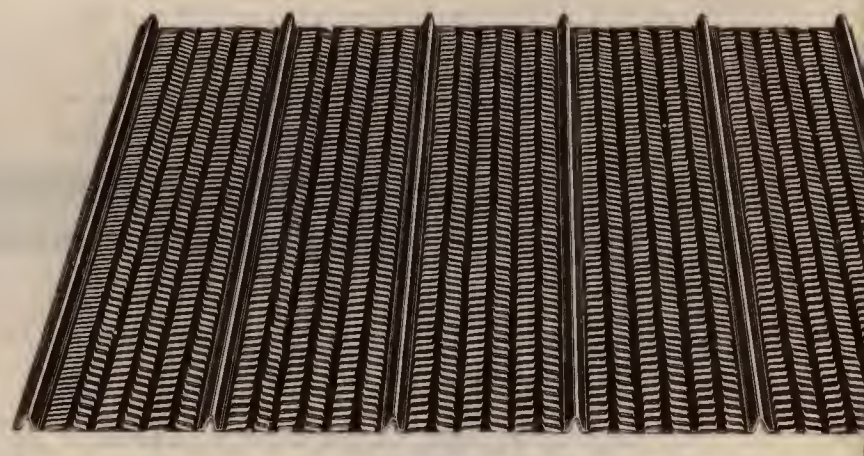
Due to the strength and rigidity of the ribs, this lath effects very definite economies in both labor and material on furred or suspended ceilings where wide spacing of supporting cross channels is possible.

SHEET SIZE

24x96 in., packed 9 sheets (16 sq. yds.) per bundle.

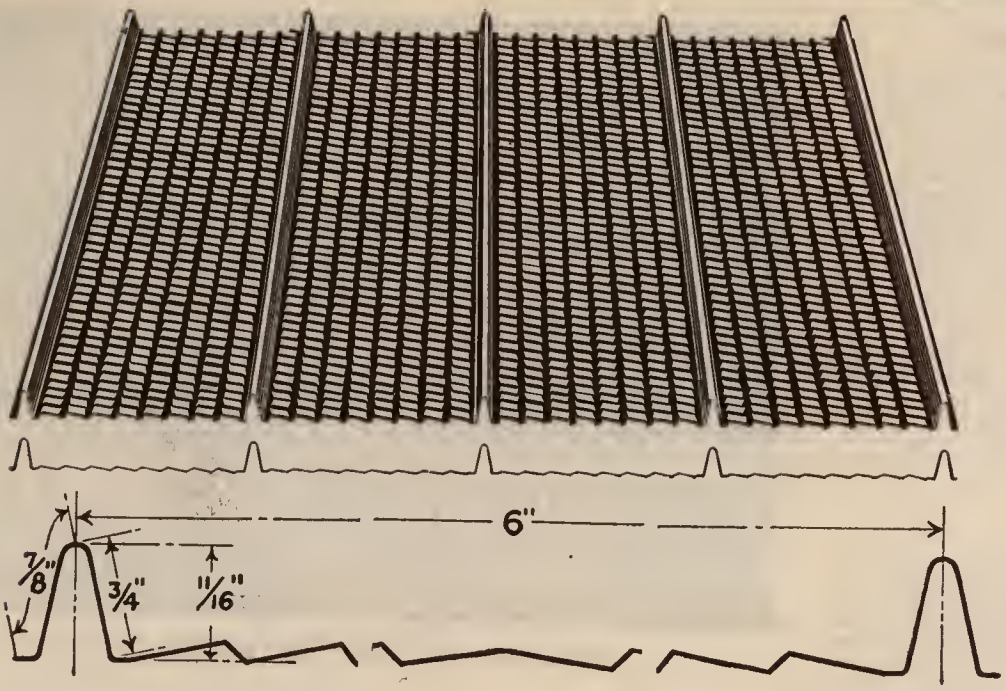
MATERIALS AND WEIGHTS (lbs. per sq. yd.)

COPPER ALLOY STEEL, PAINTED—3.40, 4.00.



STAY-RIB METAL LATH NO. 2

WEIGHTS FOR MAXIMUM SPACING OF SUPPORTS				
Weights recommended (lbs. per sq. yd.)	Distance Between Supports			
	Walls		Ceilings	
	Nailed on, in.	Tied on, in.	Nailed on, in.	Tied on, in.
MILCOR SPECIALMESH				
2.75	16	16	16	12
3.4	19	19	19	19
STAY-RIB NO. 1				
2.75	16	16	16	12
3.4	19	19	19	19
STAY-RIB NO. 2				
3.4	24	24	24	24
4.0	24	24	24	24



3/4" STAY-RIB METAL LATH NO. 3

No. 3 (¾ inch) Stay-Rib has ¾-inch heavy longitudinal ribs spaced 6 inches on center, with seven stiffening members between ribs, forming adequate reinforcement for the connecting strands spaced at ¼-inch intervals. The Milcor process of forming the heavy ribs is important. They are cold-drawn—not stamped—straight, true and uniform in shape with the sides of the rib sloped to insure maximum rigidity.

This lath is designed primarily as reinforcement for concrete floors and roofs, serving in addition as a form upon which wet concrete is poured. In this capacity it is most extensively used in connection with steel and bar joists. The lath may also be used in solid slab construction and may be curved to any required form. It is recommended that wherever curved sheets are required, the curving be accurately done **at the factory.**

Besides its adaptability for flat roof reinforcing, it is unexcelled in the construction of fire-safe pitched roofs, saw-tooth and monitor-type roofs and their adjoining wall or gable constructions.

No. 3 Stay-Rib is admirably adapted to the construction of solid plaster partitions where, due to the rigidity and reinforcing qualities of the ribs, no studs are required—the lath spans vertically from floor to ceiling.

Laid over wood joists, it is ideal as reinforcing for the concrete base for tile, terrazzo or composition flooring.

SHEET SIZE

The covering width of each sheet is 24 inches. **Standard sheets are 6, 7, 8, 9, 10, 11 and 12 feet long.** Sheets of intermediate length can be furnished, cut to exact lengths without extra cost (except that of stock waste).

MATERIALS AND WEIGHTS (lbs. per sq. ft.)

Note: For complete descriptions of materials, finishes, etc., see page 2.

COPPER ALLOY STEEL, PAINTED—.60, .75.

Packed 6 sheets to a bundle.

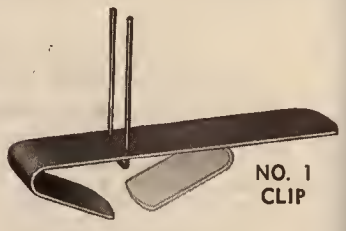
CROSS SECTIONAL AREAS (sq. in. per ft. width)

.60 lbs.—.1482; .75 lbs.—.1977.

NO. 1 MILCOR METAL LATH CLIPS

For attaching Nos. 2 and 3 Stay-Rib Metal Lath when used as top lath in floor or roof construction (see page 3).

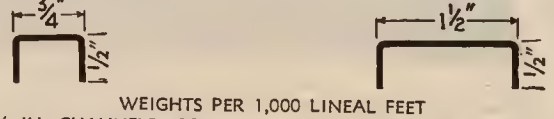
Milcor Lath Clip No. 1 is made in two parts: A flat metal strip and a strong "U" shaped tie wire. One end of the strap is formed into a hook shape at the factory, the other end is clinched around the flange of the beam on the job.



NO. 1 CLIP

MILCOR COLD ROLLED CHANNELS

Milcor Steel Channels are cold rolled and present a level surface on all three sides. They are accurately pressed at perfect right angles, uniform and straight their entire length. These cold rolled channels are regularly used with metal lath in the construction of suspended ceilings, furred ceilings, wall furring and solid and hollow partitions.



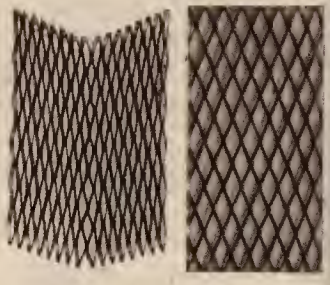
WEIGHTS PER 1,000 LINEAL FEET

¾-IN. CHANNELS—300 lbs. 1½-IN. CHANNELS—475 lbs.

Furnished in 16 and 20-ft. lengths

MILCOR Diamond-Mesh Expanded Corner Lath

(FOR INNER CORNERS AND CEILING ANGLES)



CORNER LATH LATH STRIP

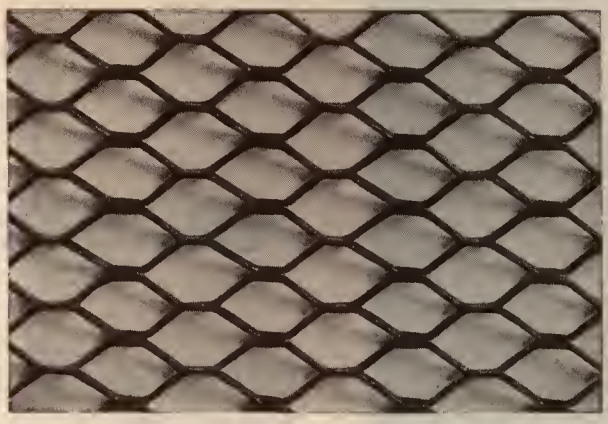
SPECIFICATION DATA

General Characteristics

Milcor Corner Lath consists of strips of Netmesh (see page 5) ⅜-in. diamond expanded lath with finished edges — not rough or ragged. Required as reinforcing over all re-entrant angles over wood or rib metal lath or over plaster board.

SIZES—Corner Lath has 2 or 3-in. wing width and is 8 ft. long. Lath Strips are 3 ins. wide and 8 ft. long. Packed 600 lin. ft. per bundle.

MATERIAL—Painted copper alloy steel.



SMALMESH

Due to the close, rigid mesh only a comparatively small amount of plaster is required to produce a perfect key with speed, ease and economy in plastering material.

A general utility lath ideally suited to the ordinary lathing need. It can be readily bent or formed for furred or ornamental members and for fireproofing of steel beams, girders, and columns.

SHEET SIZE

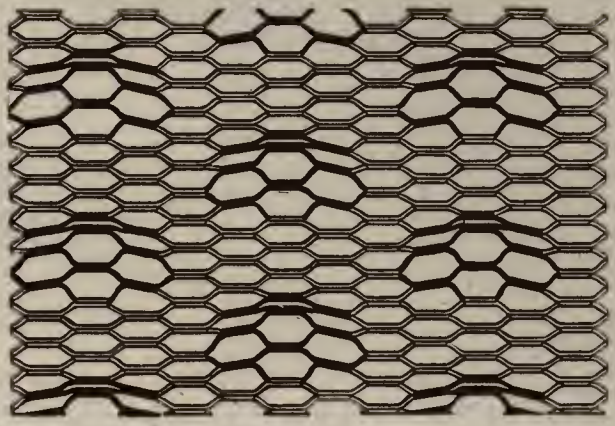
24x96 in., packed 9 sheets (16 sq. yds.) per bundle.
27x96 in., packed 10 sheets (20 sq. yds.) per bundle.
All sheets are squared on both ends.

MATERIALS AND WEIGHTS (lbs. per sq. yd.)

Note: For complete descriptions of materials, finishes, etc., see page 2.

COPPER ALLOY STEEL, PAINTED—2.50, 3.40.
GALVANIZED SHEET STEEL—3.40

RECOMMENDED WEIGHTS (lbs. per sq. yd.)				
Recommended weights	Distance Between Supports			
	Walls		Ceilings	
	Nailed on, in.	Tied on, in.	Nailed on, in.	Tied on, in.
2.5	16	12	....	....
3.4	16	16	16	13½



FURLATH

Furlath is a diamond expanded self-furring lath designed for exterior stucco.

The self-furring feature consists of staggered indentations or stools spaced 3½ inches apart horizontally and 2 inches apart vertically, which hold the body of the lath ⅜ of an inch away from the sheathing or wall.

The lath should be secured to the sheathing at depressions or indentations with six-penny nails or 1¼-inch roofing nails.

SHEET SIZE

24x96 in., packed 9 sheets (16 sq. yds.) per bundle.
27x96 in., packed 10 sheets (20 sq. yds.) per bundle.
All sheets are squared on both ends.

MATERIALS AND WEIGHTS (lbs. per sq. yd.)

Note: For complete description of materials, finishes, etc., see page 2.

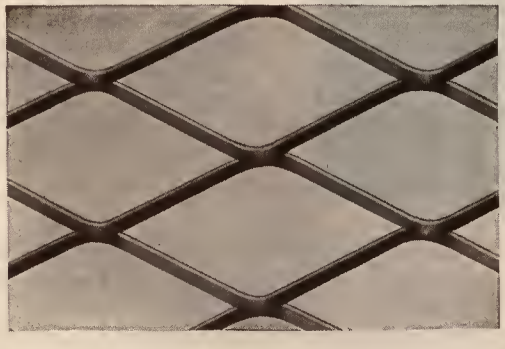
COPPER ALLOY STEEL, PAINTED—2.50, 3.40.
GALVANIZED SHEET STEEL—3.40

RECOMMENDED WEIGHTS (lbs. per sq. yd.)

OVER SHEATHING, ETC.—3.40.

● ● ●

MILCOR BIG MESH METAL LATH



Success with stucco requires not only a correct plastering base, but proper reinforcement as well. This reinforcement must be such that the plastering operation will easily and effectively make it an integral part of the stucco slab.

With these requirements in mind Milcor Big-Mesh Stucco Lath has been designed essentially for stucco work applied either by hand or "gunite" machine. It is expanded into diamond meshes 1½x3 in. with heavy connecting strands.

Since reinforcement is the essential feature, furring is necessary. This is accomplished economically by the Milcor Furring Nail, 1½ in. long, equipped with a spacing device held close up into the mesh angles, placing the wings so that the conveying strands rest on its top edge, ⅜ of an inch out from the sheathing.

SHEET SIZE

48 x 96 in., packed 10 sheets (35 5/9 sq. yds.) per bundle.
All sheets are squared on both ends.

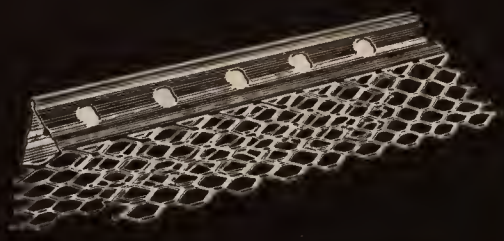
MATERIALS AND WEIGHTS (lbs. per sq. yd.)

Note: For complete description of materials, finishes, etc., see page 2.
COPPER ALLOY STEEL, PAINTED—1.8, 3.6.

SUPER-EX

Profile of Super-Ex Corner Bead

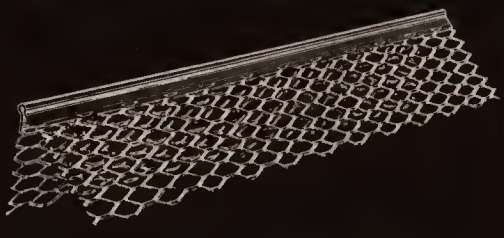
Super-Ex Corner Bead Pat. No. 2,267,002



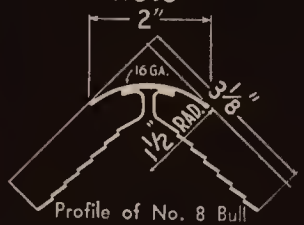
NO.1

Profile of No. 1 Expansion Corner Bead

No.1 Expansion Corner Bead

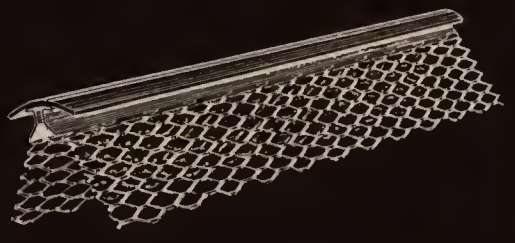


NO.8

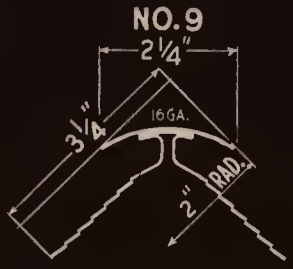


Profile of No. 8 Bull Nose Corner Bead

No. 8 Expansion Bull Nose Corner Bead



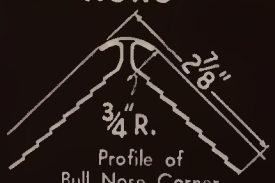
NO.9



Profile of No. 9 Bull Nose Corner Bead

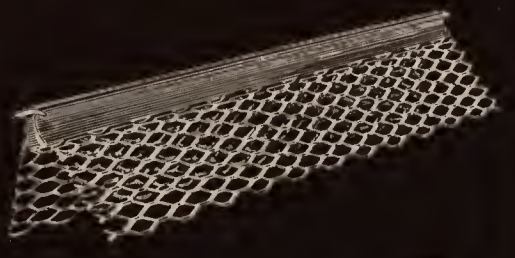
No. 9 Expansion Bull Nose Corner Bead

NO.10

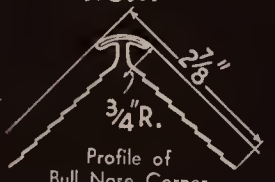


Profile of Bull Nose Corner Bead No. 10

No. 10 Expansion Bull Nose Corner Bead

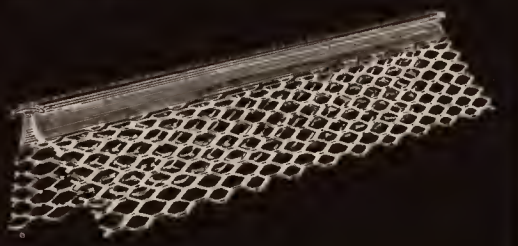


NO.11



Profile of Bull Nose Corner Bead No. 11 Showing Reinforcement

No. 11 Expansion Bull Nose Corner Bead



MILCOR

EXPANSION CORNER BEADS

Super-Ex Corner Bead combines all the advantages of both Expansion and Solid Wing Corner Beads. Absolutely rigid—excellent plaster bond. Made of Galvanized Sheets, 26 gauge. Made in 8, 9, 10 and 12-ft. lengths. Weight per 1000 feet: No. 26 gauge, 320 lbs., crated. Crated in approximately 500 feet lots.

No. 1 Expansion Corner Bead has a 2⅝-inch expanded metal wing which is integral with the nose of the bead. Fabricated from No. 26 gauge tight coat galvanized steel. Made in 8, 9, 10 and 12-ft. lengths. Weight per 1,000 feet: No. 26 gauge, 230 lbs., crated. Packed approximately 500 feet to the crate.

No. 8 Bull Nose Expansion Corner Bead has a 1½-inch radius. The face of the bead is 2 inches wide and is made from 16-gauge metal. Packed approximately 200 ft. to the crate. Weight per 1,000 lin. ft., crated, 850 lbs.

No. 9 Bull Nose Expansion Corner Bead has a 2-inch radius. The face of the bead is 2¼ inches and is made from 16-gauge metal. Packed approximately 20 Pcs. to the crate. Weight per 1,000 lin. ft., crated, 1,050 lbs.

No. 10 Bull Nose Expansion Corner Bead is furnished in 26-gauge tight coat galvanized steel. Packed approximately 200 ft. to the crate. Weight per 1,000 lin. ft., No. 26 gauge, 365 lbs., crated. (Patent No. 1,678,813.)

No. 11 Bull Nose Expansion Corner Bead is the same as No. 10 except that it has reinforced nose. Weight per 1,000 ft., 465 lbs., crated.

Corner Beads Nos. 8, 9, 10 and 11 made in 7, 8, 9, 10 and 12-foot lengths

MILCOR

SOLID WING CORNER BEADS

NO. 12 EXTRA WIDE FLANGE CORNER BEAD

MATERIAL—No. 26 gauge sheet steel, galvanized.

LENGTHS—8, 9, 10 and 12 ft.

APPROXIMATE WEIGHT—No. 26 gauge—370 lbs. per 1,000 ft.

NO. 13 "SUPERIOR" CORNER BEAD

MATERIAL—No. 26 gauge sheet steel, galvanized.

LENGTHS—8, 9, 10 and 12 ft.

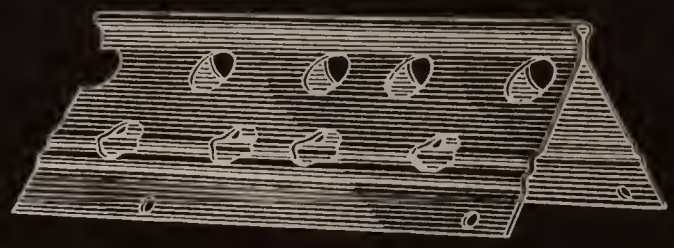
APPROXIMATE WEIGHT—220 lbs. per 1,000 ft., crated. Packed ten pieces of uniform length to the bundle.

NO. 15 "MILCOR" CORNER BEAD

MATERIAL—No. 26 gauge sheet steel, galvanized.

LENGTHS—8, 9, 10 and 12 ft.

APPROXIMATE WEIGHT—200 lbs. per 1,000 ft.

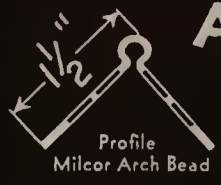


NO. 12. EXTRA WIDE FLANGE CORNER BEAD

NO. 13. "SUPERIOR" CORNER BEAD

NO. 15. "MILCOR" CORNER BEAD

MILCOR
ARCH BEAD



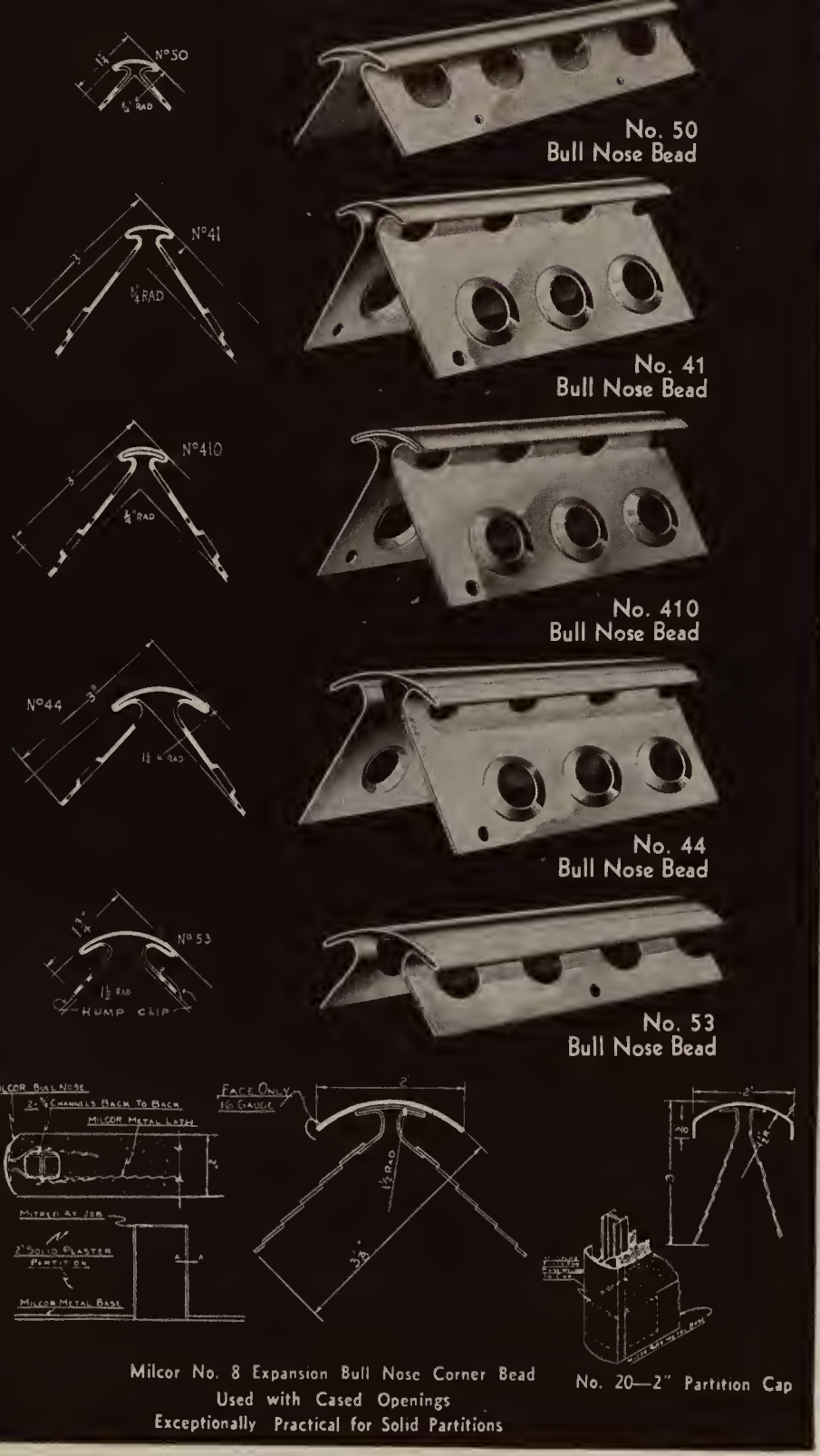
Corner Bead Clip

MILCOR ARCH BEAD

THIS CORNER BEAD is used straight or curved. To curve—simply snip one or both flanges with tin snips. The desired arc can then be formed by applying slight pressure with the hands. The special design of the bead allows it to be formed into a smooth arc without kinks or breaks in the nose. A minimum amount of metal cutting is required.

Made of 26 gauge galvanized sheet steel in 8, 9, 10 and 12-ft. lengths.
Weight per 1,000 lin. ft.—180 lbs.

All corner beads on this page are packed as follows: 8 ft.—560 ft. per carton, 9 ft.—540 ft. per carton, 10 ft.—500 ft. per carton, 12 ft.—600 ft. per carton



Diagrams above indicate how the Milcor No. 8 Expansion Bull Nose Corner Bead and the No. 20 Partition Cap are used in connection with cased openings in Solid Partitions.

All Corner Beads on this page made in 7, 8, 9, 10 and 12-foot lengths.

MILCOR SOLID WING BULL NOSE CORNER BEADS

NO. 50 BULL NOSE BEAD

¾-in. radius.

MATERIAL—No. 26 and No. 24 gauge sheet steel.

APPROXIMATE WEIGHTS—No. 26 gauge, 290 lbs. per 1,000 feet, crated; No. 24 gauge, 410 lbs. per 1,000 feet, crated. Packed approximately 500 lin. ft. per crate.

NO. 41 BULL NOSE BEAD

¾-in. radius, 3-in. flange. Cone-shaped perforations form a perfect key.

MATERIAL—No. 26 gauge sheet steel.

APPROXIMATE WEIGHTS—No. 26 gauge, 480 lbs. per 1,000 feet, crated. Packed approximately 500 lin. ft. per crate.

NO. 410 REINFORCED BULL NOSE BEAD

¾-in. radius, 3-in. flange. Cone-shaped perforations form a perfect key.

MATERIAL—No. 26 gauge sheet steel with 20 gauge reinforced nose.

APPROXIMATE WEIGHTS—No. 26 gauge, 500 lbs. per 1,000 feet, crated. Packed approximately 500 lin. ft. per crate.

NO. 44 BULL NOSE BEAD

1 ½-in. radius, 3-in. flange. Cone shaped perforations form a perfect key.

MATERIAL—No. 26 gauge sheet steel.

APPROXIMATE WEIGHTS—No. 26 gauge, 570 lbs. per 1,000 feet, crated. Packed approximately 500 lin. ft. per crate.

NO. 440 BULL NOSE BEAD

Same as No. 44 except that it has reinforced nose.

NO. 53 BULL NOSE BEAD

1 ½-in. radius, 1¾-in. flange.

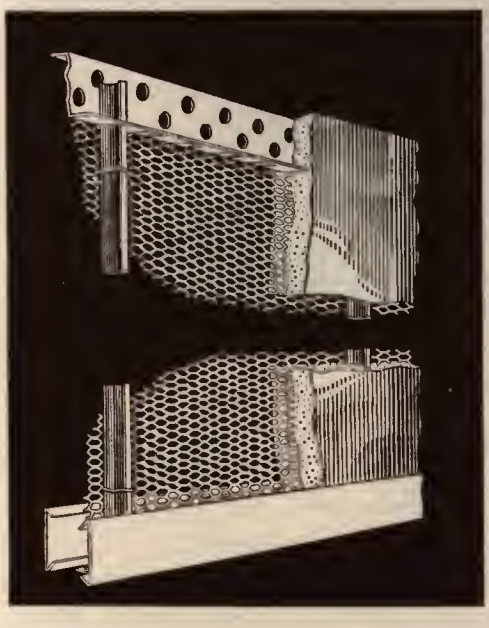
MATERIAL—No. 26 gauge sheet steel.

APPROXIMATE WEIGHTS—No. 26 gauge, 390 lbs. per 1,000 feet, crated. Packed approximately 500 lin. ft. per crate.

NO. 530 BULL NOSE BEAD

Same as No. 53 except that it has reinforced nose.

MILCOR SOLID PARTITION SYSTEM



The Milcor Solid Partition is a steel reinforced vertical slab of plaster, 2 inches thick. Hot or Cold Rolled Steel Channels, running from floor to ceiling, reinforce the partition vertically and hold the Metal Lath to which the plaster is applied. The Metal Lath reinforces the partition both horizontally and diagonally and at the same time functions as a plaster base. The Milcor Solid Partition works as a unit to resist physical impact, fire, wind, water, sound and vibration.

DESCRIPTION

The new Milcor Solid Partition System utilizes standard ¾-in. Hot or Cold Rolled Channels in combination with Ceiling Runner and Floor Runner or in combination with Ceiling Runner, Floor Clips and Metal Base. Erection is swift and simple. Ceiling Runner and Floor Runner or Clips are attached with stub nails, anchor bolts or Rawl Drives. Channel Studs are then inserted into Ceiling Runner and Floor Runner or Clips, which hold them securely in position. When Metal Lath is applied (on Runner side of partition—see illustration), tying is completed in one operation with ordinary tie wire without any previous wiring of Channels to Runners. Tying is done at intervals not to exceed nine inches vertically. Partition is completed by plastering on both sides of the Metal Lath to a total thickness of two inches.

Channels furnished in stock lengths and cut to length on the job. Runners furnished in 24- or 26-ga. steel in stock lengths of 10 feet with openings for studs spaced 2-in. on centers. Depth of Ceiling Runner allows for 2-in. variation in ceiling heights.

METAL BASES

Metal Bases, illustrated below, act as plaster grounds and eliminate need for Base Screed. The prongs on the Floor Clips are bent up so that Base can be hung temporarily until all adjustments have been completed. Base is then secured by bending the prongs down into position. Bases shown are made of 18- and 20-ga. steel in 10-ft. lengths. Notching, cutting and bending tools for forming corners at the job can be furnished on a rental basis.

MILCOR FURRING SYSTEM

This construction permits the use of a free standing wall, plastered one side only, which can be placed at any distance from the masonry walls. The space between lath wall and masonry wall may be filled with insulating material or may be used for concealing pipes and conduits. Method of erection is the same as for Solid Partitions except that plastering is done on one side only.

FLOOR CLIPS AND METAL BASES FOR USE WITH MILCOR SOLID PARTITION AND FURRING SYSTEM

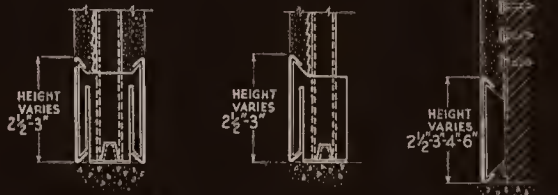
Clips for Metal Bases Nos. 665, 666 and 668

"D" Clip Double Base Type

Solid Plaster Partition — Furred Wall — Masonry Wall

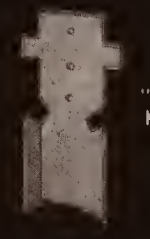
No. 665 Metal Base

"F" Clip Furring Type



Solid Plaster Partition — Furred Wall — Masonry Wall

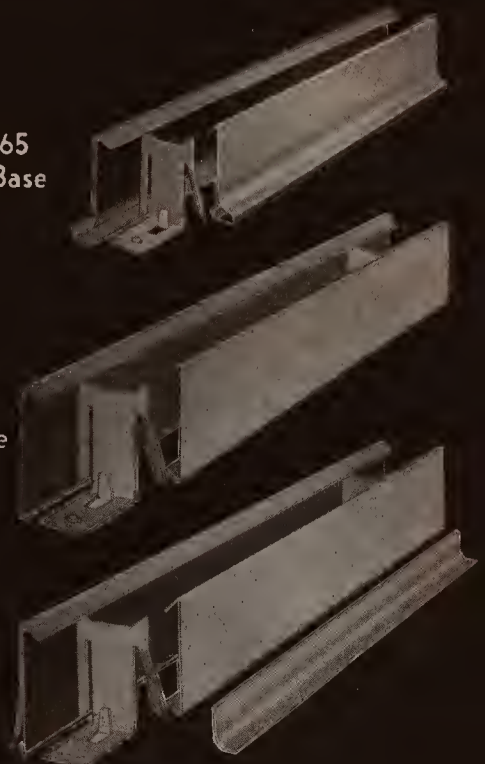
No. 666 Metal Base



"M" Clip Masonry Type

Solid Plaster Partition — Furred Wall — Masonry Wall

No. 668 Metal Base With Separate Cove



MILCOR STEEL STUD

Milcor Steel Studs have large uniform openings between the reinforced X-shape cross members.

ADVANCED ENGINEERING DESIGN OF THE EMBOSSED X-SHAPED MILCOR STEEL STUD OFFERS SIX IMPORTANT ADVANTAGES

FIRE-SAFETY—Milcor Hollow Partitions with Metal Lath are given a one- to two-hour fire rating, depending upon plaster used.

EARTHQUAKE RESISTANCE—Architects and Engineers agree that there is no other type of partition construction which will resist earthquakes, explosions, etc., as much as that made with Steel Studs and Metal Lath.

INSULATING VALUE—Because the partitions are hollow they have exceptional insulating value. If additional insulation is desired the application of any of the many insulating materials is easily made in the space between the walls.

SOUND RESISTANCE—Hollow Partitions are effective barriers to sound. Their sound insulating value compares favorably with clay or gypsum partitions which weigh a great deal more.

LIGHT WEIGHT—The use of the Steel Stud permits economical construction because of its light weight as compared with other types of partitions.

ELIMINATION OF PLASTER CRACKS—Steel Studs are not affected by moisture, cannot swell, warp or split. They are held firmly in place and eliminate the principal causes of plaster cracking when used in connection with Metal Lath.

ADAPTABILITY AND STRENGTH ASSURE SOUND CONSTRUCTION

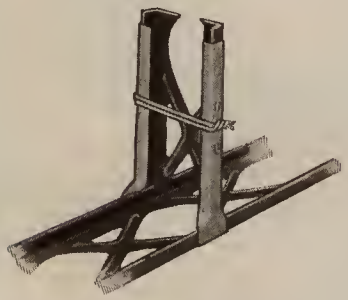
Milcor Steel Studs are very adaptable to framing for doors and other openings. To erect a door frame of unusual rigidity, Steel Stud members on either side of the opening are placed facing each other. Next a cross member is quickly and firmly attached with the special Milcor Shoe, completing the job. Wood framing may be nailed directly to the studs.

When used with Metal Lath and plaster, Milcor Steel Studs produce a partition strength equal to, or greater than, that of tile or gypsum block of equivalent thickness. Furthermore, they hold two advantages over masonry partitions; (1) Extraordinary resistance to explosions; (2) Provision for a positive tie to floor and ceiling.

Milcor Steel Studs require a very small amount of storage space. They are easy to handle and not ordinarily subject to damage in transit. They combine strength with the advantage of much less bulk than wooden or other types. The large uniform perforations permit the passage of electrical, heating and water equipment without expensive cutting and fitting.

With the external type shoe (illustrated at left) a firm attachment of the stud can be made to floor or ceiling runners and also to studs in horizontal position. Shoes are furnished in 5- or 7-in. lengths. The 7-in. shoe is used for ceiling attachments when variations in ceiling height call for extra length.

EXTERNAL TYPE SHOES



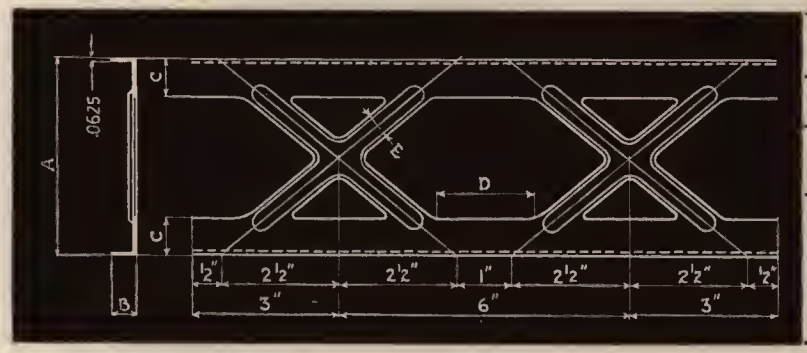
Complete application of shoe—with stud attached to floor runner.

The use of Milcor Steel Studs greatly facilitates installation of electrical conduits and water pipes. These studs are readily adapted to framing for doors and other openings.

COST SAVING FEATURES OF MILCOR STEEL STUDS RIVAL ADVANTAGES OF SAFE STURDY CONSTRUCTION

Undeniable savings in erection are achieved because of:

1—Remarkably quick attachment with the MILCOR SHOE.
2—Variety of positions in which the same shoes and studs may be locked.
3—Elimination of confusion with materials—only one standard unit.
4—Large, uniform openings enable quick installation of pipes and conduits.
5—Exceptional strength requires less horizontal bridging.
6—Quickly cut to length on the job or pre-cut if desired.
7—Practically no cleaning up costs after installation.



PROPERTIES OF MILCOR STEEL STUDS All Dimensions in Inches				
A	B	C	D	E
3¼	½	¾	2¾	⅜
4	½	¾	2	½
6	½	¾	1½	½

SUGGESTED SPECIFICATIONS FOR MILCOR STEEL STUDS

PARTITIONS—To be made with MILCOR STEEL STUD, using ceiling and floor runner tracks, and Milcor shoes.

ERECTION STEPS—

1. Runner tracks to be aligned and securely attached to floor, ceiling or walls with concrete stub nails (or $\frac{3}{16}$-in. toggle bolts, in existing suspended ceilings). In new suspended ceilings runner track is to be wired to channels.

2. Erect MILCOR STUDS in accordance with recommended spacing as given in table below:

3. MILCOR SHOES to be used for attaching studs to floor and ceiling runners and cross members as required.

METAL LATH

To be MILCOR (see table for type and weight recommended for use with various stud spacings).

CONCRETE STUB NAILS—

¾-in. concrete stub nails are to be used for attaching floor and ceiling runners.

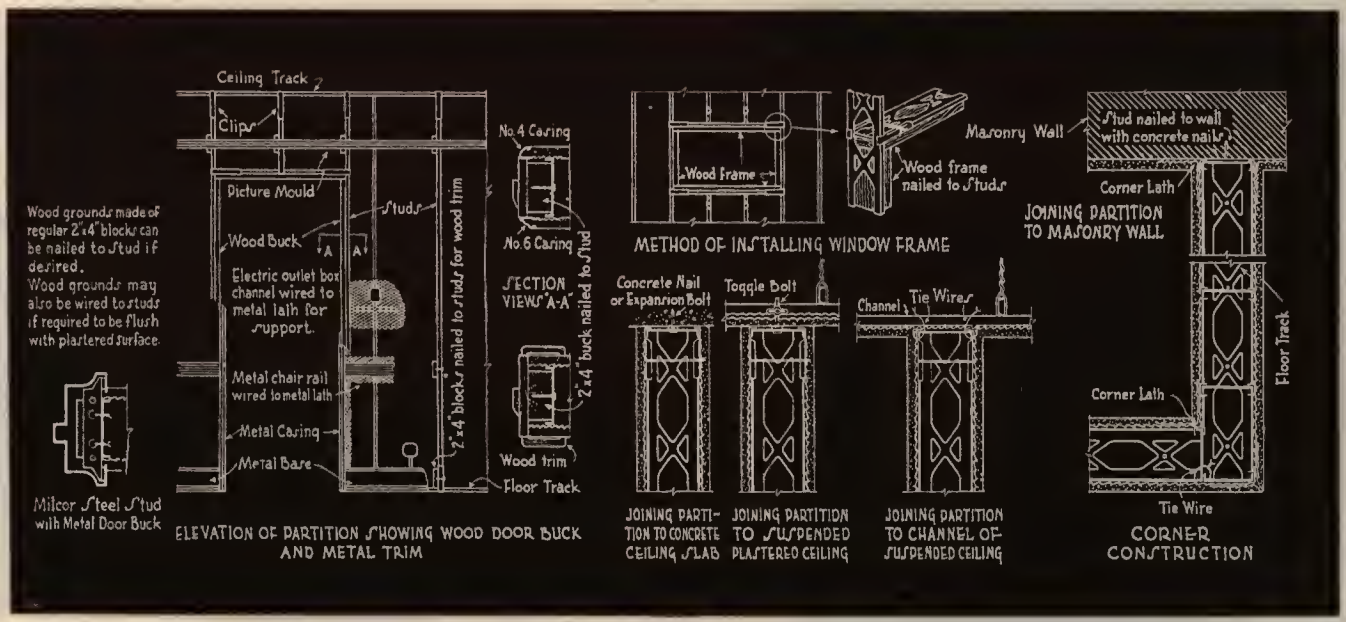
Type and Weight of Metal Lath	Recommended Spacing of Studs	Type and Weight of Metal Lath	Recommended Spacing of Studs
2.5 lb. Smalmesh	12 in.	3.4 lb. Milcor Specialmesh and No. 1 Stay-rib	19 in.
3.4 lb. Smalmesh	16 in.	3.4 lb. ⅜-in. Stay-rib No. 2	24 in.
2.75 lb. Milcor Specialmesh and No. 1 Stay-rib	16 in.	4.0 lb. ⅜-in. Stay-rib No. 2	24 in.

STANDARD SIZES AND WEIGHTS

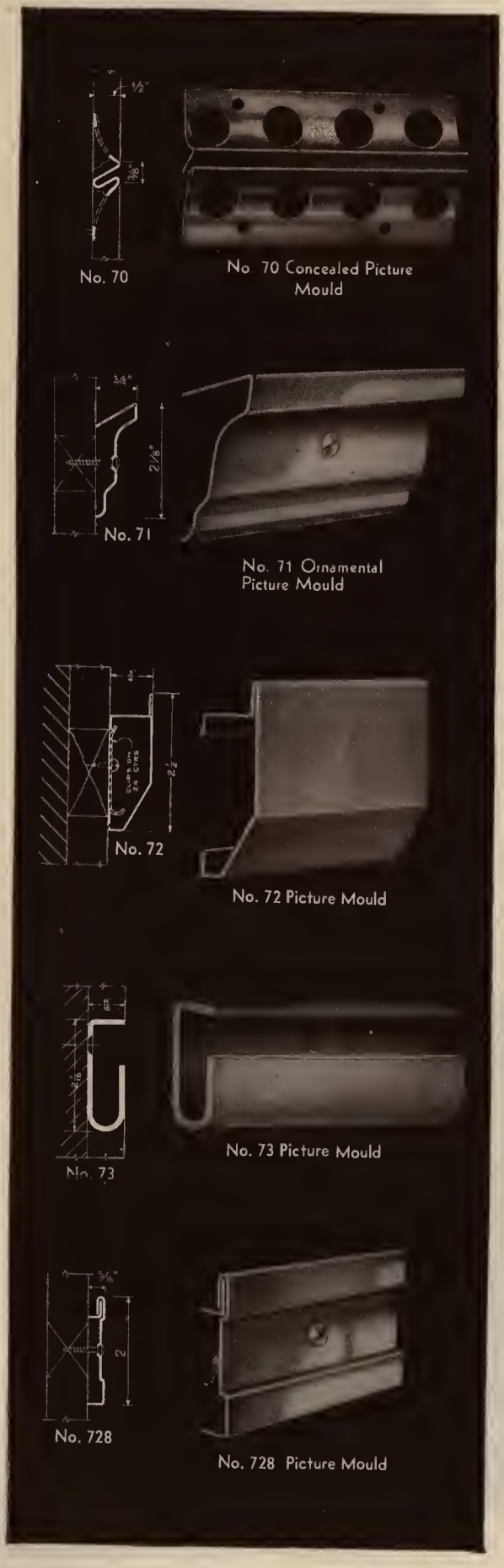
MILCOR STEEL STUDS are made of 16 gauge steel in three standard sizes: 3¼, 4 and 6 in. They are furnished in 6-, 7-, 8-, 9-, 10-, 12-, 14-, 16-, 18- and 20-ft. lengths. Special intermediate lengths can be furnished which are charged for at the price of the next standard length.

WEIGHTS—POUNDS PER 1000 FEET

3¼-in. size.....720 lbs.
4 -in. size.....700 lbs.
6 -in. size.....880 lbs.



MILCOR STEEL STUDS are adaptable to every type of fireproof construction. Expansion corner beads, picture mould, chair rails, metal or wood casing, metal door bucks, wood or metal window frames, wood or metal base, cove lath and other equipment are applied in the regular manner.



MILCOR PICTURE MOULDS

NO. 70 CONCEALED PICTURE MOULD

MATERIAL—No. 26 gauge sheet steel, galvanized. LENGTH—10 ft. APPROXIMATE SHIPPING WEIGHT—260 lbs. per 1,000 ft.

NO. 71 PICTURE MOULD

MATERIAL—No. 20 gauge and No. 18 gauge sheet steel, galvanized. LENGTH—10 ft. APPROXIMATE SHIPPING WEIGHT—No. 20 gauge—420 lbs. per 1,000 ft. No. 18 gauge—550 lbs. per 1,000 ft.

NO. 72 PICTURE MOULD

MATERIAL—No. 20 gauge sheet steel, galvanized. LENGTH—10 ft. APPROXIMATE SHIPPING WEIGHT—680 lbs. per 1,000 ft.

NO. 73 PICTURE MOULD

MATERIAL—Nos. 16, 14 and 12 gauge sheet steel, galvanized. LENGTH—10 ft. APPROXIMATE SHIPPING WEIGHT—No. 16 gauge—1,030 lbs. per 1,000 ft. No. 14 gauge—1,270 lbs. per 1,000 ft. No. 12 gauge—1,760 lbs. per 1,000 ft.

NO. 728 PICTURE MOULD

MATERIAL—No. 20 gauge steel, black. LENGTH—10 ft. APPROXIMATE SHIPPING WEIGHT—420 lbs. per 1,000 ft.

Packed in Crates or Cartons.

MILCOR BASE SCREEDS

NO. 3 EXPANSION BASE SCREED

GENERAL CHARACTERISTICS—A firm, rigid metal dividing strip set between plaster and flush cement base with the advantage of 2¾-inch wings of strong mesh lath which reinforces against the possibility of cracks at juncture.

MATERIALS, WEIGHTS, ETC.—Sheet steel, galvanized. 26 gauge. Shipping weight approximately 230 lbs. per 1,000 lin. ft., 10 ft. long. Packed 500 lin. ft. per crate or carton.

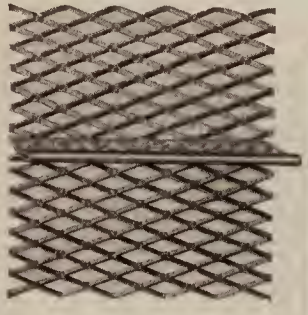
NOTE: For complete description of materials, finishes, etc., see page 2.

NO. 74 CURVED POINT BASE SCREED

MATERIAL—No. 26 gauge sheet steel, galvanized. LENGTH—10 ft. APPROXIMATE SHIPPING WEIGHT—200 lbs. per 1,000 ft. Cast iron fittings can be furnished with this screed. Packed 1,000 lin. ft. per crate or carton.

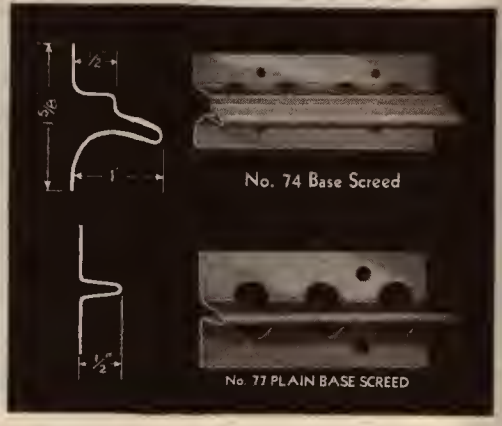
NO. 77 PLAIN BASE SCREED

MATERIAL—No. 26 gauge sheet steel, galvanized. LENGTH—10 ft. Stocked in ½-in. grounds. APPROXIMATE SHIPPING WEIGHT—160 lbs. per 1,000 ft. Packed 1,000 lin. ft. per crate or carton.



NO. 3 EXPANSION BASE SCREED

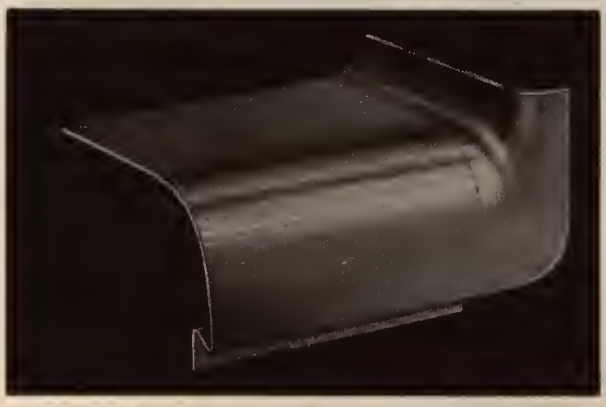
The network of the expanded metal wings assures keying of the plaster close up to the base of the exposed metal member.



MILCOR WINDOW STOOLS

Milcor Window Stools can be used in combination with a number of Milcor Casings or Corner Beads. Made in 20, 18, 16, 14, and 12 gauge metal, they are prime coated at the factory and will take any painting or decorating finish. Exact dimensions should be supplied wherever possible so that preparatory fabrication may be done in the factory.

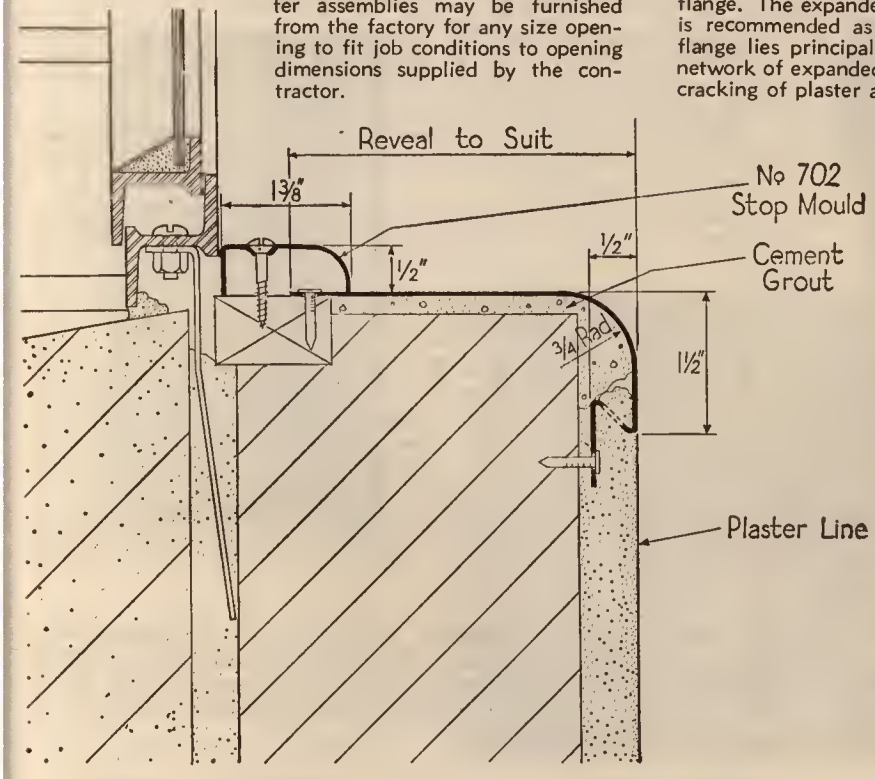
No. 527 Head and Jamb Trim



MILCOR NO. 501 WINDOW STOOL, WITH STANDARD FLANGE AND STAMPED CORNER FITTING FOR ¾-INCH BULL NOSE BEAD

Milcor square, projecting or radius stools may be used in conjunction with plastered jambs with either small nose or bull nose bead, or with radius jamb and head sections. Stools, jambs and heads may be connected with corner fittings welded and fitted in the factory.

Complete frames or three-quarter assemblies may be furnished from the factory for any size opening to fit job conditions to opening dimensions supplied by the contractor.



Milcor Metal Window Trim is an all-inclusive term which covers either the completely mitered, welded and assembled, ready-to-install frame, or the individual units, or combination of sections, which form any part of the inside window opening. **12a 3**

Many individual items, which can be used separately or in combination with other sections to provide any desired interior architectural effect, are available including flush-with-plaster or projecting types. Radius trims may also be furnished with either ¾ or 1½-in. radii.

GENERAL SPECIFICATION DATA

1. IDENTIFICATION OF TRIM—Window trim and/or stools should be selected and specified by numbers given herein.
2. KIND OF METAL AND GAUGE—Trim and/or stools are made from tight coat galvanized sheets of 20, 18, 16, 14 and 12 gauge metal.
3. FITTINGS—Corner Fittings of grey cast iron, may be supplied for all radius fittings and may be fitted and welded to trim in the factory. Stamped steel fittings for certain connections are also available.
4. FINISH—Milcor Window Trim and Stools are given a priming coat at the factory, and take any type of painting or decorating finish. Finishing coat should be applied after trim is installed and the plastering is completed.
5. GROUTING—Grouting is recommended for all Milcor Window Stools. Specifications should call for a thick grout upon which stools are set.
6. MEASUREMENTS—Exact dimensions should be supplied the manufacturer by the contractor whenever possible so that most of the work in preparing the trim for installation may be done at the factory.

MILCOR WINDOW TRIM AVAILABLE IN EITHER STANDARD OR EXPANDED FLANGE

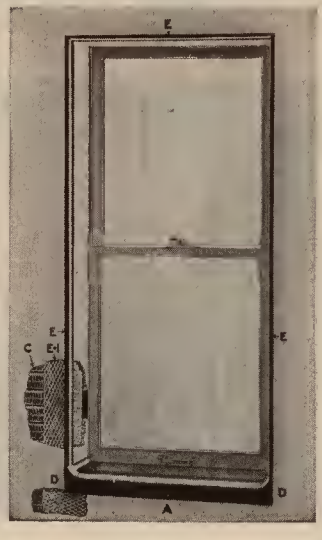
Milcor Window Trim is furnished in either standard or expanded plaster flange. The expanded metal flange, which is welded to the standard flange, is recommended as the most practical. The advantage of this expanded flange lies principally in its function as a permanent plaster bond whose network of expanded steel reinforces the plaster and prevents checking and cracking of plaster at the vulnerable points.

Style of flange desired should be clearly specified and shown on plans. If not specified, standard flange will be furnished. FOR PURPOSES OF UNIFORMITY, ILLUSTRATIONS AND DETAILS SHOW ONLY STANDARD FLANGE.

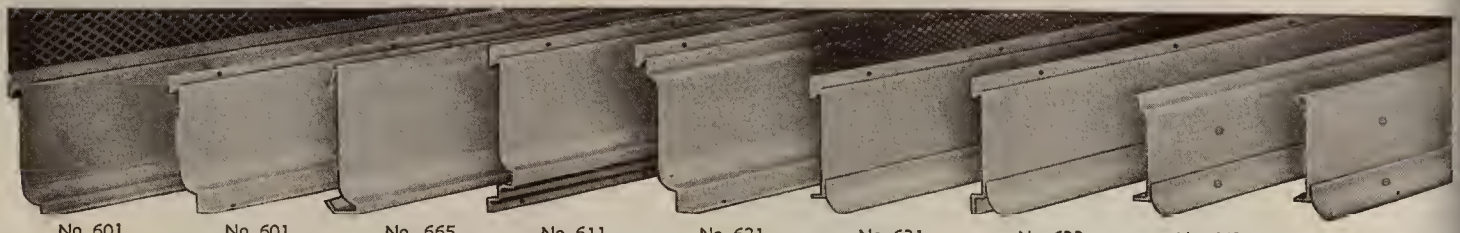
(Shown at Right)

"A"—No. 501 Curved Stool, "D"—Nos. 500-G and 500-H, Left and Right End Fittings, respectively, "E"—¾ in. Nose of Bull Nose Expansion Corner Bead No. 10, "E-1"—Expanded Metal Wings of Bead; "C" Milcor Specialmesh Metal Lath in wall.

It is important that specifications be given regarding gauges of metal. We recommend 18 gauge where the reveal is not wider than 4 in. and the stool is 5 ft. or less.



MILCOR METAL BASES

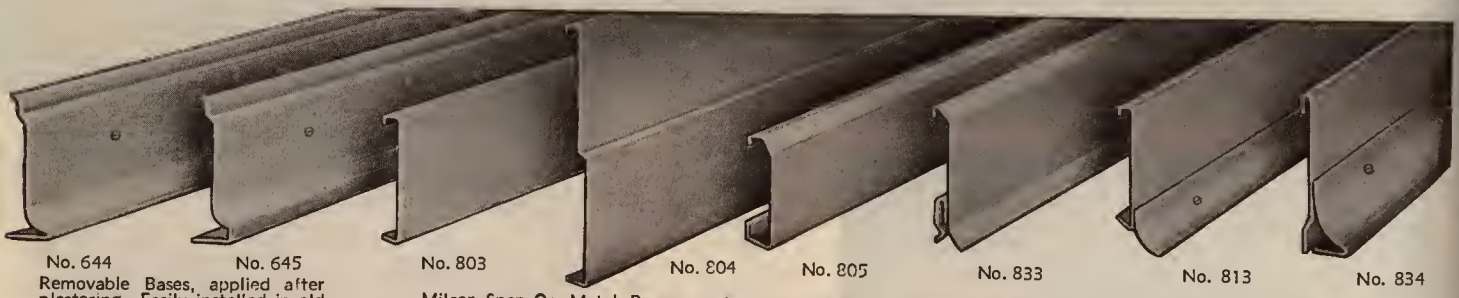


No. 601 No. 601 No. 665 No. 611 No. 621 No. 631 No. 633 No. 643 No. 648

These Milcor Metal Bases, applied before plastering, are available with either Expanded, Metal Flange, or Standard Continuous Flange, 18 or 20 gauge, in heights of either 4 in. or 6 in. Flange has perforations through which a thin cement grout may be poured.

Adjustable bases, especially suitable for wood or linoleum floors. Flush type, with adjustable Cove Mould.

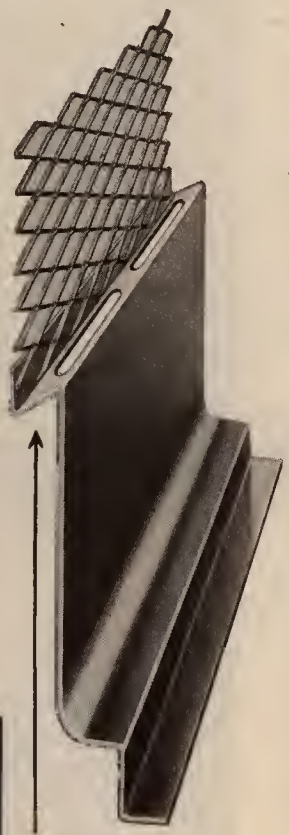
Adjustable Offset Bases, especially designed for use where shrinkage or settling may be excessive. Applied after plastering.



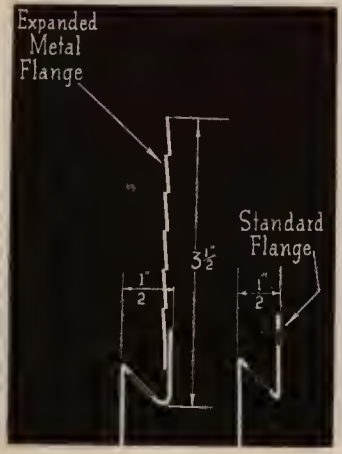
No. 644 No. 645 No. 803 No. 804 No. 805 No. 833 No. 813 No. 834

Removable Bases, applied after plastering. Easily installed in old buildings. No. 645 may also be used as a Casing.

Milcor Snap-On Metal Bases, made in six types to snap on over pre-applied clips and eliminate exposed screw-heads. No. 813 can be used with interchangeable Cove Moulds.



NOTE PERFORATIONS TO PERMIT ENTRY OF GROUT



Metal Base No. 601 Shown above with Standard Flange and Expanded Metal Flange

MILCOR BASES AVAILABLE EITHER WITH EXPANDED METAL FLANGE OR STANDARD FLANGE

GENERAL SPECIFICATION DATA FOR ALL BASES

Milcor Metal Base is available in many practical designs, sizes and weights. There are two general classifications of metal base: 1) flush or plastered-in type; 2) applied or removable type.

1. PLAN SHOWING LOCATION—A plan showing just where metal base is to be used is recommended.

2. IDENTIFICATION OF BASE—Base should be selected and specified by number as given in this catalog.

3. KIND OF METAL AND GAUGE—Milcor bases are made from tight coat galvanized sheets of 18 and 20 gauge metal.

4. FINISH—Milcor bases are given a protective priming coat at the factory and will take any subsequent type of painting or decorating finish. Finish coat should be applied after base is in place and the plastering is completed.

5. FITTINGS—Milcor corner fittings for right angles, both inside or outside, as well as terminating point of base, are furnished.

Special fittings, for odd usage or unusual corners, may be furnished if a sufficient number is required to justify patterns. As a rule, however, special angle corners on any job may be made by mitering or coping by skilled workmen when the base is being installed.

6. GROUTING—Grouting is recommended for all Milcor Flush-Type Bases. Specifications should call for a thin grout to be poured through the slots after the base is in place.

7. INSTALLATION—The base should be installed with the use of special tools for punching and sawing which may be rented from the manufacturer.

FLUSH TYPE BASE

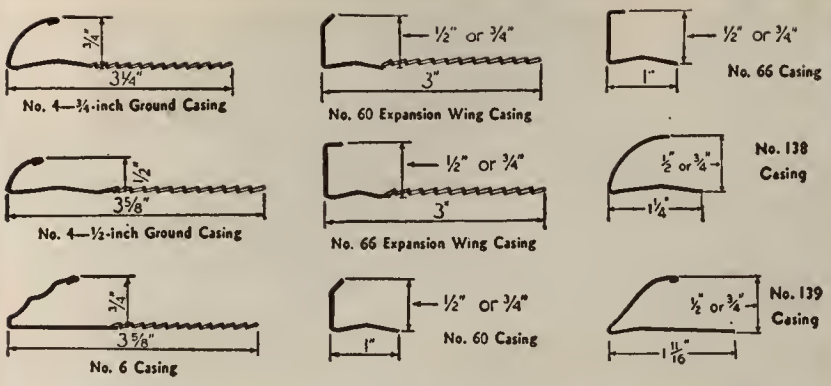
(Plastered-In)

All Milcor Flush Type Metal Bases are available in two styles of top flanges for fastening the base to the wall. The standard flange (illustrated at the left) consists of a continuous solid section, punched at intervals for nailing base to the wall. The expanded flange (also illustrated at the left) is formed by welding a strip of expanded metal to the top section of the base. The expanded flange provides a continuous bond for the plaster.

Style of flange desired should be clearly specified and shown on plans. If no specification is made, standard flange will be furnished. FOR PURPOSES OF UNIFORMITY, THE ILLUSTRATIONS ABOVE SHOW ONLY STANDARD FLANGE.

ANY ITEM IN THE MILCOR METAL TRIM LINE CAN BE SUPPLIED WITH A SOUND-DEADENING INSULMAT BACKING, THE ORIGINAL MATERIAL DEVELOPED TO REDUCE REVERBERATION IN AUTOMOBILE BODIES. INSULMAT IS STANDARD ON ALL MILCOR CHALK TROUGH, BUT MUST BE SPECIFIED ON OTHER PRODUCTS.

MILCOR CASINGS, SPECIAL MOULDS AND CORNER GROUNDS



Milcor Expansion Door and Window Casings add a pleasing note of simplicity quite in line with modern trends. The lasting beauty and the practical, durable and fire-safe advantages of these materials have for years made them the first choice of many architects and contractors.

SPECIFICATION DATA

DESIGNS—No. 4-Quarter Round, No. 6-O.G., No. 60-Square, No. 66-Square, No. 138-Quarter Round and No. 139-O.G. (Shown in the cross sections above.)

FLANGES—Casings Nos. 4, 6, 60 and 66 have the expansion flange as an integral part of the casing. Casings Nos. 60 and 66 also made short flange. The Nos. 138 and 139 are made short flange only.

MATERIALS—Tight coat galvanized steel. Nos. 60 and 66 short flange cut from 22 gauge sheets. Nos. 138 and 139 short flange, also all expansion flange casings cut from 24-gauge sheets.

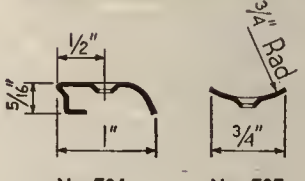
LENGTHS AND GROUNDS—Made in 7, 8 and 10-foot lengths. No. 6-O.G. made for ¾-inch grounds only. All other styles made for ½ and ¾-inch grounds.

NOS. 704 AND 705 MOULDS FOR CASINGS, STOOLS, ETC.

No. 704 Mould for Casings and Window Trim 24 Gauge Galvanized Steel, gray primed, 1 inch wide—No. 5, ¾-inch Oval Head Wood Screws furnished.

No. 705 Casings Mould, 20 Gauge Galvanized Steel, gray primed, ¾-inch radius —No. 5, ¾-inch Oval Head Wood Screws furnished.

Screw Holes Spaced 11½ inches on Centers in All Moulds. Standard Lengths: 7, 8 and 10 feet.



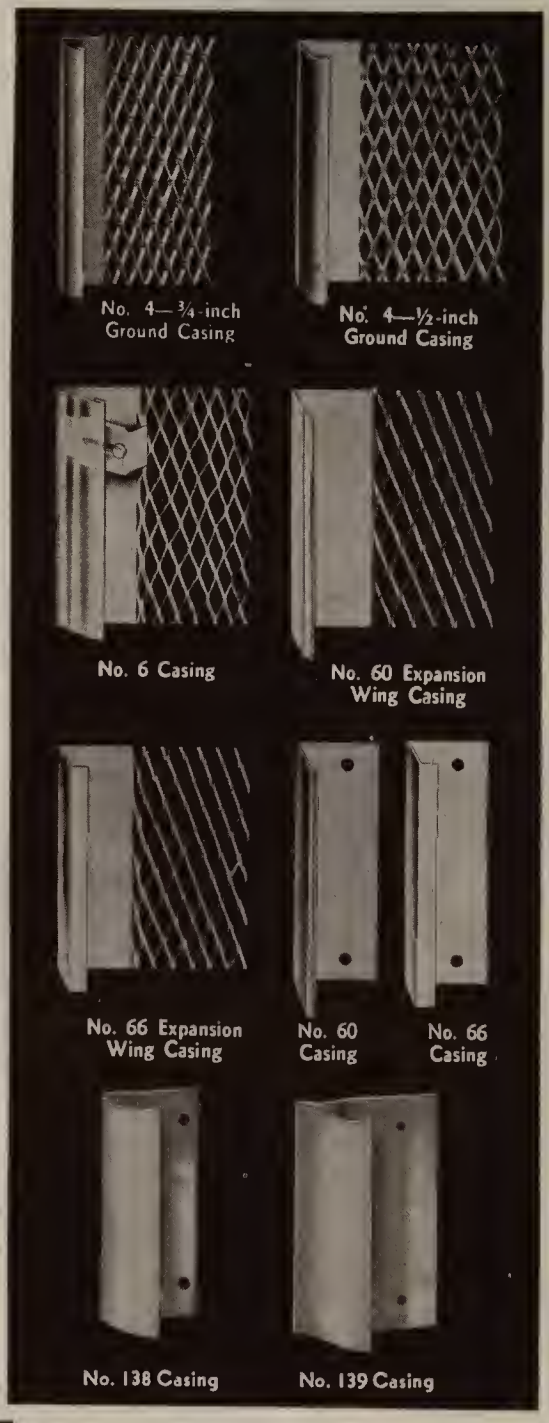
No. 704 No. 705

CORNER GROUNDS NO. 65

Illustrations below and in the lower right hand corner of page show Corner Ground No. 65. No. 65 Corner Grounds are made both with and without Expansion Wing attached.

Cut from 24 ga. galvanized steel, in 7, 8 and 10-foot lengths.

Corner Ground No. 65 | Corner Ground No. 65 with Expansion Wing

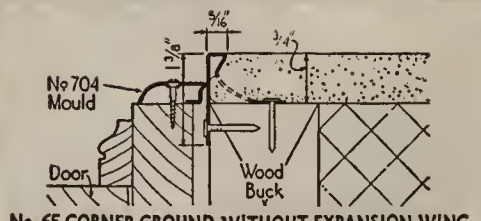


No. 4—¾-inch Ground Casing | No. 4—½-inch Ground Casing

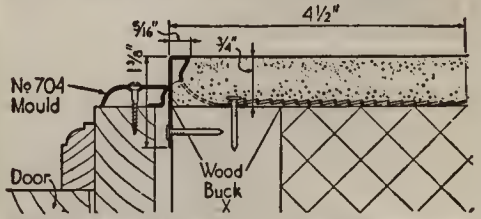
No. 6 Casing | No. 60 Expansion Wing Casing

No. 66 Expansion Wing Casing | No. 60 Casing | No. 66 Casing

No. 138 Casing | No. 139 Casing

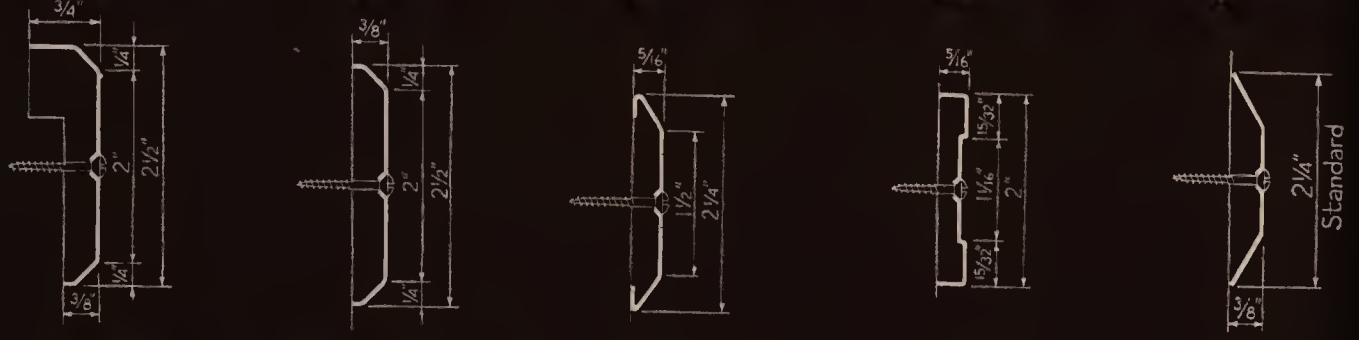


No. 65 CORNER GROUND WITHOUT EXPANSION WING



No. 65 CORNER GROUND WITH EXPANSION WING

MILCOR BLACKBOARD MOULDS



No. 721 No. 722 No. 723 No. 724 No. 725

No. 723-L No. 723-T No. 723-X No. 723-H No. 723-J

FITTINGS FOR No. 723 BLACKBOARD MOULD

- No. 723-L Corner Fitting.
- No. 723-T "T" Fitting
- No. 723-X Cross Fitting.
- No. 723-H Right End Stop.
- No. 723-J Left End Stop.

FITTINGS FOR No. 724 BLACKBOARD MOULD

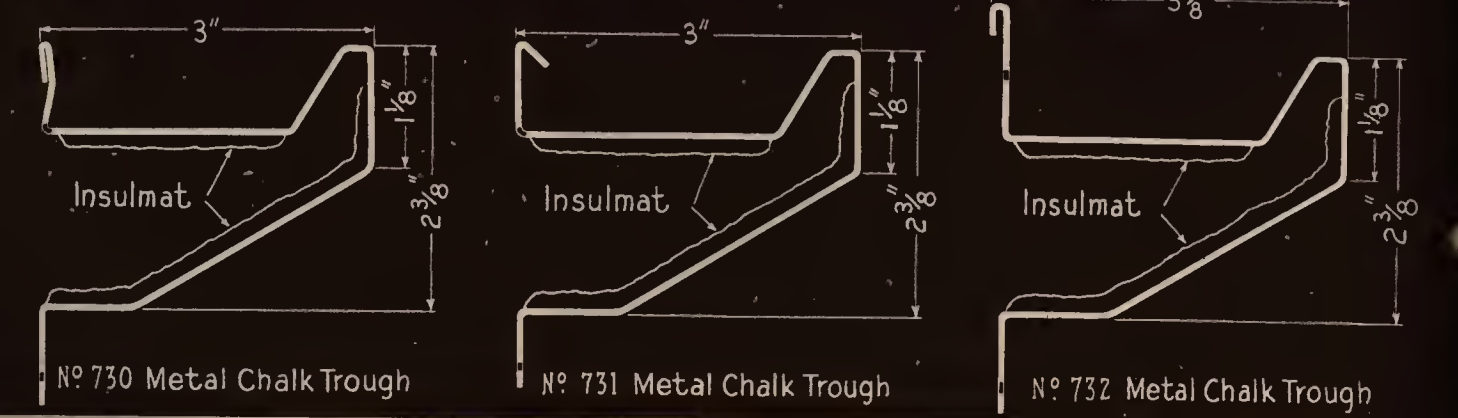
- No. 724-L Corner Fitting.
- No. 724-T "T" Fitting.
- No. 724-X Cross Fitting.
- No. 724-H Right End Stop.
- No. 724-J Left End Stop.
- No. 724-A Inside Corner, Square.
- No. 724-B Outside Corner Square.
- No. 724-C Inside Corner, ¾ Round.
- No. 724-D Outside Corner, ¾ Round.

No. 724-L No. 724-T No. 724-X No. 724-A No. 724-B No. 724-C No. 724-D No. 724-H No. 724-J

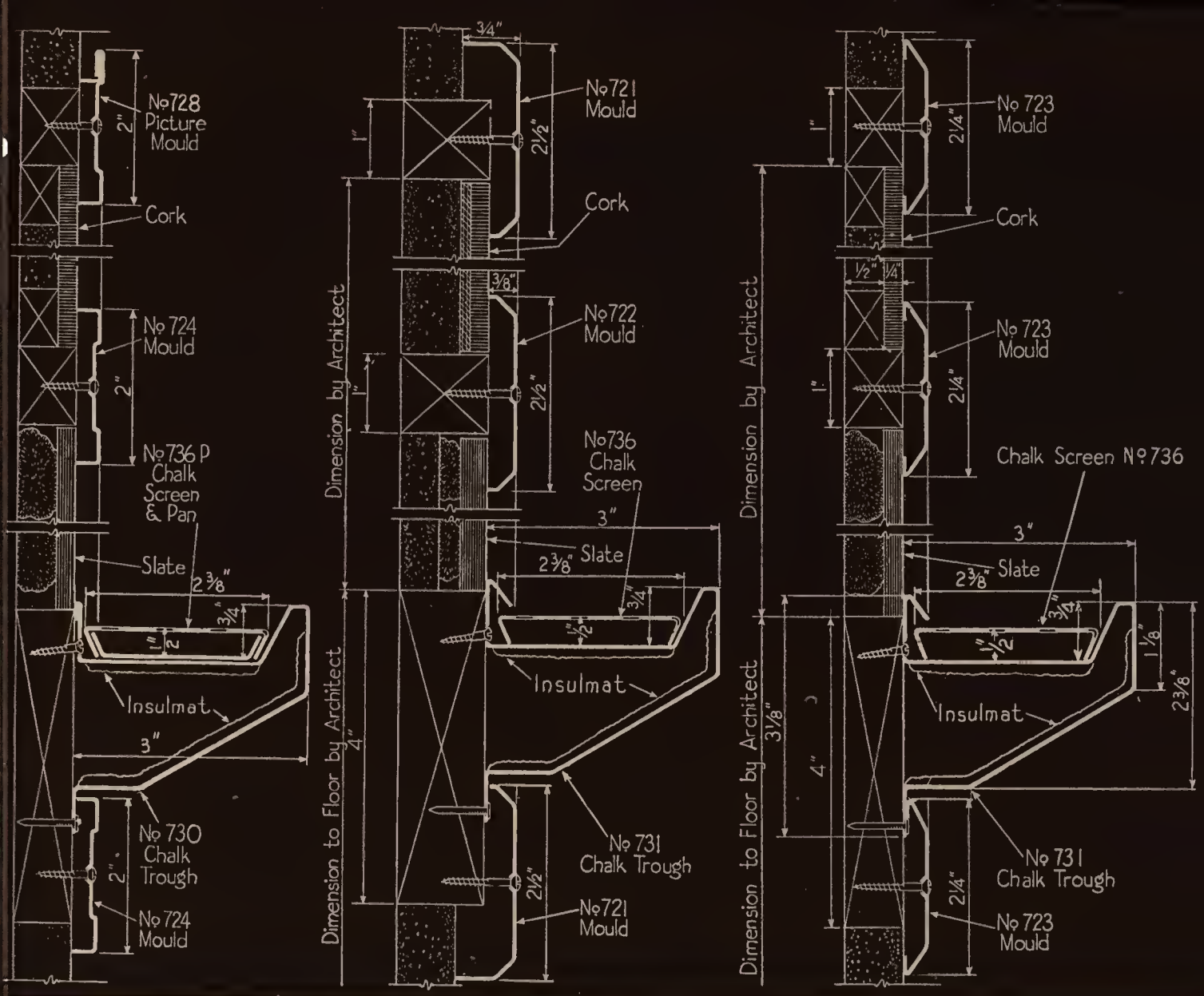
MILCOR CHALK TROUGHS

(WITH INSULMAT SOUND DEADENING)

Nº 730 Nº 731 Nº 732



Nº 730 Metal Chalk Trough Nº 731 Metal Chalk Trough Nº 732 Metal Chalk Trough



MILCOR BLACKBOARD MOULDS, CHALK TROUGHS AND INSERTS

12a
3

BLACKBOARD MOULDS

Nos. 721, 722, 723, 724 and 725

(See opposite page)

Almost any blackboard design can be made with these moulds and the fittings which accompany them.

Nos. 721, 722 and 725 Moulds are mitred on the job. All blackboard moulds made from 20-gauge steel, gray primed, and furnished in standard 10 foot lengths.

CHALK TROUGHS

Nos. 730, 731 and 732

(See opposite page)

All troughs identical in size and contour, and differ only in the top edge detail which is designed to accommodate various assemblies of blackboard, and inserts. (See above.)

Made from 22-gauge galvanized steel, gray primed; furnished with Insulmat sound deadening.

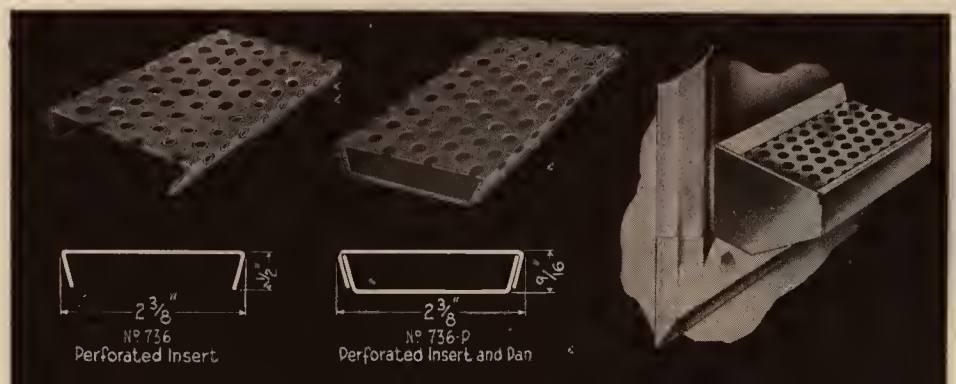
CHALK TROUGH INSERTS

Nos. 736 and 736-P

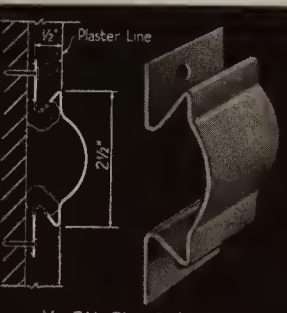
(Illustrated below)

The perforated insert, together with pan, may be used with any of the above types of chalk troughs. Inserts and pans furnished in 3, 4 and 5 foot lengths. Note side illustrations showing assemblies including left end closure No. 732-J.

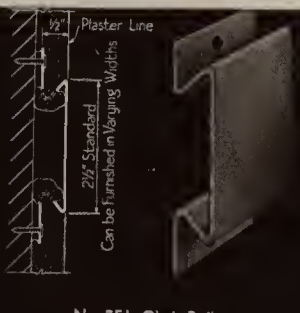
17



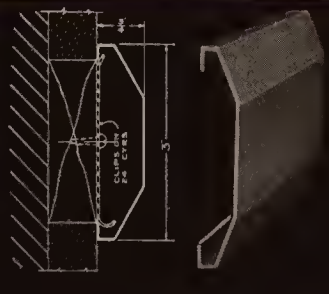
MILCOR CHAIR RAILS



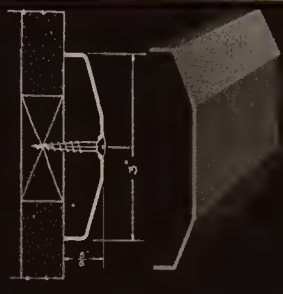
No. 741 Chair Rail



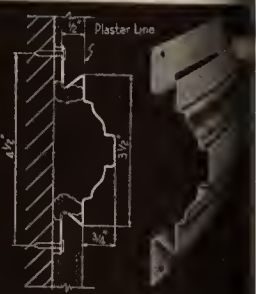
No. 751 Chair Rail



No. 744 Chair Rail



No. 745 Chair Rail



No. 746 Chair Rail

FITTINGS FOR No. 741 CHAIR RAIL

No. 740-A Square. Inside cast iron corner.
No. 740-B Square. Outside cast iron corner.
No. 740-C ¾" radius. Inside cast iron corner.
No. 740-D ¾" radius. Outside cast iron corner.
No. 740-E 1½" radius. Inside cast iron corner.
No. 740-F 1½" radius. Outside cast iron corner.
No. 740-H Right End. End stop, cast iron.
No. 740-J Left End. End stop, cast iron.

740 A

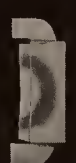
740 B

740 C

740 D

740 E

740 F

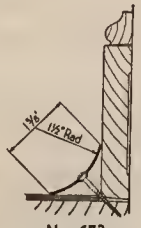

740 H-J

MILCOR CHAIR RAILS—Metal Chair Rails keep furniture from disfiguring the plastered walls and also form the top of a wainscot. They are desirable in schools and public buildings of all kinds. Made from 20 Gauge Steel, gray primed, and furnished in 10 foot lengths. Necessary oval head wood screws are furnished for applied chair rails. Cast fittings for No. 741 Chair Rail are shown. No fittings are furnished for other designs of chair rails which are either mitred on the job or mitred and welded at the factory.

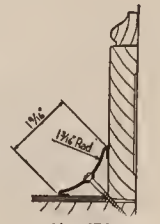
MILCOR COVE MOULDS

Milcor Cove Moulds come in seven types and have many practical purposes, particularly with wood, linoleum, or carpeted floors. All of them are removable and are easily installed. Cast Fittings available for No. 654 and No. 655 Cove Moulds.

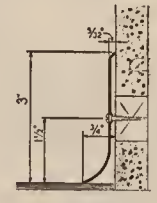
No. 653
¾-in. Radius
Cove Mould



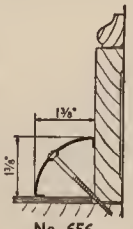
No. 653
1½-in. Radius
Cove Mould



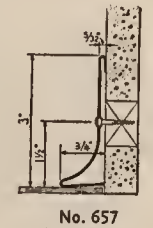
No. 654
Cove Mould



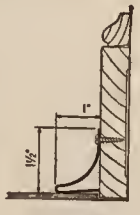
No. 655
Cove Mould



No. 656
Cove Mould



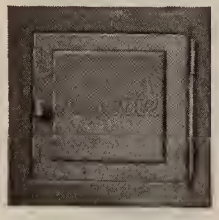
No. 657
Cove Mould



No. 658
Cove Mould

No. 659
Cove Mould

Milcor Clean-Out Door



Stamped from highest grade, heavy copper alloy steel sheets. Hinges are integral with frame and door. Furnished painted.

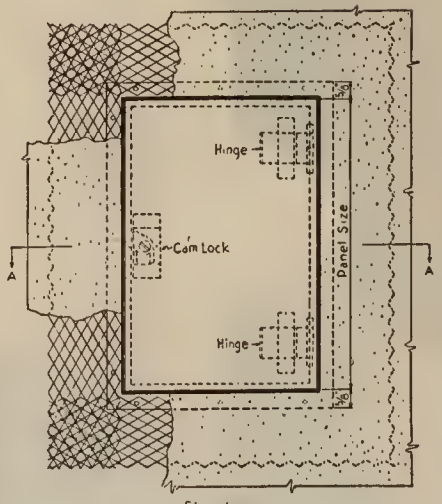
Sizes	Shipping Wt. per Carton of 6
8 x 8 in.	20 lbs.
8 x 10 in.	25 lbs.
10 x 12 in.	30 lbs.

STYLE K—With Expansion Wings for use with Plastered Walls.
STYLE L—Without Expansion Wings for use with Plastered Walls.
STYLE M—For Non-Plastered Walls.

Doors—All doors to be 14 Gauge Steel.
Frames—Frames formed from 16 Gauge Steel.
Paint—All panels furnished with one prime coat of aluminum paint.
Cam Lock—Is standard locking device. A flush-with-door screw head is a feature of the standard cam lock. Cylinder lock with master key can be furnished, if required at slight extra cost. Be sure to specify the cylinder lock if it is desired.

STYLE K

With Expansion Wing.

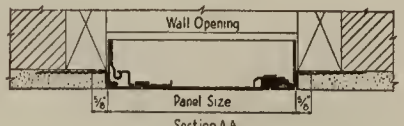


Elevation

Note:
Double Reinforcement of Expanded Metal at Corners, Where Plaster Cracks Often Develop.

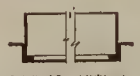
Clip Detail

Cylinder Lock Detail



STYLE L

Without Expansion Wings.


Detail of Panel Without Expanded Metal Wing

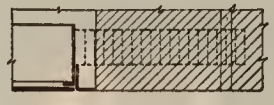
FOR MASONRY CONSTRUCTION

STYLE M

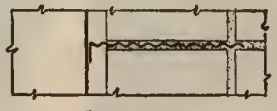
Corrugated anchors are furnished, when required, to facilitate installation of Milcor Access Panels in walls of brick or tile. These anchors may be easily bent or cut to accommodate job conditions.

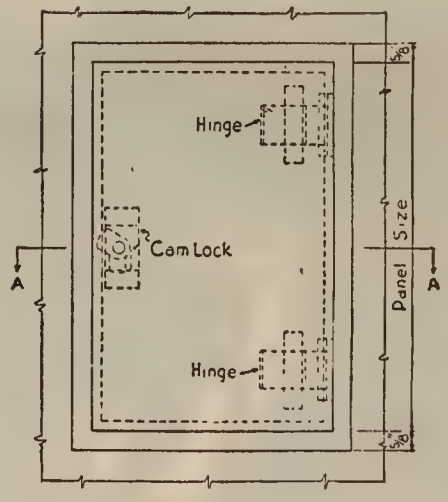
Cylinder Lock Detail

Clip Detail

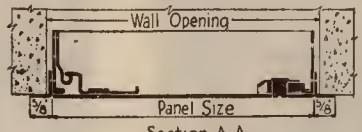

Section

Detail of Panel in Bathroom Tile Wall


Elevation
Corrugated Anchor Detail and Detail of Panel in Brick, stone or Structural Facing Tile



Elevation



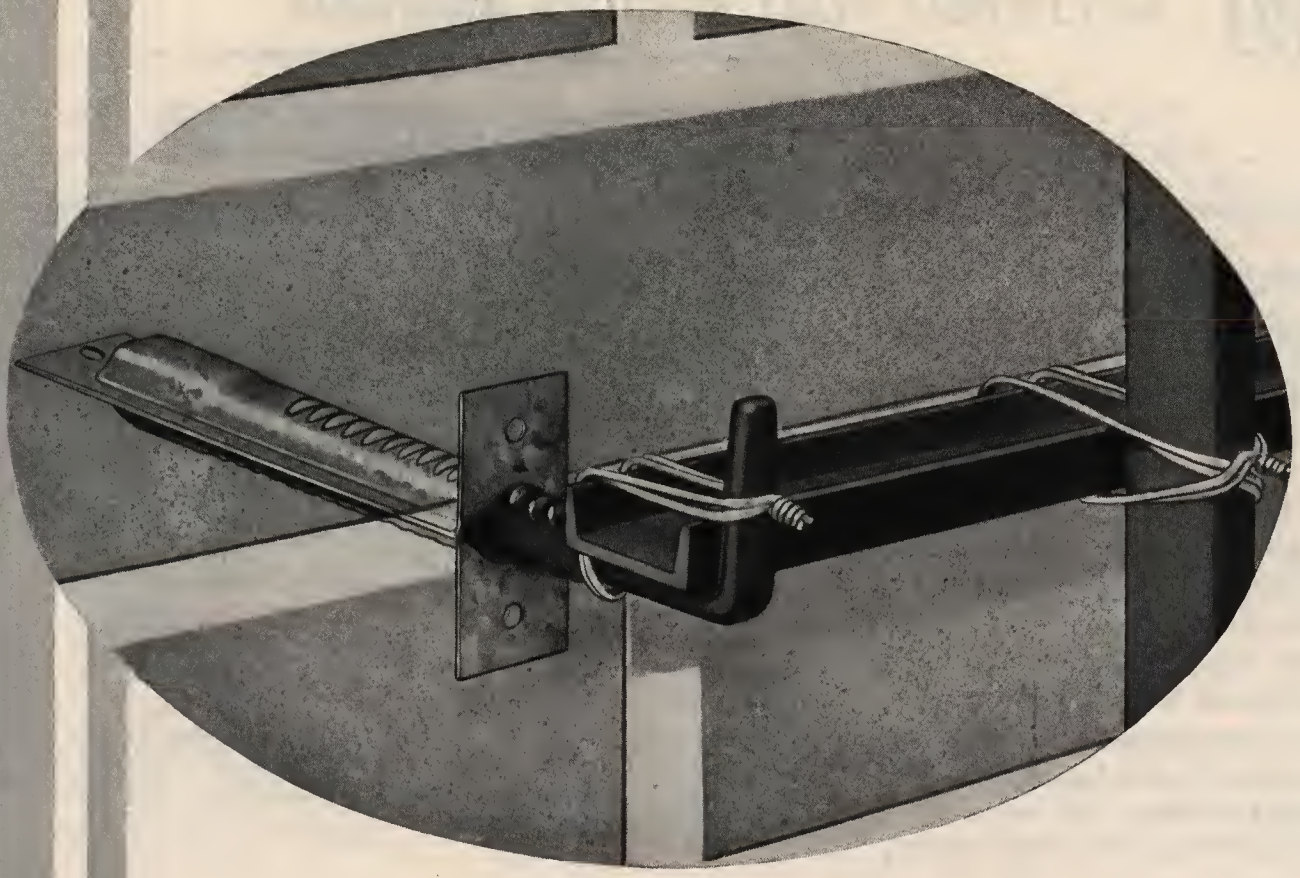
Section A-A

STYLES AND DIMENSIONS

Catalog No.	Wall Opening (inches)	Style "K" Weight (lbs.)	Style "L" or "M" Weight (lbs.)	Catalog No.	Wall Opening (inches)	Style "K" Weight (lbs.)	Style "L" or "M" Weight (lbs.)
8- 8	8 3/8 x 8 3/8	3 1/2	3	20-24	20 3/8 x 24 3/8	18	16 1/2
8-12	8 3/8 x 12 3/8	5	4	20-30	20 3/8 x 30 3/8	24	22
12-12	12 3/8 x 12 3/8	6 1/2	5 1/2	24-24	24 3/8 x 24 3/8	22	20
12-16	12 3/8 x 16 3/8	10 1/2	9	24-30	24 3/8 x 30 3/8	31	28
16-16	16 3/8 x 16 3/8	12	10 1/2	24-36	24 3/8 x 36 3/8	37	34
16-20	16 3/8 x 20 3/8	13	11 1/2				

If hinged type is desired, add the letter "H" to the style number (style K H). If removable type is desired add the letter "R" to style number. Access Doors furnished with or without hinges at same price. Hinged type always furnished unless removable type specified.

MILCOR
MANUAL
FIREPROOF
BUILDING
PRODUCTS



The K-M

Adjustable Wall Furring Anchor

The simplest and most effective method known for aligning and anchoring channel wall furring.

No matter how uneven the wall to be furred, nor how deep the furred space required, K-M Adjustable Wall Furring Anchors with fast axial adjustment can lower your costs and provide permanent shock resistant anchorage, as well as eliminate moisture conducting contact with outside walls.

K-M Building Products Co., Milwaukee 14, Wis.

K-M ADJUSTABLE WALL FURRING ANCHORS

Unique Furring Anchors Assure Alignment, Rigid Support and Dry Walls

K-M was introduced to the building industry simply as a quality product which provided a first class job. Now, over 80% of K-M orders are "repeats" . . . from contractors who found through actual experience, that K-M does its channel wall furring job "to the line" faster and more economically than any other system.

Types

Two types of Channel Brackets are now available: Type 1 for channels and metal lath; and Type 2 for channels and plasterboard. Other materials can be anchored by special designs of brackets.

High Safety Factor

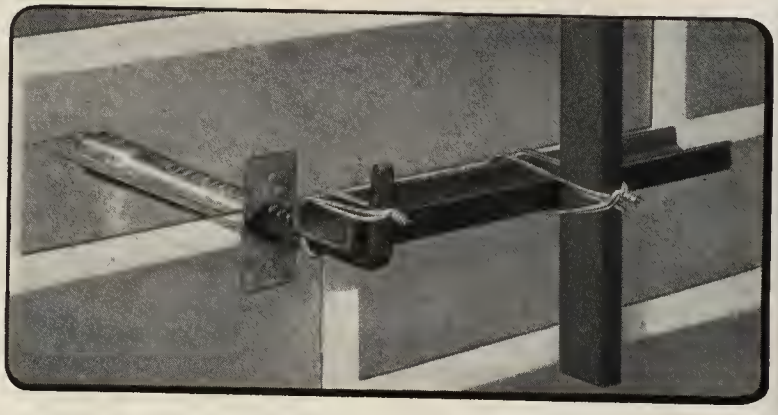
A load of 1,655 pounds is required to pull the socket-bracket combination from concrete, neither part being damaged after such a test.

Special Service and Inquiries

Specialists in wall furring anchorage, whether channel or masonry, we welcome your inquiries concerning your problems.

NOTE:—K-M Type 2 Furring Anchors for plasterboard application are being extensively used in multiple-permanent housing construction. Among the offices specifying K-M on this type of work is the New York City Housing Authority.

FOR METAL LATH APPLICATION

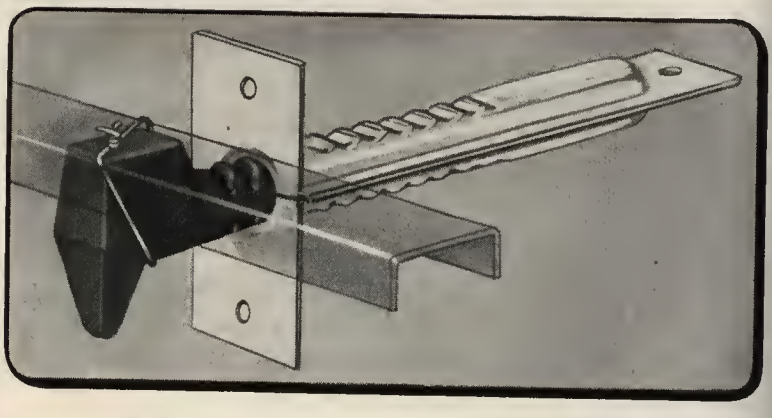


Type 1 • K-M Adjustable Wall Furring Anchors are specifically designed for use with channels and metal lath. Simplicity of installation affords rapid, efficient aligning and anchoring of channel wall furring.

A special feature of the K-M Adjustable Anchor is the simple "twist of the wrist" action of the axial adjustment between the socket and the bracket that furnishes rigid support to channels and provides permanent shock resistant anchorage and assures dry walls.

For Deeper Furring Spaces
A 12 ga. steel extension, galvanized after forming, which simply hooks onto the bracket, is furnished in any length required for deeper furring spaces.

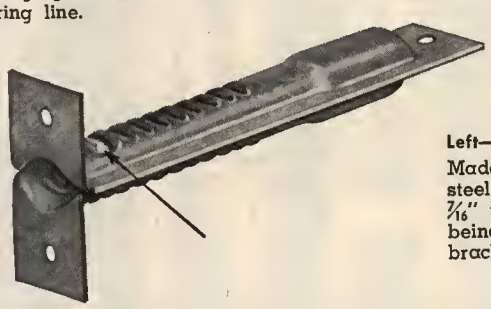
FOR PLASTERBOARD APPLICATION



Type 2 • The weak link in gypsum wall furring has been unsatisfactory anchorage. Until the K-M Type 2 Furring Anchor solved this problem in a simple, practical and economical way, anchorage was hand-fashioned, non-adjustable in taking care of wall irregularity, and did not eliminate moisture conducting contact between wall and plaster.

Component Parts of Type 1, Furring Anchor

Right—Channel Bracket
For channel-metal lath furring. A malleable iron casting having great strength and high corrosion resistance, this bracket is 4½" long and ovular in section for quick axial adjustment in the socket. It provides up to 4" furring space, within 3/32" of the furring line.



Left—Socket
Made of 24 ga. Galvanite sheet steel, the socket is 4" long and 7/16" thick, with the front portion being formed to fit and hold the bracket teeth securely in place.

Specifications

Masonry Work • Furnish and install K-M Wall Furring Sockets as manufactured by the K-M BUILDING PRODUCTS CO., MILWAUKEE, WIS. The spacing of sockets in horizontal rows shall not exceed 4 feet. Vertical spacing of rows shall not exceed 5 feet starting not over 12 inches above the finished floor, and not over 18 inches below the finished ceiling. Provide sockets not over 8 inches from all corners, openings and breaks in the furring. Areas under all wide openings shall have at least two rows of sockets.

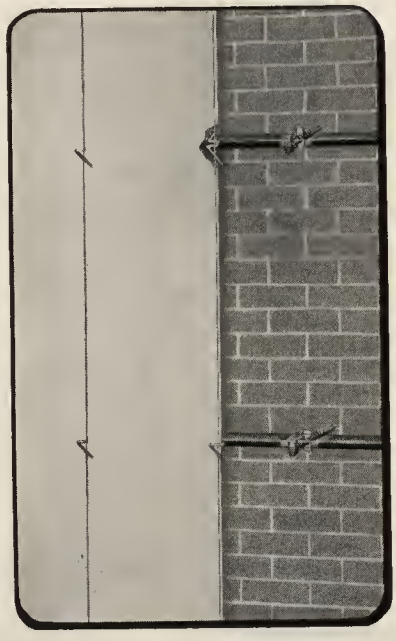
Furring

Wall Furring Anchors • Furnish and install in the wall furring sockets provided by the mason contractor, K-M Channel Brackets as manufactured by the K-M BUILDING PRODUCTS CO., MILWAUKEE, WIS. One inch channels shall be tied to the brackets with 16 ga. galvanized tie wire to serve as a support for the vertical channels.

Spacing for Free Standing Furring • Spacing of sockets in horizontal rows shall not exceed 4 feet and vertical spacing of rows shall not exceed 4 feet, starting not over 4 feet above finished floor nor over 4 feet below finished ceiling.

For Channel Plasterboard Application

A ¾-inch channel is simply tied to the squared head of this malleable iron bracket and the plasterboard is clipped to the channel in the usual manner.

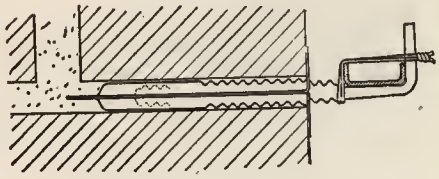


Specifications

Spacing of anchors in horizontal rows shall not exceed 3 feet, and vertical spacing of rows shall not exceed 3 feet, starting not over 3 feet above finished floor, nor over 3 feet below finished ceiling.

Installation of K-M Wall Furring Anchors

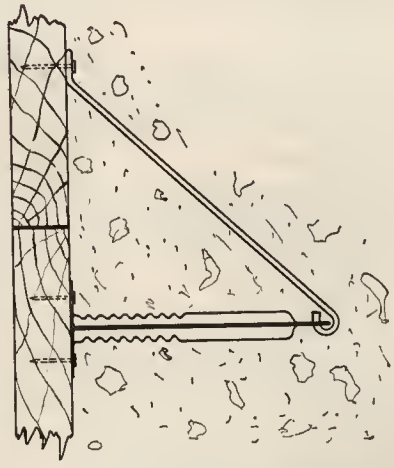
Installation is this simple: The sockets are built into the wall at any desired spacing. The lather inserts the channel bracket flatways into the socket until its angle head touches the furring line. A quarter right turn places the angle head in an upright position, the bracket teeth engaging the socket corrugations. The horizontal channel is then tied in the bracket in the usual manner.



Permanent Anchorage

The highly corrosion resistant channel bracket teeth, and the permanent key provided by the mortar combine to assure permanent anchorage.

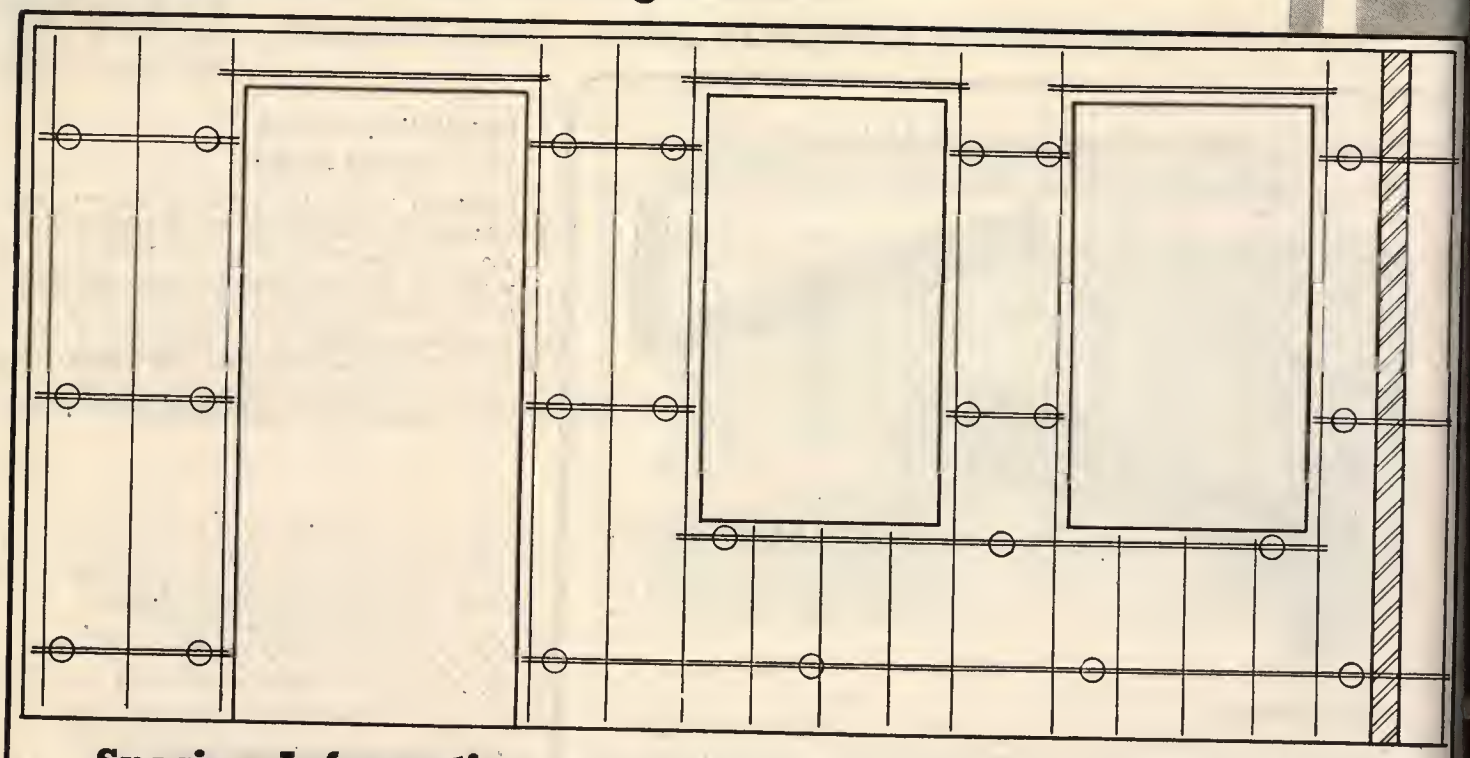
Installation in existing masonry may be made in less than two minutes with proper equipment by drilling a ¾-inch hole 4 inches deep, inserting a dash of cement mortar, and inserting the socket.



For Installation in Concrete

The socket is furnished with the open end taped shut, and with a wire socket support which holds the socket securely in place during the concrete pouring operation.

K-M Adjustable Wall Furring Anchors



Spacing Information Showing spacing for furring anchors for typical job conditions
Circles indicate *K-M Furring Anchors*—Double lines 1-inch channels—Single lines ¾-in. channels.

Any Architect or Construction Engineer whose experience has covered varied building programs over a period of years can offer practical testimony as to the importance of furring exterior walls, and the many advantages it offers. The U. S. Bureau of Standards highly recommends wall furring.

K-M was designed to do the wall furring job speedily, efficiently and economically. The cost of K-M Anchors is invariably offset by labor saved through its use.

Leading authorities on metal lath and plasterboard construction, as well as the manufacturers of these materials, recommend K-M.

Typical Installations

Fresh Meadows Housing Project, Flushing, N. Y.
Voorhees, Walker, Foley & Smith
School, Wyomissing, Pa. *Muhlenberg Brothers*
N. W. U. Technological Institute, Evanston, Ill.
Holabird & Root
Merck & Company Building, Rahway, N. J.
Walter Kidde Constructors, Inc.
Schaeffer Brewing Co. Office, Brooklyn, N. Y.
Eggers & Higgins
Holy Family Hospital, Estherville, Iowa
E. Brielmaier & Sons Co.
Dormitories, Scotlandville, La. *Nolan, Norman & Nolan*
First Presbyterian Church, Houston, Texas
Maurice J. Sullivan
Chancery Residence, Brooklyn, N. Y. *Henry V. Murphy*
St. Joseph's Hospital, Marshfield, Wis.
Hills, Gilbertson & Hayes
Eugene Grace Hall, Bethlehem, Pa. *Visscher & Burley*
Mercy Hospital, Janesville, Wis. *E. Brielmaier & Sons Co.*
Stores, Lincoln, Neb. and Bay City, Mich.
S. S. Kresge Company
Dr. P. T. Robinson Residence, New Orleans, La.
Nolan, Norman & Nolan
Library, Toledo, Ohio *Hayes & Hahn*
St. Francis Hospital Chapel, Wichita, Kan.
P. M. O'Meara & Associates
Dallas, Galveston and Houston, Texas, Telephone Bldgs.
Southwestern Bell Telephone Co.
Maltine Company Building, Morris Plains, N. J.
Walter Kidde Constructors, Inc.
J. N. Adams Department Store, Buffalo, N. Y.
Starrett & Van Vleck
Oberlin College Dormitories, Oberlin, Ohio
Mellenbrook, Foley & Scott
St. Johns Hospital, Tulsa, Okla. *Leon B. Senter*
State Capitol Building Addition, Tallahassee, Fla.
Southern Builders, Inc.
Post Offices, Anchorage, Alaska, Burns, Ore., etc.
Public Buildings Administration
Wisconsin Bell Telephone Buildings, Milwaukee, Racine, etc. *Wm. G. Herbst & Associates*
Prudential Life Insurance Building, Newark, N. J.
Voorhees, Walker, Foley & Smith
St. Francis Hospital, Wichita, Kan. *Forsblom & Parks*
Stamford Bank Building, Stamford, Conn. *Niles & French*
Brown University Library, Providence, R. I.
Coolidge, Shepley, Bulfinch & Abbott

K-M Building Products Co., Milwaukee 14, Wisc.

12a
4a

KNAPP

ARCHITECTURAL DETAIL STANDARD & SPECIAL SHAPES

STEEL

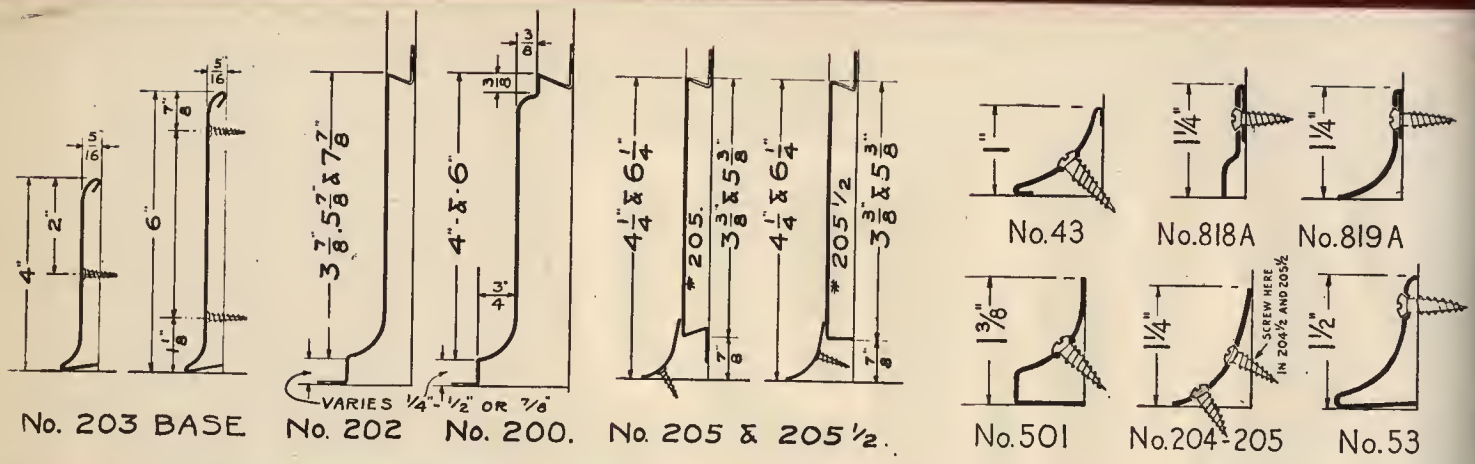
BRONZE

ALUMINUM

STAINLESS

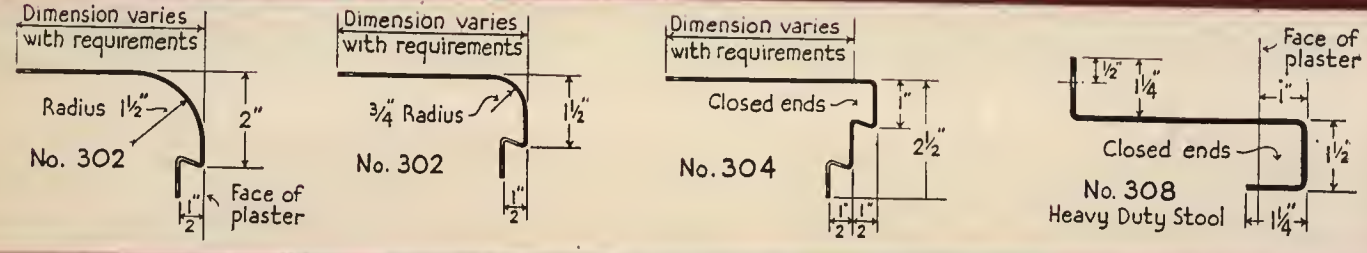
KNAPP BROTHERS MANUFACTURING COMPANY
JOLIET, ILLINOIS

STANDARD BASE AND COVE DETAIL

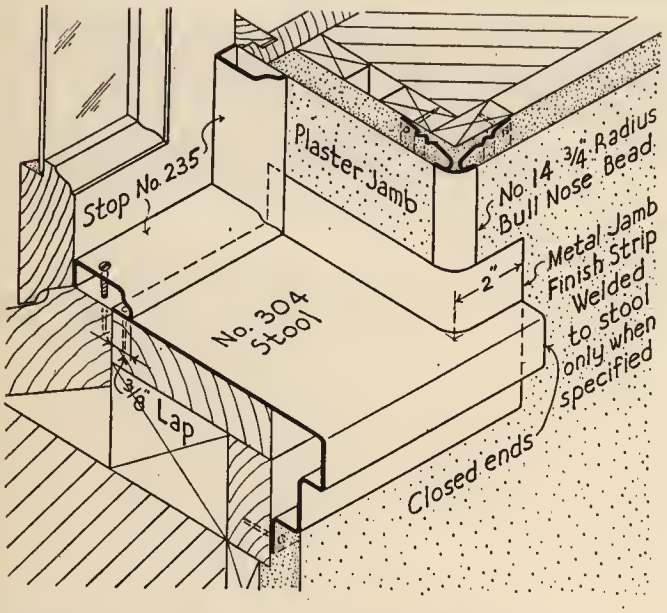


Base detail available in 18 ga. and 20 ga. material. Cast fittings.

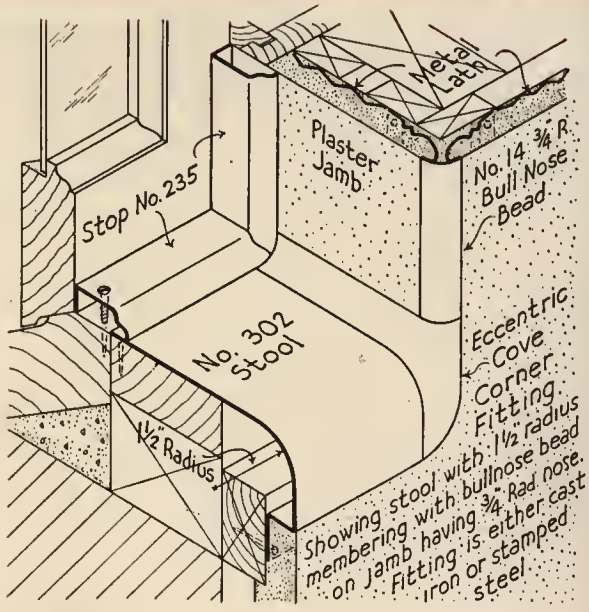
STANDARD WINDOW TRIM AND STOOLS



Window detail available from 20 ga. to 12 ga. Complete closures set up or knock-down. Special shapes, notches, grill openings to your design.



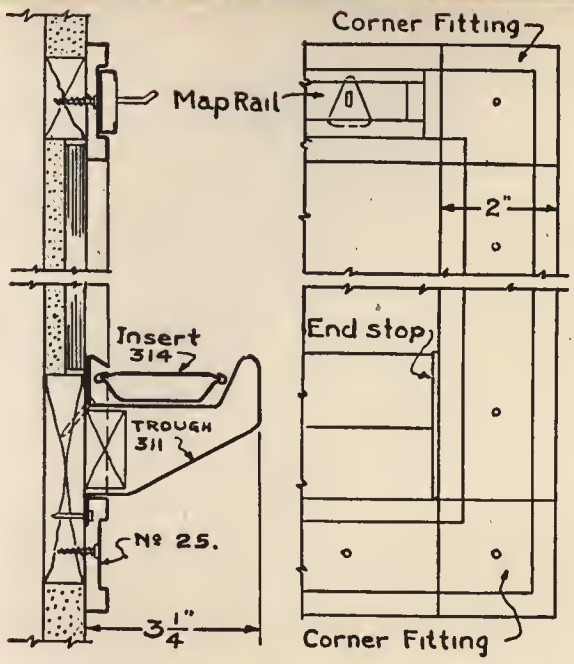
Detail showing sanitary stool No. 302 with cove corner and plaster jamb.



Detail showing metal jamb finish strip with No. 304 stool and No. 14 corner bead.

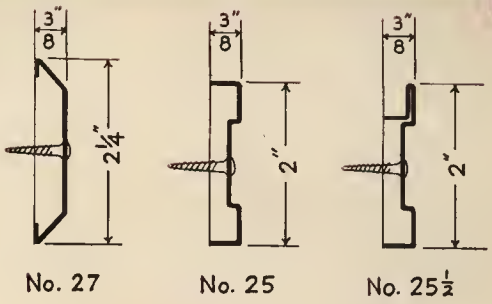
WRITE FOR COMPLETE FULL SIZE DETAILS

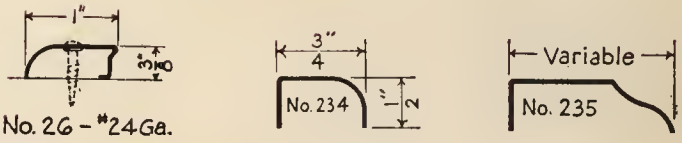
BLACKBOARD DETAIL



Typical construction detail applied blackboard trim.

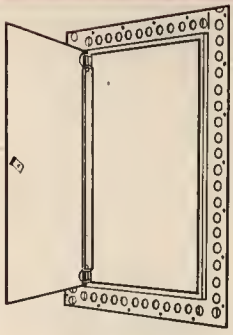
DADO AND STOP MOULDING





Special shapes to your design. Send us your problems.

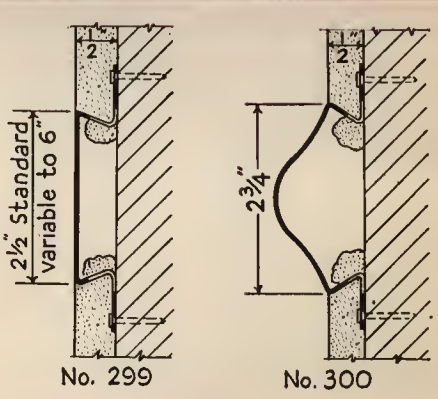
ACCESS DOORS OF SUPERIOR DESIGN



Stock Sizes	Specifications
1 - 8 x 12	Frame—18 ga. Steel
2 - 13 x 17	Door—14 ga. Steel
3 - 15 x 19	Latch—Brass
4 - 15 x 25	Operator—Flush, Slotted
5 - 19 x 25	Hinges—Brass Pin
6 - 19 x 31	Finish—Gray Prime Coat

SPECIAL SIZES ON ORDER

CHAIR RAIL



ARCHITECTURAL DETAIL PRODUCED TO YOUR SPECIFICATIONS

THROUGH KNAPP MODERN FACILITIES AND SERVICE

To architects, engineers and builders, Knapp offers modern, complete facilities and over 40 years of manufacturing "know-how".

Particular attention will be given to any problem you may have. Knapp skill and special equipment are available to fabricate metal detail to meet unusual situations.

Please feel free to call upon us for help on any of your metal fabrication problems.

Full size sectional drawings on standard detail will be furnished gladly upon request.

METAL TRIM FOR PERMANENT FIREPROOF CONSTRUCTION

SPECIALISTS IN METAL

ARCHITECTURAL DETAIL

TO YOUR® DESIGN

Since 1905

Knapp
METAL TRIM

KNAPP BROTHERS MANUFACTURING COMPANY
JOLIET, ILLINOIS

Penmetal lath and plastering accessories

12a
5

PENMETAL Expanded Metal for Industrial purposes

the standard for over three-quarters of a century

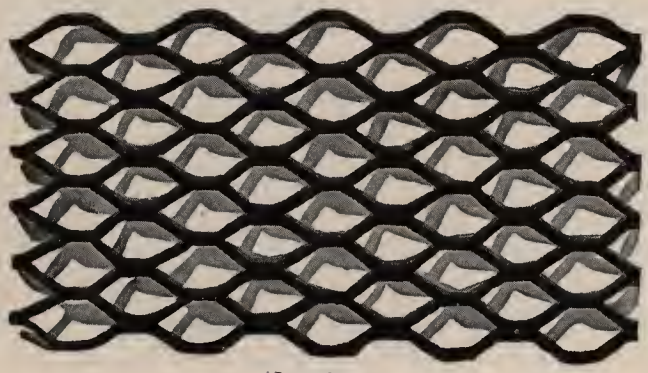
Penn Metal Company, Inc., established in 1869, has been engaged continuously in the fabrication of steel products for more than 75 years. Since the invention of Expanded Metal Lath and Expanded Metal we have played a prominent part in the many developments and improvements that have taken place in this industry. Expanded Metal materials and the various accessories used with them are now our principal products. WE ARE SPECIALISTS IN THEIR MANUFACTURE AND USE. As specialists, we offer not only materials which represent the latest developments and improvements from a production standpoint, but also our long experience and knowledge as to their application in modern building construction and industrial work.

Penn Metal Company, Inc.

GENERAL SALES OFFICES: 205 East 42nd St., New York 17, N. Y. FACTORY: Parkersburg, W. Va.
DISTRICT SALES OFFICES:

Boston, Mass.	Philadelphia, Pa.	Detroit, Mich.	Chicago, Ill.
New York, N. Y.	Indianapolis, Ind.	Parkersburg, W. Va.	Los Angeles, Cal.
San Francisco, Cal.		Dallas, Tex.	Seattle, Wash.

MESHTEX • a small diamond mesh type of expanded metal lath



(Actual size)

painted lath made from copper alloy

available in:

2.5# sq. yd. painted
3.4# sq. yd. painted
3.4# sq. yd. galvanized
sheets 27" x 96" (2 sq. yds.)
packed 10 sheets (20 sq. yds.) to a bundle
for spacings of supports for MESHTEX, see table, page 3.

MESHTEX is a general purpose lath, ideal as a plaster base in practically all kinds of construction—walls, solid partitions, ceilings; fireproofing of steel beams and columns, curved surfaces and ornamental plaster work.

MESHTEX provides maximum (and uniform) reinforcement with a minimum weight of steel.

The strands are turned to induce free flow of plaster without cutting the key.

The openings of MESHTEX are just large enough for perfect keying of scratch coat, with minimum labor and material and maximum rigidity. Enough plaster keys on reverse side of the lath to cover the strands, thus forming—not a background—but a *reinforcement for the plaster.*

DURABOND • the flat rib type of metal lath

made from copper alloy

available in:

2.75# sq. yd. painted
3.4# sq. yd. painted
sheets 27" x 96" (2 sq. yds.)
packed 10 sheets (20 sq. yds.) to a bundle

ribs 1/8" deep, 1 1/8" on center
center rib 1/2" from bracing rib

for spacings of supports for DURABOND see table, page 3.

(Actual Size)

DURABOND is designed principally for wood construction, for both ceilings and walls. Its remarkable rigidity permits wider spacing of the supports.

The ribs form a ground for the trowel to work on, which prevents waste by permitting just enough plaster to flow through the openings to form a key. No leveling off is necessary when the brown coat is applied. The scratch coat hardens sufficiently so that the brown coat can be applied without removing the staging—thus lowering the labor cost.

DURABOND is unexcelled as a *plaster-saving lath* because of its rigidity and the *width* of the ribs.

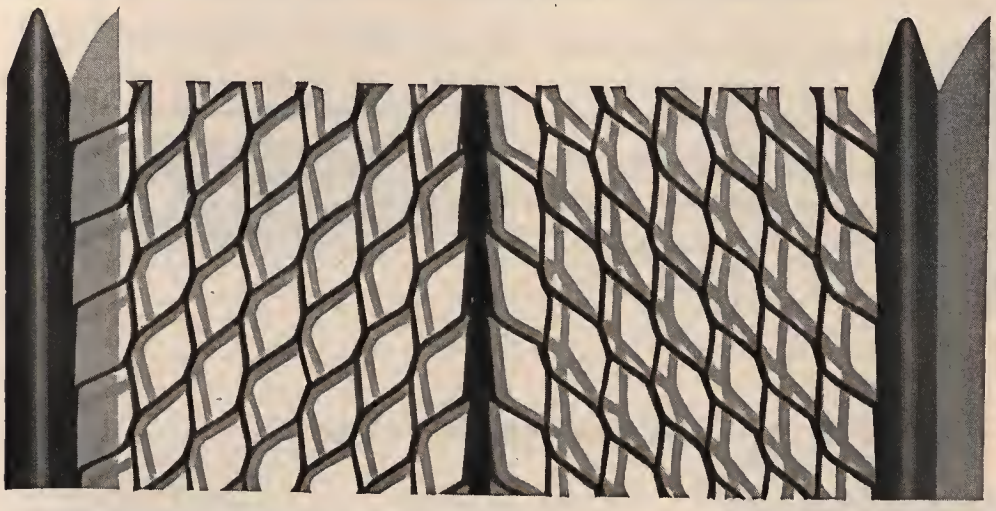
Its rigidity prevents sagging and gives an even, firm surface for plastering.

The extra wide ribs present a maximum surface of flat metal (more than one-half of the total area) for the economical use of plaster.

The flat, smooth surface of DURABOND makes ideal nailing; stapling is not necessary.

DURABOND sheets "nest" together when bundled, insuring protection in transportation.

MASTERIB • a 3/8" rib lath of exceptional rigidity



made from copper alloy

available in:

3.4# sq. yd. painted
4.0# sq. yd. painted
sheets 27" x 96" (2 sq. yds.)
packed 10 sheets (20 sq. yds.)
to a bundle

ribs 3/8" deep, 4½" on center
for spacings of supports for MASTERIB, for plaster ceilings and walls, see table below.

(Actual size)

MASTERIB for Ceilings and Partitions, for Brick or Terra Cotta Walls and for Exteriors

3.4# MASTERIB is used as a base for plaster on ceilings and on straight-away work on partitions and exterior walls where air space is needed. In such construction large savings can be realized in material and labor because of the considerably wider spacing between supports and elimination of cross-furring.

MASTERIB for Floors

MASTERIB is used as a reinforcement and permanent centering for concrete floors with steel joists and beams; also for precast concrete or gypsum slabs. Poured structural slabs of concrete, gypsum or other similar material should not be less than 2" thick, poured on MASTERIB for spans not exceeding 24". Use temporary supports for longer spans.

Dead Load: Concrete floors, 12 pounds per inch of thickness per sq. ft. of floor area.
Wood floor finish not less than 3 pounds per sq. ft. of floor area.

Distinctive Features of PENMETAL Lath:

1. Each sheet is painted singly and dried by infra-red rays, assuring a uniform and perfectly dried coating and proper protection until it reaches the plastering stage.

2. Each sheet is trimmed square at each end separately, sheet by sheet. When metal lath is trimmed in bundles the top and bottom sheets are distorted and bent on the edges, causing an impediment to the plasterer's trowel.

3. Size of sheets (27"x 96") gives an even 2 sq. yds. per sheet —(20 sq. yds. per bundle)—eliminating troublesome fractions and providing greater speed and accuracy in figuring, invoicing and stocktaking.

The ribs on MASTERIB are U-shaped—no flanges. The material is expanded right up *to the edges of the ribs,* giving a perfect key and preventing cracks in plaster due to different co-efficient of expansion between mesh and flanges.

When MASTERIB is used on walls and ceilings as a self-furring lath, the top of the rib should be placed against the supports.

LOADING TABLE FOR MASTERIB

SAFE TOTAL LOADS FOR ROOFS AND FLOORS IN LBS. PER SQ. FT.

Thickness of Concrete	Wgt. of Lath Sq. Yd.	Wgt. of Lath Sq. Ft.	Span in Inches			
			12	16	19	24
2"	3.4#	.378#	950	536	380	238
Wgt.—24 lbs. per sq. ft.	4.0#	.445#	1090	613	433	271
2½"	3.4#	.378#	1200	675	479	300
Wgt.—30 lbs. per sq. ft.	4.0#	.445#	1360	766	544	340
3"	3.4#	.378#	1450	815	578	362
Wgt.—36 lbs. per sq. ft.	4.0#	.445#	1650	930	625	412

MAXIMUM SPACING OF SUPPORTS FOR METAL LATH (IN INCHES)

Type of Metal Lath	Wgt. per Sq. Yd.	WALLS			CEILINGS	
		Wood Studs	2" Solid Partitions	Steel Studs, etc.	Concrete or Wood Joists	Suspended on Channels and Bar Joists
MESHTEX (Diamond Mesh).....	2.5#	16	16	12	..	..
	3.4#	16	16	16	16	13½
DURABOND (Flat Rib).....	2.75#	16	16	16	16	12
	3.4#	19	24	19	19	19
MASTERIB (3/8" Rib).....	3.4#	24	24	24	24	19
	4.0#	24	24	24	24	24

NOTE: Standard spacings of supports are 12, 13½, 16, 19 and 24 inches center to center, and metal lath may be used on any spacing up to the maximum shown for each type and weight of metal lath.

STUCCO MESH

Size of diamond, 1¼" x 3"

A comparatively heavy steel reinforcing mesh, popular for stucco work, especially in cement gun construction.

sheets 27" x 96" (2 sq. yds.)

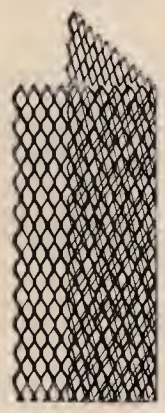
packed 10 sheets (20 sq. yds.) to a bundle

1.8# No. 18 gauge, painted

3.6# No. 16 gauge, painted

Furring Nails frequently used in conjunction with stucco mesh are available in boxes containing 7 lbs. (approximately 850 nails).

CORNERITE and STRIPITE • made from copper alloy



Cornerite

A narrow strip of 2.5# Painted MESHTEX, 8 feet long, bent at right angles — used for reinforcing inside corners of walls and partitions in wood, tile or plasterblock construction.

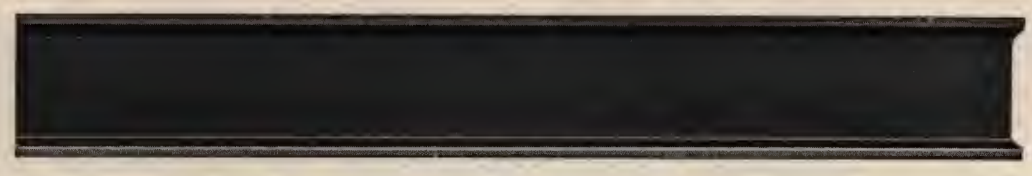
Width of Flanges	*Lin. Ft. per Package*	*Wgt. per 1000 Lin. Ft.*
2" x 2"	600	100#
3" x 3"	600	145#

Stripite

Made from 2.5# Painted MESHTEX, 3 inches wide by 8 feet long — used extensively in reinforcing joints in plasterboard construction.

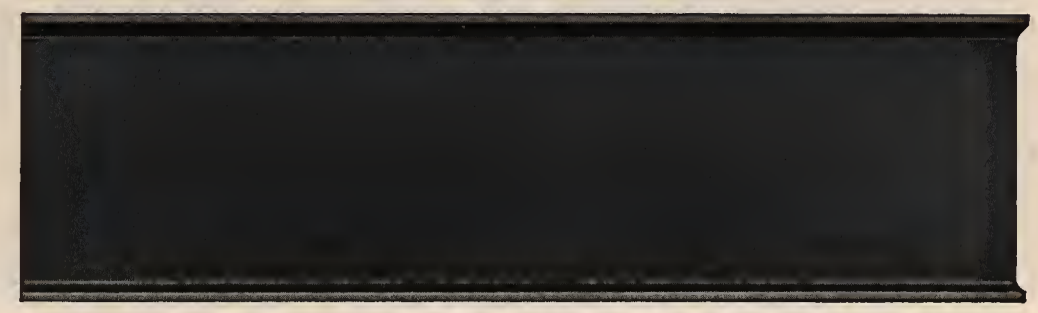
Lin. Ft. per Package	*Wgt. per 1000 Lin. Ft.*
600	75#

COLD ROLLED CHANNEL IRON



¾" COLD ROLLED CHANNEL

(Actual size)



1½" COLD ROLLED CHANNEL

(Actual size)

Size	Wgt. per M Lin. Ft.	Stock Lengths	Pcs. per Bundle
¾"	300 lbs.	16', 20'	20
1½"	475 lbs.	16', 20'	10

Channel Iron furnished only in the painted.

METAL LATH ACCESSORIES • 26 U. S. standard gauge, tight-coat galvanized

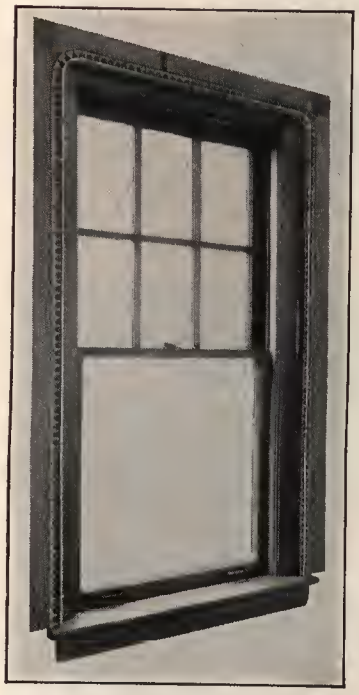
STANDARD WING BEAD — the most widely used type of corner bead

for straight, arch and window work

1⅜" flange
8, 9, 10, 12
foot lengths

PENMETAL Corner Bead is an outside corner reinforcement and ground for plaster, making it easy to line up a perfect corner.

The oblong openings, 1" center to center, form a perfect key for plaster, reinforcing the nose and strengthening the corner.



PENMETAL Bead can be used for ARCH WORK — at doorways and around windows. Its use around windows is much more economical than wood or metal trim and makes a more attractive finish.

To join the bead, cut off the head of an 8D nail and insert in the nose of the bead.

FOR ARCHES

To form an arch no mechanical bender is necessary — all the work can easily be done with tinner's shears. The openings of the bead are placed in pairs to facilitate the snipping of the wing and the bending of the bead by hand to the desired radius. The bead will not break or buckle at the nose when bent but will form a perfect radius.

2½" WIDE FLANGE CORNER BEAD

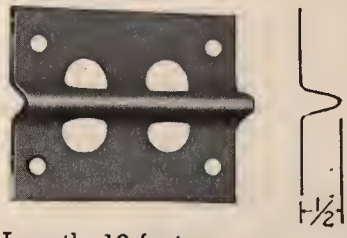
Standard lengths: 8, 9, 10 and 12 feet.

STANDARD BULL NOSE CORNER BEAD

¾" radius
1⅜" flange

Standard lengths: 7, 8, 9, 10 and 12 feet.

½" GROUNDS STANDARD BASE SCREED



Length: 10 feet.

2½" FLANGE EXPANSION BEAD

Standard Lengths: 8, 9, 10 and 12 Feet.

EXPANSION BULL NOSE BEAD NO. 10
¾" Radius; 2½" Flange

Standard Lengths: 7, 8, 9, 10 and 12 Feet.

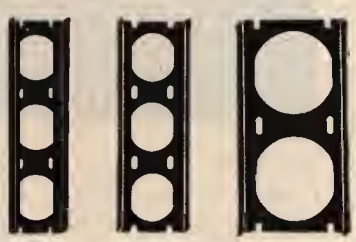
PENMETAL STEEL STUDS FOR NON-BEARING HOLLOW PARTITIONS

PENMETAL Steel Studs offer the following advantages: (1) sound resistance; (2) concealment of unsightly pipes and conduits, saving in expense of cutting chases; (3) economical construction — PENMETAL Hollow Partition weighs when plastered 16 to 20 lbs. per sq. ft., thus permitting economical structural design with maximum strength and less cleaning up after completion; (4) structural rigidity to resist lateral earth movements, as Studs are stronger than tile or blocks.

PENMETAL Hollow Partition Steel Studs — punched with openings for pipe and conduits ranging from 3¼" to 6" in width — are preferably spaced 36" to 48" apart with ¾" steel furring channels spaced approximately 16" between the Studs to permit rapid and practical insertion of steel pipes between the studding. Studding spaced at approximately 16" has been found impractical as more cutting would be necessary, resulting in weakening the structual strength and adding to over-all costs.

PENMETAL Steel Stud Construction with Track and Shoes.

(Ceiling construction is reverse of floor detail.) Note large holes to permit bolting to floor. Use of Track is being superseded by construction shown below.



3¼" 4" 6"

PENMETAL STANDARD STEEL STUDS

(FURNISHED PAINTED ONLY) are designed with the same number of openings in every lineal foot of length; i. e., the 6" size has two openings per foot of length; the 4" and 3¼" sizes have three openings per foot Shoes (2½" long) for 3¼" and 4" studs are interchangeable. Shoes (5" long) furnished for 6" studs. Standard length of track: 10 feet. Studs (all widths): 8, 9, 10, 12, 13, 14, 16, 18 and 20 feet.

SAFE TOTAL LOAD IN POUNDS PER LINEAL FOOT OF STUD

Simple Span — Uniform Load
Working Stress 15,000 Pounds per Square Inch

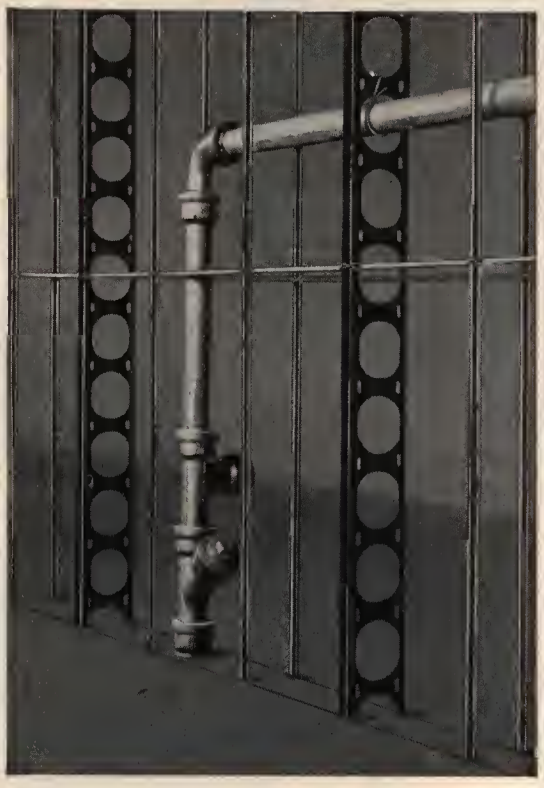
Clear Span in Ft.	Depth in Inches			Clear Span in Ft.	Depth in Inches		
	3¼"	4"	6"		3¼"	4"	6"
				12	12	16	34
4	110	..	..	13	10	13	29
5	70	92	..	14	..	11	25
6	49	64	136	15	..	10	21
7	36	47	100	16	..	..	19
8	27	36	76	17	..	..	17
9	21	28	60	18	..	..	15
10	17	23	49	19	..	..	13
11	14	19	40	20	..	..	12

Studs must be braced laterally in order to support tabular loads.

Safe total load for any stress is in direct proportion to that stress. Problem: What would be safe load per foot with stress of 18,000 lbs. per sq. in., span 12', 6" stud? Answer: Tabular value is 34; therefore, 34 × 18,000/15,000 = 41 lbs. per lin. ft.

Spacing in inches equals tabular load × 12/load per sq. ft. Problem: What spacing is required for 4" stud to support 27 lbs. per sq. ft., span 8'? Answer: Tabular value is 36; therefore, 36 × 12/27 = 16" on centers.

Load per square foot equals tabular load × 12/spacing in inches. Problem: What safe load will 3¼" studs support if spaced 24" on centers, span 6'? Answer: Tabular value is 49; therefore, 49 × 12/24 = 24 lbs. per sq. ft.



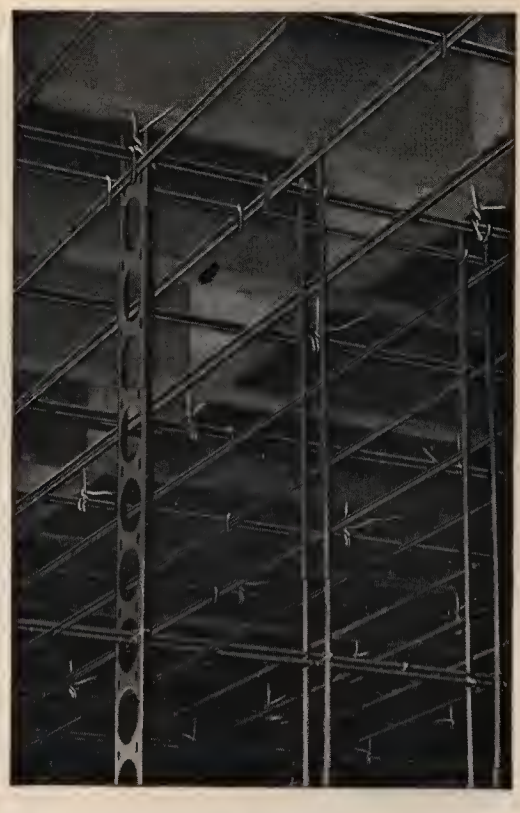
PENMETAL Steel Stud Construction without Track and Shoes.

This type of Steel Stud construction gives additional strength by anchoring each Stud in concrete floor and ceiling, and economy in construction by omission of Track. Nailing at top and bottom, tying on Shoes and other time-consuming operations are eliminated.

PENMETAL STEEL STUDS

With the conduit and service piping in place, PENMETAL Hollow Partition Stud is ready for application of Metal Lath. It is better to start lathing at top of partition so that any special cutting to width will be left for the portion near floor, where it is more easily done than on scaffold. To facilitate plastering, upper edge of lower sheet should lap over lower edge of upper. With lathing on upper part of partition completed, scaffold can be moved to another partition while tying gang is finishing the bottom lathing.

Metal Lath is applied on each side of Studs. The exposed surface of Lath is covered with slightly less than 3/4" of plaster, making finished thickness of partition approximately 1 1/4" wider than the width of PENMETAL Stud used.

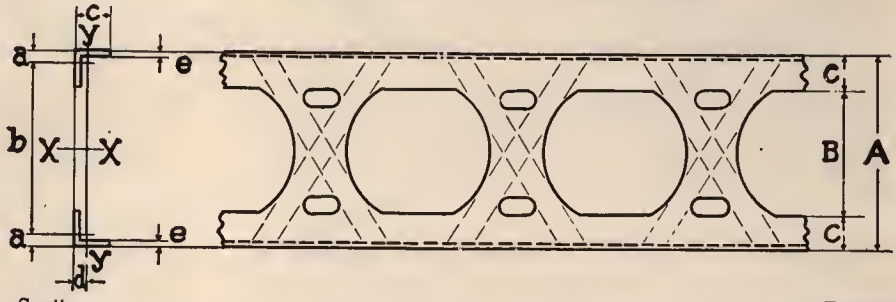


Construction Details of Suspended Ceiling (no Track necessary)

SPECIFICATIONS

1. Partitions shall be of PENMETAL 16 gauge Steel Studs Painted, finished on both sides with Metal Lath and plaster as follows:
2. STUDS shall be fastened to floor and ceiling in manner approved by the architect. Where Studs are set into holes in the concrete floor they shall be set in not less than 1/2". Where no suspended ceiling is used Studs shall be attached to concrete floor above by use of PENMETAL Track and Shoes. Where suspended ceilings of Channel Iron and Metal Lath are used, Studs shall be securely wired to a special channel, which shall be fastened to the suspended ceiling along the line of the partition, and for this purpose the Studs shall extend above the suspended ceiling.
3. PENMETAL Steel Studs shall be spaced 48" on center, with 3/4" PENMETAL Cold Rolled Channels spaced 16" on center between the Studs in manner shown on the detail drawing; Cold Rolled Channels to be securely fastened to horizontal Channels which are spaced vertically every 3 or 4 feet between floor and ceiling and securely wired to the Studs.
4. Metal Lath to be MESHTEX, weighing 3.4# per sq. yd.; size of sheet, 27" x 96"; each sheet to be resquared singly, painted one sheet at a time, and oven-baked dry.
5. MESHTEX to be lapped 1" on ends and 1/2" on sides and wired to studding with 18 gauge galvanized annealed tie wire.
6. CORNERITE to have 3" legs where partition joins masonry or concrete on walls and ceilings.
7. WOOD GROUNDS of proper thickness shall be secured to partition by means of wood nailing blocks.

PROPERTIES OF PENMETAL STUDS



Section Elevation

A	3 1/4"	4"	6"	A
B	1.7500	2.5000	4.5000	B
C	0.7500	0.7500	0.7500	C
a	0.2500	0.2500	0.2040	a
b	2.7500	3.5000	5.5920	b
c	0.5000	0.5000	0.8125	c
d	0.1240	0.1240	0.2350	d
e	0.0625	0.0625	0.0625	e

	3 1/4"	4"	6"
Area Square Inches.	0.1480	0.1480	0.1870
Axis x-x			
Moment of Inertia.	0.2880	0.4630	1.4700
Section Modulus..	0.1770	0.2310	0.4900
Radius of Gyration.	1.4000	1.7700	2.8000
Axis y-y			
Moment of Inertia.	0.0030	0.0030	0.0120
Section Modulus..	0.0080	0.0080	0.0208
Radius of Gyration.	0.1430	0.1430	0.2530

Note: All dimensions are in inches.

8. METAL BASE, PICTURE MOULDING and CORNER BEADS to be wired to partition after it is in place.
9. DOOR BUCKS of wood or metal to be out-to-out dimensions to allow casing to cover joint between buck and plaster by at least 1".

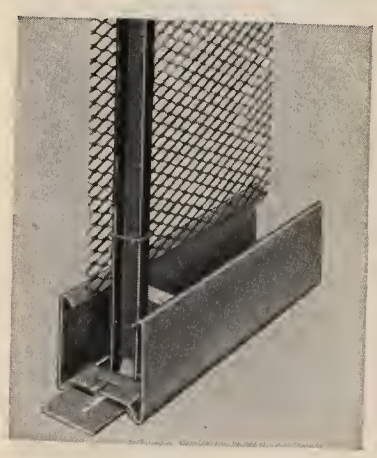
ALTERNATE SPECIFICATIONS

(For use with Track on Floor and Ceiling)

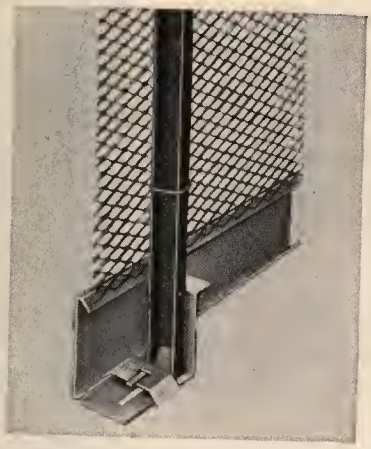
Substitute in above specifications for clauses (2) and (3) the following:

2. TRACK to be securely attached to ceiling and floor (by means of 18 gauge galvanized annealed wire or concrete nails) and leveled. Studs and Shoes to be attached to Track with double strands of 18 gauge galvanized annealed tie wire.
3. STUDS to be spaced 16" on center with 3.4# MESHTEX. (If 2.75# DURABOND used, space 16" on center; if 3.4# DURABOND used, space 19" on center; if 3.4# MASTERIB used, space 24" on center.)

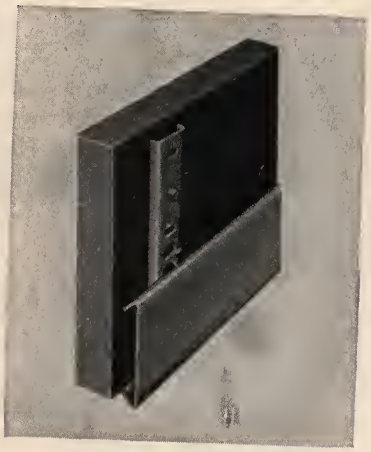
PENMETAL BASE—TYPES OF ASSEMBLY



Assembly A



Assembly B



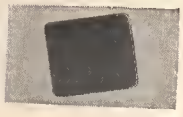
Assembly C

No. 150 Ceiling Runner
20 Ga. Galvanized
(Prongs 4" O.C.)

ASSEMBLY A—For 2" Solid Partitions—Metal Base No. 175 with Clip No. 176 and Spacing Clip No. 177.

ASSEMBLY B—For Furred Walls—Metal Base No. 175 with Clip No. 178 and Spacing Clip No. 179.

ASSEMBLY C—For Masonry Walls—Metal Base No. 175 with No. 180 Clip.



No. 130 Splice Plate
20 Ga. Galvanized

Base No. 175 is furnished 2½" or 3" high in 18 or 20 gauge galvanized steel painted light grey after forming. Splice Plates furnished one each 10'. Clips and Spacers furnished for 16" o.c.

PENMETAL STEEL BASE is furnished in separate pieces for the two sides, to be put together on the job, under the job conditions. All mitres are made quickly and easily on the job.

PENMETAL STEEL BASE is adapted to every type of wall where base is required. For masonry walls (terra cotta, brick, etc.) it is held in place at both top and bottom and is therefore absolutely immovable.

The specially-designed clips line up the partition, which is then ready to receive the Studs and Base without any further preparation.

The vertical channels require no lacing prior to lathing. They are fitted into the projecting lugs of the Ceiling Runner and dropped into the slot in the clip. No wood grounds are needed with PENMETAL BASE—the base itself forms the grounds.

SPECIFICATIONS for 2" Solid Metal Lath and Plaster Partitions

PARTITIONS to be of PENMETAL design, consisting of the following members:

STUDS to be ¾" Cold Rolled or Hot Rolled Channel, painted, weighing not less than 300 lbs. per 1,000 lin. ft. and spaced 16" on center for either 2.5# or 3.4# MESHTEX.

Stock lengths—16' and 20'. Can be made any length to order for large quantity job.

METAL LATH—MESHTEX (Diamond Mesh Lath), weighing 2.5# or 3.4# per sq. yd.: size of sheets, 27"x96" each; sheets to be resquared one at a time (not in bundle lots) and free from ragged edges or unevenness; each sheet to be painted singly (not in bundle lots) with paint baked on by infra-red ray process.

Lath to be lapped 1" on the ends, ½" on the sides and wired to the Channel Iron Studs with 18 gauge galvanized annealed tie wire; sheets also to be wired between the Studs.

METAL BASE No. 175 to be 18 or 20 gauge galvanized steel and coated both sides with a light grey paint; length of base, 10'; height of base, 2½" or 3".

MITRES—Prefabricated Mitres not required. Mitres to be made on the job by notching the Base at top and bottom and bending the Base to required angle.

SPLICE PLATES to be made of 20 gauge galvanized steel, not painted; all butting ends of Base to be joined with Splice Plate.

CLIPS Nos. 176, 178 and 180 and Spacing Clips Nos. 177 and 179 to be 20 gauge galvanized steel, not painted.

CEILING RUNNER No. 150 to be 20 gauge galvanized steel, 10' long; to be securely attached to ceiling by means of nails and leveled.

GROUNDS—No wood grounds are necessary when PENMETAL BASE No. 175 is used.

CORNERITE to have 3" legs where partition joins masonry or concrete on walls and ceilings.

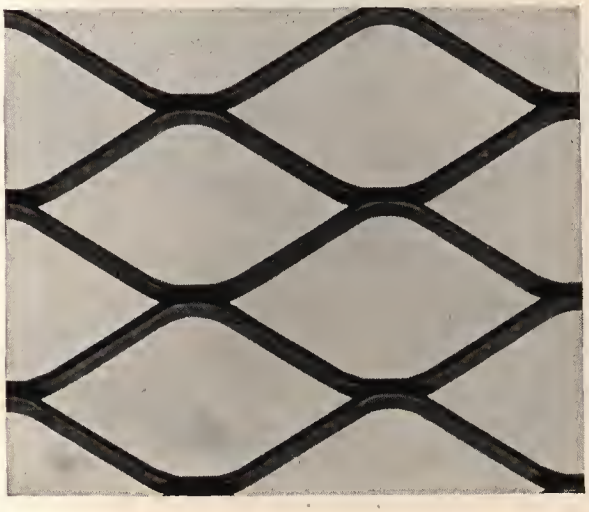
METAL PICTURE MOULDING AND CORNER BEADS to be wired to the partition after the partition is in place.

DOOR BUCKS OF WOOD OR METAL to be cut to dimensions to allow casing to cover joint between buck and plaster by at least 1".

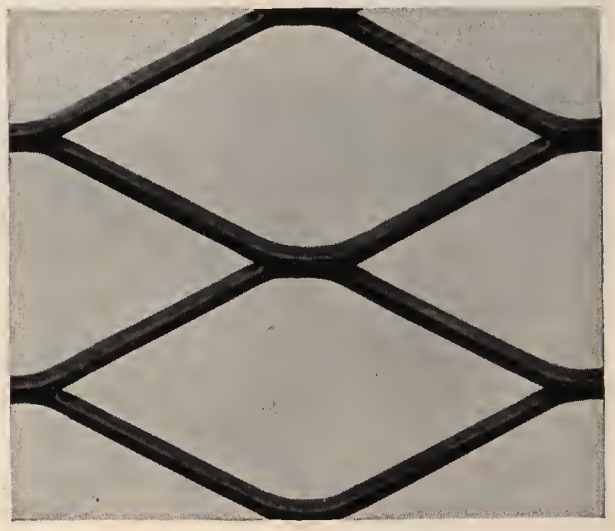
PENMETAL EXPANDED METAL—STANDARD

¼ Inch Standard Expanded Metal (Actual size)

½ Inch Standard Expanded Metal (Actual size)



¾ Inch Standard Expanded Metal (Actual size)



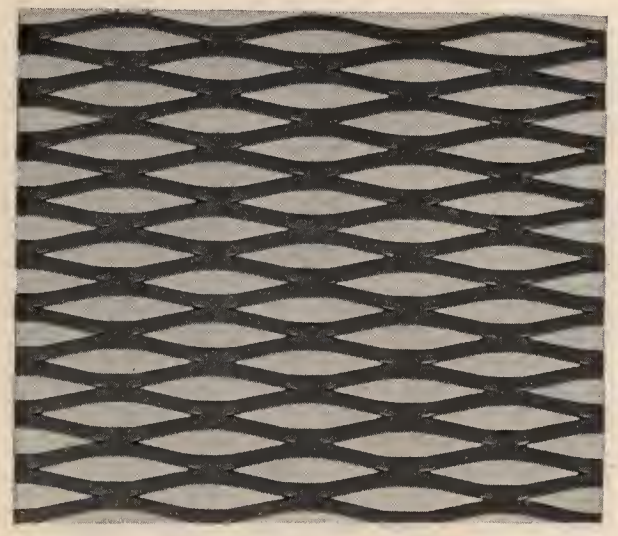
1½ Inch Standard Expanded Metal (Actual size)

APPROXIMATE SIZES, DIMENSIONS AND WEIGHTS OF STANDARD EXPANDED METAL

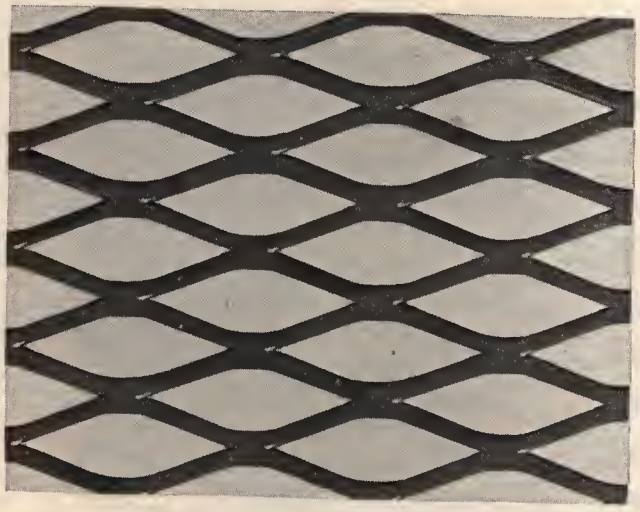
Style Designation	Wgt. in Lbs. Per Sq. Ft.		Stock Sizes of Sheets	Normal Size of Mesh Centre to Centre of Bridges		Size of Strands		U. S. Standard Gauge Steel Used
	Plain	Galv.		Width	Length	Thickness	Width	
¼"—#20	.86	1.29	4' x 8'	.255"	1.0"	.036"	.073"	20
¼"—#18	1.14	1.71	4' x 8'	.255"	1.0"	.048"	.073"	18
½"—#40	.40	.50	4' & 6' x 8'	.45"	1.2"	.048"	.048"	18
½"—#18	.74	.91	4' & 6' x 8'	.45"	1.2"	.048"	.089"	18
½"—#16	.84	.97	4' & 6' x 8'	.45"	1.2"	.060"	.076"	16
½"—#13	1.47	1.73	4' & 6' x 8'	.45"	1.2"	.090"	.089"	13
¾"—#16	.50	.59	4' & 6' x 8'	.923"	2.0"	.060"	.092"	16
¾"—#13	.80	.92	4' & 6' x 8'	.923"	2.0"	.090"	.098"	13
¾"—#10	1.20	1.36	4' & 6' x 8'	.923"	2.0"	.090"	.144"	13
¾"—# 9	1.80	1.95	4' & 6' x 8'	.923"	2.0"	.137"	.144"	10
1"—#16	.44	.51	4' x 8'	1.09"	2.4"	.060"	.091"	16
1½"—#18	.20	.25	4' x 8'	1.33"	3.0"	.048"	.068"	18
1½"—#16	.40	.48	4' x 8'	1.33"	3.0"	.060"	.106"	16
1½"—#13	.60	.68	4' & 6' x 8'	1.33"	3.0"	.090"	.106"	13
1½"—#10	.79	.89	4' & 6' x 8'	1.33"	3.0"	.090"	.143"	13
1½"—# 9	1.20	1.31	4' & 6' x 8'	1.33"	3.0"	.137"	.143"	10

Style designation number does not always mean gauge number. (See last column for gauge numbers.)

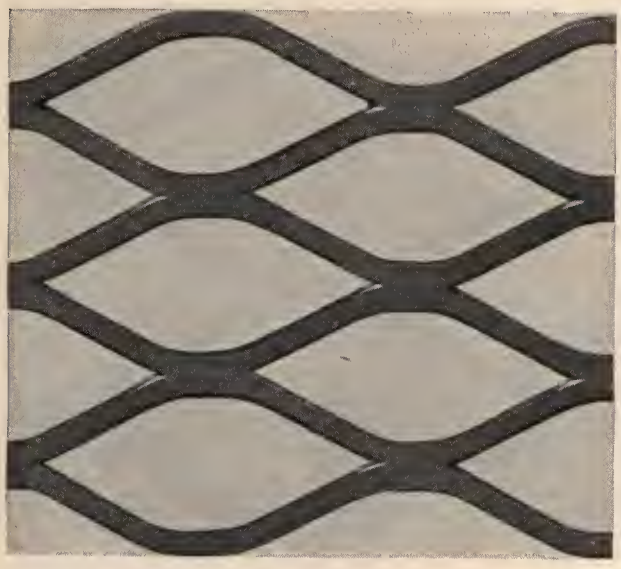
PENMETAL EXPANDED METAL—FLATTENED



¼ Inch Flattened Expanded Metal (Actual size)



½ Inch Flattened Expanded Metal (Actual size)



¾ Inch Flattened Expanded Metal (Actual size)

1½ Inch Flattened Expanded Metal (Actual size)

APPROXIMATE SIZES, DIMENSIONS AND WEIGHTS OF FLATTENED EXPANDED METAL

Style Designation	Wgt. in Lbs. Per Sq. Ft.		Stock Sizes of Sheets	Normal Size of Mesh Centre to Centre of Bridges		U. S. Standard Gauge Steel Used
	Plain	Galv.		Width	Length	
¼"—#20	.82	1.24	4' x 8'	.255"	1.031"	20
¼"—#18	1.08	1.65	4' x 8'	.255"	1.031"	18
½"—#40	.38	.49	3' & 4' x 8'	.45"	1.26"	18
½"—#18	.70	.88	3' & 4' x 8'	.45"	1.26"	18
½"—#16	.80	.97	3' & 4' x 8'	.45"	1.26"	16
½"—#13	1.40	1.62	3' & 4' x 8'	.45"	1.26"	13
¾"—#16	.47	.59	3' & 4' x 8'	.923"	2.12"	16
¾"—#14	.63	.79	3' & 4' x 8'	.923"	2.12"	14
¾"—#13	.76	.92	3' & 4' x 8'	.923"	2.12"	13
¾"—# 9	1.71	1.86	3' & 4' x 8'	.923"	2.12"	10
1"—#16	.41	.50	4' x 8'	1.091"	2.562"	16
1½"—#16	.38	.48	3' & 4' x 8'	1.33"	3.20"	16
1½"—#14	.46	.56	3' & 4' x 8'	1.33"	3.20"	14
1½"—#13	.57	.68	3' & 4' x 8'	1.33"	3.20"	13
1½"—#10	.75	.89	3' & 4' x 8'	1.33"	3.20"	13
1½"—# 9	1.14	1.28	3' & 4' x 8'	1.33"	3.20"	10

Style designation number does not always mean gauge number. (See last column for gauge numbers.)

PENMETAL EXPANDED METAL

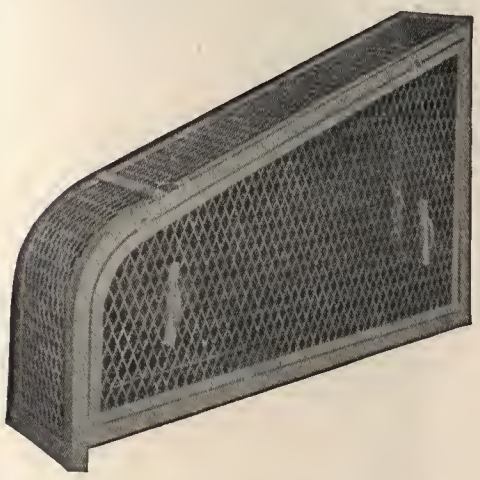
Expanded from a solid sheet of steel, PENMETAL Expanded Metal combines maximum STRENGTH with LIGHTNESS. The strands are cold drawn to give a truss-like formation to the diamond-shaped meshes—insuring STRENGTH, RIGIDITY and FLATNESS. Thus a diamond-shaped mesh is formed from the flat steel sheet which is lighter yet stronger, in tensile strength, than the original steel sheet.

PENMETAL Expanded Metal has greater strength per square foot, pound for pound, than any other material and is especially adaptable where SPACE SAVING, STRENGTH and LIGHTNESS are essential. By expanding the steel, its elastic limit is doubled and the breaking strength increased.

Expanded Metal is made principally from carbon steel, but it can also be made from stainless steel, aluminum, Monel metal, copper, etc.

PENMETAL Expanded Metal can be coated after fabrication to give special finishes; viz., hot-dip galvanized, electro-galvanized, nickel, cadmium or copper plated, buffed and polished, or painted.

It can also be arc or resistance welded as there is no scale on the finished sheet.



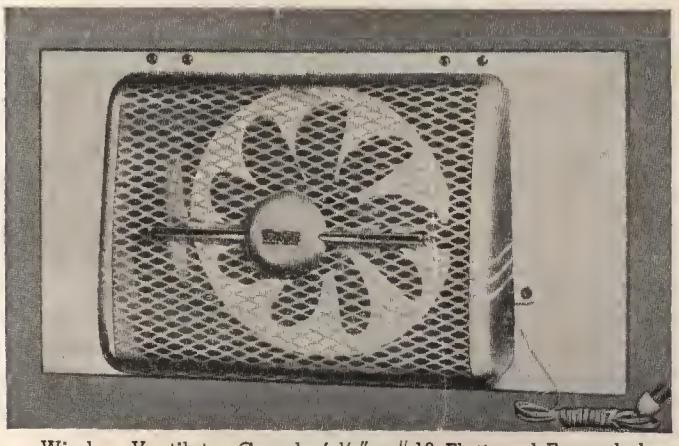
Machine Guard of ¾"—#13 Expanded Metal

Open Partitions of 1½"—#13 Expanded Metal combined with steel shelving

Where a smooth, flat surface is required, the sheets are FLATTENED by means of heavy mill flattening rolls, making the strands and the bonds on the same plane in the sheets and slightly reducing the thickness of the sheet. Meshes are DEBURRED as required.

PENMETAL FLATTENED Expanded Metal is used especially where smooth, flat surfaces are desired. Typical uses are for strong bins, shelving, refrigerators, animal cages, etc. The material is not only strong and light in weight but also attractive in appearance. Pleasing to the eye because of its regular diamond-shape pattern, it is an ideal background for window displays, providing a ready-made trellis for store fronts.

FLATTENED Expanded Metal is especially suited to welding because of its flat surface. No other type of mesh can be welded as easily or as satisfactorily. When galvanized after fabrication it will retain its bright, clean appearance indefinitely.



Window Ventilator Guard of ½"—#18 Flattened Expanded Metal

Basket of ½"—#18 Flattened Expanded Metal, Welded to Rod Frame

Heaters and Vending Machines use ½"—#18 Expanded Metal

Display Rack of ¾"—#13 Flattened Expanded Metal

A Few Uses for Penmetal Expanded Metal

Aircraft
Animal cages
Auto emergency track
Baskets of all types
Bulkheads
Busses
Cargo vessels
Deep freeze units
Dehydrators
Drying trays
Electric heaters
Electric light guards
Fencing
Flower boxes
Furniture
Garden chairs and benches
Insulation support
Ironing boards
Ladders
Machine and window guards
Mastic flooring
Novelty work
Oil and air filters
Open partitions
Outdoor fireplaces
Pallets
Radiator enclosures
Radio grounds
Radios
Rubbish burners
Shelving
Storage bins
Toys
Trucks
Vending machines
Ventilators

The ¾" and 1½" meshes are also used for concrete reinforcement, concrete encasements, structural steel and precast concrete work.

Ironing Board of ½"—#18 Flattened Expanded Metal with Steel Supports

ENGINEERING SERVICE

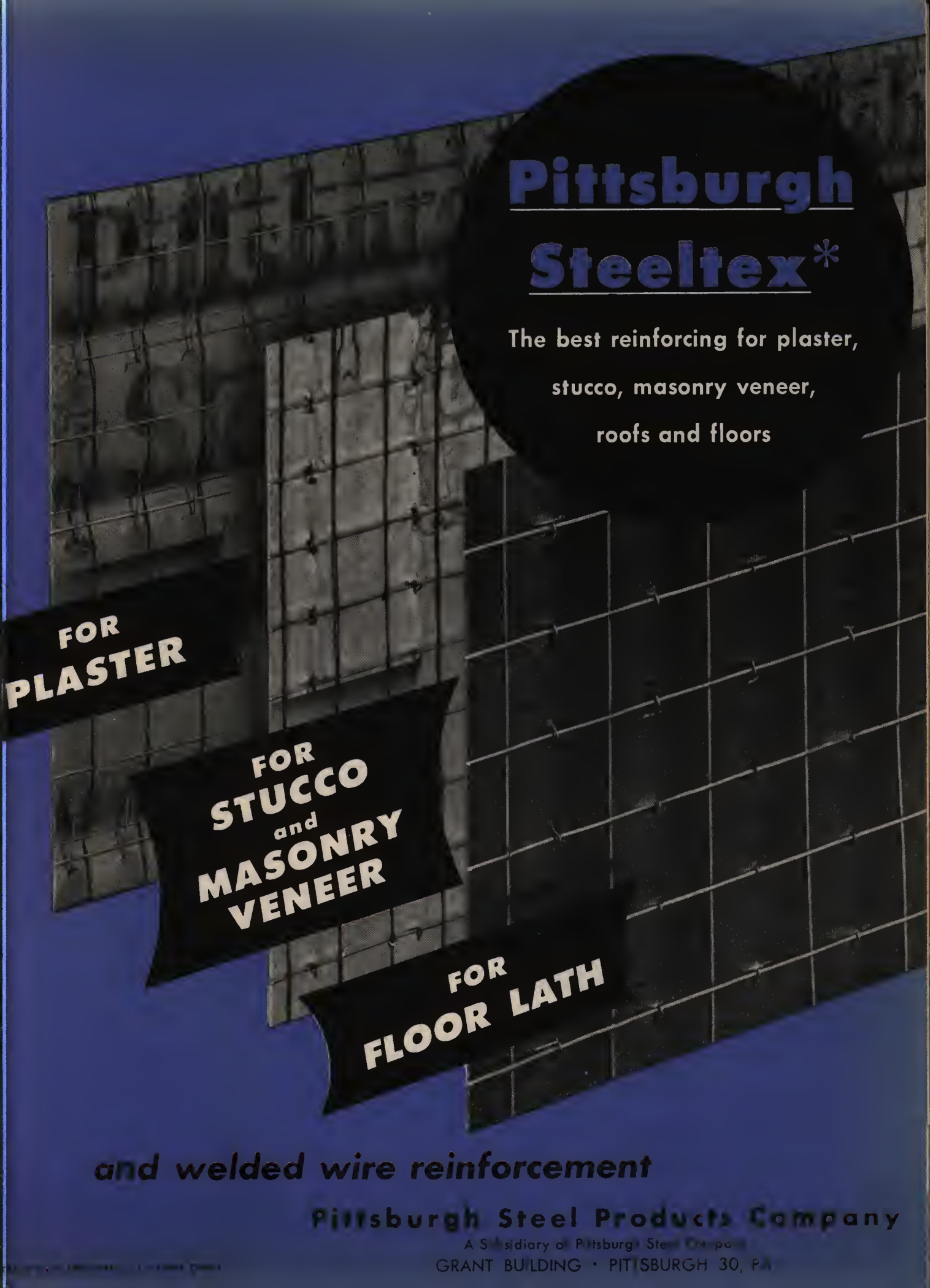
Our engineering advice is at your service for the further fabrication of standard size sheets of PENMETAL Expanded Metal into its many final uses.

Send for complete Catalog No. 481ESA giving additional data on PENMETAL Expanded Metal.

PENN METAL COMPANY, INC.

GENERAL SALES OFFICES- 205 EAST 42ND STREET, NEW YORK 17, N. Y.

FACTORY - PARKERSBURG, WEST VIRGINIA



and welded wire reinforcement

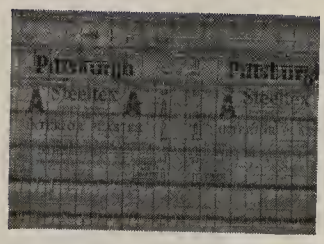
Pittsburgh Steel Products Company

A Subsidiary of Pittsburgh Steel Company

GRANT BUILDING · PITTSBURGH 30, PA.

PITTSBURGH STEELTEX PRODUCTS

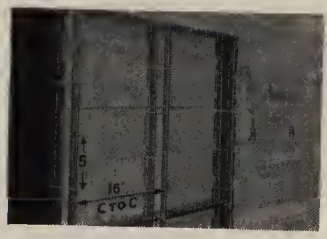
PLASTER
(interior walls and ceilings)



Steeltex for Plaster (Type A) is a 2″ x 2″ mesh of welded wire reinforcing fabric secured to a specially made absorbent backing. Corrugations in the mesh form a steel truss extending the length of the Steeltex sheet, giving it a board-like rigidity. The absorbent backing is offset from the steel mesh to permit automatic embedment of the reinforcing in the plaster. It is absorbent enough to hold the wet mortar in place until it has set about the reinforcing wires.

3-7

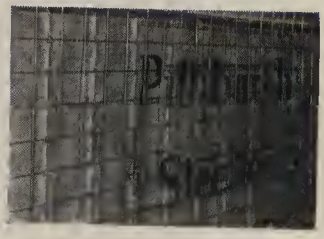
PARTITIONS



Steeltex Hollow Partitions are constructed with Steeltex Studs (fabricated by joining two lines of channels with galvanized annealed wire prongs welded across legs of each channel at 5″ intervals). Studs are secured to floor and ceiling bearings. After erection, Steeltex for Plaster, Type A, is applied on both sides of the studs and attached to the studs by pressing the lath against the prongs so that they puncture the backing, then the prongs are bent over the reinforcing wires.

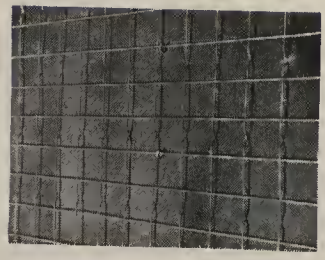
7

STUCCO



Steeltex 38-14 is a 2″ x 2″ mesh of welded wire reinforcing fabric secured to a waterproofed backing made of a double layer of paper, with layers cemented to each other by a layer of mastic compound.

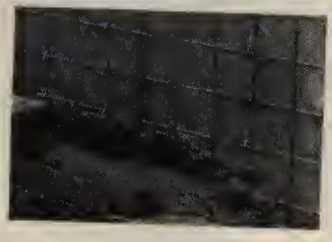
8



C-214 and C-216 (Self-Furring) reinforcing fabrics are steel wire meshes without backing. C-214 is made of 14-gauge and C-216 is made of 16-gauge wire. These types of reinforcing are recommended wherever the advantages of Steeltex backing are not required. They may be applied over wood or composition sheathing in new construction or over any type of old exterior walls in remodeling work. As both types are self-furring, there is no need for furring nails.

8

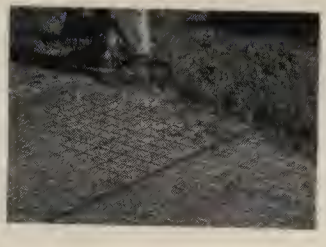
MASONRY VENEER



Steeltex for Masonry Veneer is a combination of Welded wire reinforcing fabric and specially designed waterproofed backing. The reinforcing element is a welded wire (2″ x 2″ mesh) fabric. Attached to this fabric is a double-ply waterproofed backing with the layer cemented together by a mastic compound. The backing is fastened to the fabric by crimped stitch wires which permit it to fall away from the steel for automatic embedment of the reinforcing fabric.

10

FLOORS and ROOFS



Steeltex Floor Lath is composed of steel wire reinforcing mesh (3″ x 4″) which is attached to a tough cord-reinforced water resistant backing—the form element—by means of crimped stitched wires which also space the reinforcing mesh the proper distance from the backing to permit complete embedment of the reinforcement in the slab.

For Welded Wire Reinforcement for floors, roofs, walks, etc., see back cover.

11

STEELTEX (Type A) for Plaster

Type A Steeltex is designed to provide maximum effective steel reinforcing embedded in plaster slabs at relatively low cost. It is made of a 2″ x 2″ mesh, 16-ga., electrically welded, self-furring, galvanized steel wire fabric to which a fibrous absorbent backing is secured by stitch wires on 2″ centers. The reinforcing fabric is corrugated every 4⅜″, forming a steel truss extending the length of the Steeltex sheet. The wires extend beyond the fibrous backing to insure continuous reinforcing when the sheets are lapped.

Type A Steeltex is equally adaptable to all types of plaster construction, ranging from small residences to large fire-proof buildings. It has been tested by the Underwriters' Laboratories, Inc., of Chicago and awarded their one-hour fire rating. Steeltex sheets are shipped in strong fibreboard cartons which contain 50 sq. yds., weighing about 116 lbs., gross weight.

Steeltex far Plaster gives effective reinforcement, distributing strains equally and reducing plaster cracking hazards to the minimum.

application—Steeltex for Plaster is attached to walls and ceilings with Steeltex Blued Nails, driven into each bearing on approximate 6″ centers so as to engage a reinforcing wire of the lath. There should always be wire to wire laps of not less than 1″ at all joints, with all joints staggered on both ceiling and side walls, so that four corners of adjacent sheets will not occur at any one place. Application should be started at one corner of the ceiling. Sidewalls shall be lathed from ceiling down so that all horizontal laps are made over top sheets. Plaster on Steeltex Type A should be finished to not less than ¾″ grounds.

Advantages of STEELTEX for Plaster (Type A)

reinforced plaster—Embedment of welded steel wire fabric in the plaster achieves construction similar in principle to reinforced concrete. This affords maximum protection against plaster cracks.

automatic back-plastering—All of the reinforcing steel is embedded in the plaster. Therefore the advantages of back-plastering are secured without extra expense.

all angles and laps reinforced—Type A is so designed that, when properly applied, the reinforcing steel extends around and protects all angles and corners. Similarly, the steel mesh extends across all laps, offering maximum protection against lap cracks.

permanence—The wire mesh is made of the highest quality reinforcing steel and, since the steel is galvanized and copper-bearing and all reinforcing steel is embedded in the plaster, there is maximum protection against rusting and corrosive action.

high bond value—The bond value between Steeltex, Type A, and sanded gypsum plaster is 830 lb. per sq. ft. This is a factor of safety over 100 assuring that bond failure will never occur.

floating wall action—The furring action of Steeltex separates the plaster slab from the framework, minimizing the contact between wet plaster and dry lumber. This is added protection against plaster cracks caused by swelling and distortion of the wood.

no lath or stud marks—The furring action also eliminates the possibility of unsightly stud marks from appearing on the finished surface. Lath marks do not occur over Steeltex.

easy to bend and cut—To form sharp, true ceiling and corner angles simply bend Steeltex over any convenient piece of board or scaffolding. Steeltex is readily cut with lather's No. 8 snips.

easy to handle—The sheets of Steeltex are boardlike in rigidity. They are of such size (30½″ x 49″) that one man can conveniently handle and apply them with a minimum of effort.

instant bonding action—The fibrous paper backing of Steeltex is especially designed to bond instantly with the wet mortar. This bonding action is of particular advantage to the plasterer when working on overhead surfaces.

boardlike rigidity—There is less deflection of the lath under the pressure of the trowel which makes for greater speed in the application of the scratch coat.

no plaster wasted in keys—Since Steeltex provides automatic back-plastered construction there are no plaster keys.

less waste in labor and material—Greater plaster coverage is secured because Steeltex is a rigid lath. Moreover the plasterer trowels against a rigid surface with no waste in plaster droppings. This results in outstanding economies in the use of sand and neat gypsum, in addition to reducing labor costs.

Lathing Specifications for Ceilings and Side Walls over Wood Framing

All interior wall, partition and ceiling surfaces, where plaster finish over lath is specified or designated, shall be lathed with Pittsburgh Steeltex for Plaster, Type A (2″ x 2″ mesh, 16-ga., copper-bearing, cold-drawn, electrically-welded, galvanized, self-furring steel wire fabric, to which an absorbent backing is secured by means of 17-ga. galvanized stitch wires on 2″ centers, with stiffening ribs formed in fabric on not more than 5″ centers).

Steeltex shall be attached to wood supports with Steeltex Blued Nails (U-shaped head, 12-ga. by 1⅞″), spaced not to exceed 6″ on centers and driven to a penetration of not less than 1″ into each stud or joist. The U-shaped head of each nail shall encircle a reinforcing wire of the lath.

Lath shall be erected with ribs at right angles to supports. End joints shall be staggered so that four corners of the sheets shall not occur at any one place.

All laps shall be 1″ and made so that wire laps against wire. End laps shall be made on supports only. Side laps shall be tied once between supports.

Lath shall first be applied to ceilings and bent at ceiling angle to form a drop or apron down side walls at least 4″. Side walls shall be lathed from ceiling down so that all side laps are made over upper sheets and lath shall be bent around all corners to prevent joints at the juncture of walls, or lath may be butted at angles and corners and corner reinforcing applied.

Where any wall, partition, or ceiling abuts masonry, the lath shall extend over the masonry at least 6″ beyond the joint. This extension shall have a selvage edge of at least 2″ and be nailed to the masonry, or the lath may be butted and corner or joint reinforcing applied.

Note: To secure a ½″ thickness of plaster over the face of the lath, apply plaster to full ¾″ grounds; to secure ⅝″ thickness of plaster, apply to ⅞″ grounds; to secure ¾″ thickness of plaster, apply to 1″ grounds.

Other types of nails may be used provided they penetrate the wood bearing members a full 1″ and securely engage the horizontal wire in the bottom of a rib. This would include: 1¼″ hook-head lath nails, 1¼″ blued plasterboard nails with 7/16″ head, and 1¼″ blued metal lath staples. These nails shall be driven into each stud or joist at every rib of the lath.

Specifications for Erecting and Lathing Suspended Ceilings

Plastered ceilings, suspended from flat slab, arches, pan system, or other similar floor construction, shall be lathed with Pittsburgh Steeltex for Plaster, Type A (2″ x 2″ 16-ga., cold-drawn, electrically-welded, galvanized, copper-bearing, self-furring steel wire fabric, to which an absorbent backing is secured by means of 17-ga., galvanized, stitch-wires on 2″ centers, with stiffening ribs formed in the fabric on not more than 5″ centers).

hangers—Hangers shall be placed not to exceed 4 ft. centers in either direction. The minimum size for hangers shall be No. 8-ga. galvanized wire, 1″ x 3/16″ flats, or 7/32″ round, mild steel rods. Hangers shall be long enough to wrap around beams or to provide suitable anchorage in the concrete or tile. Where steel beams or purlins are on not more than 4 ft. centers, hangers may be attached directly to them.

When hangers are hung from concrete beams or arches, they shall be placed before the concrete is poured. When hung from terra cotta floors, they shall be installed at tile joints during erection, or (when tile is already in place) in holes bored through the tile and secured on the upper side by toggle bolts or steel rods.

runner channel—Runner channels not less than 1½″, weighing not less than 442 lb. per thousand linear feet shall be suspended the required distance from the floor slab and shall be spaced not to exceed 4 ft. centers. When wire hangers are used, runner channels shall be securely tied to the lower end of the hanger wires by at least three twists. The lower end of the rod hangers shall be secured to the runner channels by at least two twists or by wire-tieing them. When flat hangers are used, the runner channels shall be bolted to them with ⅜″ diameter bolts, with flat side of runner channel against the hanger.

furring channel—Furring channel shall be ¾″ Steeltex Prong Channels having a minimum weight of 300 lb. per thousand linear feet. They shall be spaced not more than 16″ on centers, placed at right angles to the runner channels and securely saddle-tied by at least three strands of 16-ga. galvanized, annealed wire at each crossing or by No. 9 wire hairpin clips.

Lath shall be erected with ribs at right angles to the ¾″ prong channels and shall be secured to them by pressing the lath against the prongs so that they puncture the backing. When the lath rests against the prong channels, the prongs shall be bent over the reinforcing wires and their ends pressed in firmly.

plastering suspended ceilings—End joints shall be staggered so that four corners of the sheets shall not occur at any one place.

All laps shall be 1″ and made so that wire laps against wire. End laps shall be made on supports only. Side laps shall be tied once between supports.

Lath shall be bent at ceiling angle to form a drop or apron down the side walls at least 4″ or the lath may be butted at angles and corner reinforcing applied.

Where ceiling abuts masonry the lath shall extend over the masonry at least 6″ beyond the joint. This extension shall have a selvage edge of at least 2″ and be nailed to the masonry or the lath may be butted and corner reinforcing applied.

Lathing Specifications for Side Walls and Ceilings over Structural Steel Framing or Steel Joists

All interior furred wall, partition and ceiling surfaces, where plaster finish over lath is specified or designated, shall be lathed with Pittsburgh Steeltex for Plaster, Type A (2″ x 2″ mesh, 16-ga., copper-bearing, cold-drawn, electrically-welded, galvanized, self-furring steel wire fabric to which an absorbent backing is secured by means of 17-ga. galvanized stitch wires on 2″ centers, with stiffening ribs formed in the fabric on not more than 5″ centers).

Steeltex V-shaped Attachment Bars (19-ga. Attachment Bars where supports are spaced 24″ or less; 16-ga. Attachment Bars where supports are spaced 25″ to 36″) shall be placed at right angles to the supports and spaced not more than 16″ on centers, and shall be securely tied with a double strand of 14-ga. galvanized annealed wire to each support or securely attached to the flanges of rolled section members with clips which hook over the flange of each member.

Lath shall be erected with ribs at right angles to the Attachment Bars and shall be secured to Attachment Bars by pushing lath against the prongs so that they puncture backing. When lath rests against the Attachment Bars, prongs shall be bent over the reinforcing wires of the lath and their ends pressed in firmly.

End joints shall be staggered so that four corners of the sheets shall not occur at any one place.

All laps shall be 1″ and made so that wire laps against wire. End laps shall be made on Attachment Bars only. Side laps shall be tied once between supports.

Lath shall be bent at all ceiling angles to form a drop or apron down the sidewalls at least 4″, or lath may be butted at angles and corner reinforcing applied.

Sidewalls shall be lathed from ceiling down so all horizontal laps are made over upper sheets. Lath shall be bent around all corners to prevent joints at juncture of walls, or lath may be butted at all corners and corner reinforcing applied.

Where any wall or partition or ceiling abuts masonry, lath shall extend onto masonry at least 6″ beyond the joint. This extension shall have a selvage edge of at least 2″ and be nailed to masonry, or lath may be butted and corner or joint reinforcing applied.

Note: To secure 1″ thickness of plaster over the face of the lath, apply plaster to full ¾″ grounds; to secure ⅝″ thickness of plaster, apply ⅞″ grounds; to secure ¾″ thickness of plaster apply to 1″ grounds.

Lathing Specifications for Ceilings Attached to Steel Joists

All furred ceilings, where plaster finish is specified or designated, shall be lathed with Pittsburgh Steeltex for Plaster, Type A (2″ x 2″, 16-ga., cold-drawn, electrically welded, galvanized, copper-bearing, self-furring steel wire fabric, to which an absorbent backing is secured by means of 17-ga. galvanized stitch wires on 2″ centers, with stiffening ribs formed in the fabric on not more than 5″ centers).

Lath shall be erected with ribs at right angles to the Attachment Bars and shall be secured to them by pushing the lath against the prongs so that they puncture the backing. When the lath rests against the Attachment Bars, the prongs shall be bent over the reinforcing wires of the lath and their ends pressed firmly.

End joints shall be staggered so that four corners of the sheets shall not occur at any one place.

All laps shall be 1″ and made so that wire laps against wire. End laps shall be made on Attachment Bars only. Side laps shall be tied once between supports.

Lath shall be bent at ceiling angles to form a drop or apron down the sidewalls at least 4″, or lath may be butted at angles and corner reinforcing applied.

Where ceiling abuts masonry the lath shall extend over the masonry at least 6″ beyond the joint. This extension shall have a selvage edge of at least 2″ and be nailed to the masonry, or the lath may be butted and corner reinforcing applied.

Hollow Partitions

Steeltex 4″ Hollow Partitions construction with 2¼″ Pittsburgh Steeltex Studs (fabricated by joining together two lines of ¾″ channels with 12½″ gauge galvanized annealed wire prongs welded across the legs of each channel at 5″ intervals).

The Steeltex Studs are then secured to the floor and ceiling bearings by runner channels, nailing, ceiling or floor brackets or by holes cut into the concrete floor and ceiling. After erection of the partition studs, Pittsburgh Steeltex for Plaster, Type A, is applied on both sides of the studs by starting at the ceiling and lathing down to the floor. The Steeltex is attached to the studs by pressing the lath against the prongs so that these prongs puncture the backing. When the lath is resting against the studs, the prongs are then bent over the reinforcing wires of the lath and their ends pressed in firmly.

As the Steeltex is readily bent to any shape desired, these Steeltex 4″ Hollow Partitions are extremely versatile and can be successfully used in practically any shape room regardless of obstructions which would otherwise prevent partitioning.

Specifications for Erecting and Lathing 4″ Steeltex Hollow Partitions

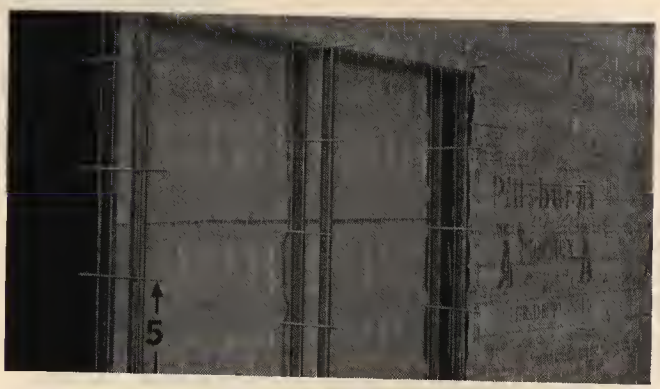
Steeltex 4″ Hollow Partitions shall be constructed with 2¼″ Pittsburgh Steeltex Studs (Steel studs fabricated by joining together two lines of ¾″ channels with 12½ ga. galvanized annealed wire prongs welded across the legs of each channel at 5″ intervals. The wire prongs are at least 4¾″ long so they extend not less than 1¼″ beyond each edge of the stud which has an overall depth of 2¼″).

The Steeltex Studs shall be spaced as follows: on 16″ centers for partition heights up to and including 9 ft.; on 12″ centers for partition heights from 9 ft. up to and including 12 ft.; and on 8″ centers for partition heights exceeding 12 ft. Maximum stud height shall be 16 ft.

All partitions shall be permanently braced with ¾″ channels weighing not less than 300 lb. per 1000 ft., placed horizontally within the partition and securely "wire-tied" to each stud at all points of intersection with the studs. When the partition is 9 ft. or less in height, two lines of horizontal bracing channel shall be used at distances of 3 ft. and 5 ft. from the floor line. When the partition is from 9 ft. up to and including 12 ft. in height, three lines of horizontal bracing channel shall be used at distances of 3 ft., 5 ft. and 7 ft. from the floor line. When the partition exceeds 12 ft. in height, the horizontal bracing channel shall be located at distances of 3 ft., 5 ft., 7 ft. and 10 ft. from the floor line with additional braces at 3-ft. intervals to within 3 ft. of the ceiling.

The Steeltex Studs shall be secured to the floor and ceiling bearings by runner channels, nailing, ceiling or floor brackets or by holes cut into the concrete floor and ceiling.

After the partition studs have been erected plumb and true, Pittsburgh Steeltex for Plaster, Type A (2″ x 2″ mesh, 16-ga., cold-drawn, electrically-welded, galvanized, copper-bearing, self-furring steel wire fabric, to which a tough fibrous backing is secured by means of 17-ga. stitch wires on 2″ centers, with stiffening ribs formed in fabric on not more than 5″ centers) shall be applied on both sides of the studs by starting at the ceiling and lathing down to the floor, so that all side laps are made over the bottom edge of the upper sheets. Ribs of the lath shall be at right angles to the studs. The Steeltex shall be attached to the studs by pressing the lath against the prongs so that they puncture the backing. When the lath rests against the studs, the prongs shall be bent over the reinforcing wires of the lath and their ends pressed in firmly.



Light weight and rigid walls can be constructed with Steeltex Partition Studs. Prongs on the studs engage the reinforcing mesh of Steeltex by piercing the backing.

End Joints of the lath shall be staggered so that four corners of the sheets shall not occur at any one place. All laps shall be 1″ and made so that wire laps against wire. End laps shall be made on studs only. Side laps shall be tied once between supports. When partition abuts masonry, lath shall extend over masonry at least 6″ beyond the joint. This extension shall have a selvage edge of at least 2″ and be nailed to the masonry, or the lath may be butted and corner or joint reinforcing applied.

Pittsburgh Steeltex for Stucco

Reinforced Portland Cement Stucco is recognized as one of the most reliable building materials available for exterior wall surfaces. It is fireproof, durable, distinctive in appearance, and economical in upkeep. Stucco is adaptable to all types of new construction, ranging from small homes to large monumental type buildings. It also affords a simple and inexpensive means of remodeling and modernizing old structures by "overcoating." Reinforced Portland Cement Stucco reduces fire hazards to a minimum. Action of the elements will not cause Portland Cement Stucco to deteriorate. When properly flashed and applied over a waterproof backing, it offers effective resistance to air and moisture infiltration.

Stucco is adaptable to almost any type of architecture. An artistic and attractive appearance is readily obtained in either plain effects or by use of various colors and surface textures.

The initial cost is comparable to the lowest priced exterior wall surface. Upkeep costs are low, as there is nothing to repair or paint except a small amount of wood trim.

stucco reinforcing

Styles: There are six different styles of Pittsburgh Reinforcements for exterior walls. Slight variations of their final form are made necessary by the differing requirements of the many types of exterior construction over which lath for stucco is applied and by varying trade practices throughout the country.

The styles of Steeltex for Stucco, with waterproof backing attached, are: Steeltex 38-14 and Steeltex 38-16.

Styles with no backing attached are: Self-furring C-214 and C-216, Welded Wire Reinforcements AA-1414 and AA-1616.

Choice of Styles: The choice of specific styles of Steeltex or Pittsburgh Reinforcing Laths for Stucco is dependent upon the type of construction involved and the methods of applications contemplated. The economies offered by one style, as contrasted by another in a specific application, will also effect the choice. Complete application directions for each of these reinforcing laths for Stucco are available upon application.

The following table describes the various styles of Pittsburgh Steeltex and Reinforcement Fabrics and indicates the type of construction to which they are applicable.

Specifications

stucco base over wood framing

(Direct to Stud Construction)

scope of work—Here, list and locate all of the respective areas to be covered.

framing—All framing shall be spaced accurately (12″)—(16″) on centers.

material—Stucco Reinforcing Lath—The stucco lath shall be Pittsburgh Steeltex (Style 38-14)—(Style 38-16) delivered to the building site in the original manufacturer's packages.

application—General—Pittsburgh Steeltex (Style ....) shall be attached direct to studs starting the first width at the sill line and extend around building. The second width shall lap the first at least 2″ (shingle fashion), lapping wire against wire. All horizontal laps midway between studs shall be tied with an 18-ga. tie wire. Vertical joints shall be staggered and lapped 3″ over a stud with a 2″ strip of backing along edge of one piece cut away to form a selvage edge of wires which overlap the preceding piece. Vertical joints shall not be made at corners under or over openings.*

Lath shall be bent around all corners and nailed to the first stud beyond the corner. It shall be carried up to the openings or under the molding of all doors and windows. For added protection at the corners of window and door openings, remove the backing from an 8″ by 12″ strip of lath and apply the wire mesh diagonally to provide double reinforcing.

nails—The Steeltex Reinforcing Lath shall be nailed with Steeltex Furring nails placed over the horizontal wires at 6″ intervals vertically on each stud and driven to penetrate not less than 1″. Nail around all door and window openings at 4″ intervals.

*If Steeltex sheets are used, all laps shall be at least 1″ and the sheets placed so that the shortest dimension extends across the studs.

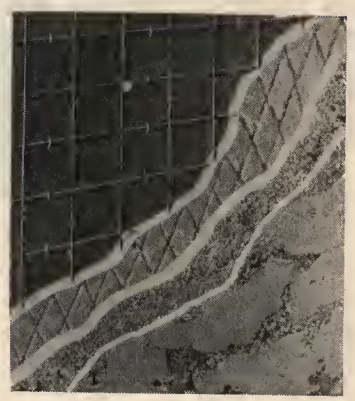
Note: Stucco placed over Steeltex shall be applied in three coats to a total thickness of at least 7/8″ in accordance with specifications of the Portland Cement Association.

stucco base over wood sheathing

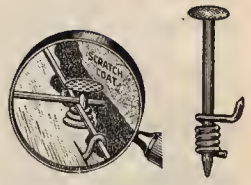
scope of work—See paragraph under "wood framing."

framing—See paragraph under "wood framing."

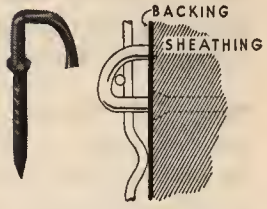
material—*Note:* Specify type of wood sheathing (waterproof felt or building paper not required), and method of application, nails, flashing, etc.



This diogramatic built-up wall sectian shaws actual embedment of the wires in the stucca.



Steeltex furring nails insure positive embedment of the reinforcing mesh.



Steeltex galvanized nails are designed for use with self-furring reinforcements C-214 and C-216.

Stucco Reinforcing Lath—The Stucco Lath shall be Pittsburgh Steeltex (Style 38-14)—(Style 38-16) delivered to building site in original manufacturer's package.

application—General—Steeltex (Style ...) shall be attached direct to the sheathing starting the first width at the sill line and extend around the building. The second width shall lap the first at least 2″ (shingle fashion), lapping wire against wire. Vertical joints shall be staggered and lapped 3″ with a 2″ strip of backing along the edge of one piece cut away to form a selvage edge of wires which overlap the preceding piece. The vertical joints shall not be made at corners under or over openings.*

Lath shall be bent around all corners at least 12″. It shall be carried up to the openings or under the molding of all doors and windows. For added protection at the corners of window or door openings, remove the backing from an 8″ by 12″ strip of lath and apply the wire mesh diagonally to provide double reinforcing.

nails—The Steeltex Reinforcing Lath shall be nailed with Steeltex Furring Nails placed over the horizontal wires at 8″ intervals in each direction and driven to a penetration of not less than 1″. Nail around all door and window openings at 6″ intervals.

*If Steeltex sheets are used, all laps shall be at least 1″ and sheets placed so that shortest dimension extends across studs.

Note: Stucco placed over Steeltex shall be applied in three coats to a total thickness of at least 7/8″ in accordance with specifications of the Portland Cement Association.

Steeltex for Stucco

stucco base over wood sheathing (covered with waterproof felt or paper)

scope of work—See paragraph on "wood framing."

framing—See paragraph on "wood framing."

material—*Note:* Specify type of wood sheathing, weight and grade of waterproof felt or building paper, method of application, nails, flashing, etc.

Stucco Reinforcing Lath—The Stucco Lath shall be Pittsburgh Reinforcing (Self-furring Style C-214) — (Self-furring Style C-216)—(Style AA-1414)—(Style AA-1616).

application—General—Pittsburgh Reinforcing (Style ....) shall be attached over the waterproof felt or building paper to the sheathing, starting the first width at the sill line and extend around the building. The second width shall lap the first at least 2″ (shingle fashion). Vertical joints shall be staggered and lapped 3″ over a stud and shall not be made at the corners under or over openings. The lath shall be bent around all corners at least 12″. It shall be carried up to the openings or under the moldings of all doors and windows. For added protection at the corners of window or door openings, an 8″ x 12″ strip of the lath shall be applied diagonally to provide double reinforcing.

nails—(for Style C-214 or C-216 use following specifications)—The reinforcing lath shall be nailed with Steeltex Galvanized Nails placed over the horizontal wires at 6″ intervals vertically on each stud and driven to a penetration of not less than 1″. Nail around all door and window openings at 6″ intervals.

(for Style AA-1414 or AA-1616 use following specifications)—The reinforcing lath shall be nailed with Steeltex Furring Nails placed over the horizontal wires at 8″ intervals in each direction and driven to a penetration of not less than 1″. Nail around all door and window openings at 6″ intervals.

Note: Stucco placed over Pittsburgh Reinforcing shall be applied in three coats to a total thickness of at least 7/8″ in accordance with specifications of Portland Cement Association.

stucco base over composition sheathing

scope of work—See paragraph under "wood framing."

framing—See paragraph under "wood framing."

material—*Note:* Specify type of composition sheathing, method of application, nails, flashing, etc. Steeltex Style 38-14 or 38-16 is recommended over sheathing that requires waterproof felt or building paper. If waterproof felt or building paper is omitted, Self-furring Style C-214 or C-216 is recommended.

Stucco Reinforcing Lath—The Stucco Lath shall be Steeltex (Style 38-14)—(Style 38-16)—(Style C-216)—(Style C-214).

application—(for Style 38-14 or 38-16 use following specifications)—General—Pittsburgh Steeltex (Style ....) shall be applied over the sheathing starting the first width at the sill line and extend around the building. The second width shall lap the first at least 2″ (shingle fashion), lapping wire against wire. Vertical joints shall be staggered and lapped 3″ over a stud with a 2″ strip of backing along the edge of one piece cut away to form a selvage edge of wires which overlap the preceding piece. The vertical joints shall not be made at corners under or over openings.

Lath shall be bent around all corners and nailed through the sheathing into the first stud beyond the corner. It will be carried up to the openings or under the molding of all doors and windows. For added protection at the corners of window or door openings, remove the backing from an 8″ x 12″ strip of lath and apply the wire mesh diagonally to provide double reinforcing. (recommended specification for Self-furring reinforcement Styles C-214 or C-216)

General—Pittsburgh Reinforcing (Style ....) shall be applied over the sheathing starting first width at sill line and extend around the building. The second width shall lap first at least 2″ (shingle fashion). Vertical joints shall be staggered and lapped 3″, and shall not be made at corners under or over openings.

Lath shall be bent around all corners and nailed through the sheathing into the first stud beyond the corner. It shall be carried up to the openings or under the molding of all doors and windows. For added protection at the corners of window or door openings, an 8″ x 12″ strip of the lath shall be applied diagonally to provide double reinforcing.

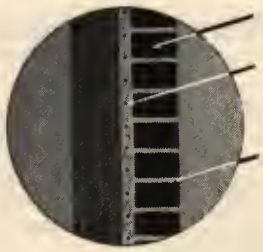
nails—(for Style 38-14 or 38-16 use the following specifications)—The Steeltex Reinforcing lath shall be nailed with Steeltex Furring Nails (length 2″) placed over the horizontal wires at 6″ intervals vertically on each stud. The nails shall be driven through the composition sheathing and into the bearing members not less than 1″. Nail around all door and window openings at 4″ intervals.

(for Style C-214 or C-216 use the following specifications)—The reinforcing lath shall be nailed with Steeltex Galvanized Nails (12 gauge 2 3/16″ long) placed over the horizontal wires at 6″ intervals vertically on each stud. The nails shall be driven through the composition sheathing so as to extend into the bearing members not less than 1″. Nail around all door and window openings at 4″ intervals.

Note: Stucco placed over Steeltex or Pittsburgh Self-furring Reinforcements shall be applied in three coats to a total thickness of at least 7/8″ in accordance with specifications of the Portland Cement Association.

STEELTEX for Masonry Veneer

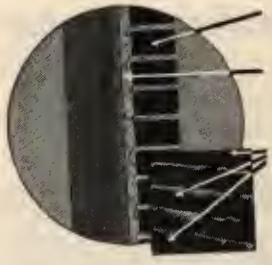
Masonry veneer opplication over Steeltex, showing how reinforcing steel becames embedded in cement mortar between veneer wall and Steeltex.



1. The brick wall is built as an integral part af the structure.

2. The brick is bonded to a one inch slab af cement mortar which in turn is permanently reinforced by heavy galvanized steel wires. Air space eliminated.

3. Properly filled mortar joints are assured ond heavy waterproafed backing adds further protectian ta the penetration af wind and rain.



1. The brick wall is free standing, separated from the framewark and fastened by means of metal ties.
2. When Steeltex is not used, it is necessary for the mason to leave a 1″ air space between the brick and sheathing. This becomes a dangerous flue in case of interiar fires.
3. Partially filled vertical joints on the inside af the brick wall, which affer little barrier to the penetration af the air and maisture as shown by this photograph af the inside of a brick veneer wall, after a fire.

Reinforced Masonry Veneer Construction

The Steeltex system of reinforced masonry veneer incorporates modern engineering practices and provides a steel reinforced masonry wall which is sound, durable, and economical in completed cost. Pittsburgh Steeltex reinforced masonry veneer offers what might accurately be termed "a reinforced monolithic" wall in that the brick or stone is actually cast into a steel reinforced cement slab which becomes an integral part of the complete masonry, yet does not necessitate any radical change in present building methods.

Steeltex for Masonry Veneer (38-16)

Steeltex for Masonry Veneer (Style 38-16) is a combination of steel reinforcing fabric and specially designed waterproofed backing. The reinforcing element is a network of 16-gauge, galvanized, copper-bearing steel wires, electrically spot-welded together on 2″ centers to form a welded wire fabric. Attached to the fabric is a double-ply waterproofed backing with the layers cemented together and further waterproofed by a mastic compound between. The backing is fastened to the fabric by crimped stitch wires which permit it to fall away from the steel reinforcement ⅜ of an inch.

It is supplied in rolls 49 in. wide and 110½ ft. long, containing 50 square yards and weighing 104 pounds per roll, gross weight. Construction of Masonry Veneer wall with Steeltex requires no radical change in building methods. The Steeltex is first nailed direct to the wood studding, shingle fashion. The masonry is then laid up aproximately 1″ from the framework; however, this 1″ space is filled with bricklayer's cement mortar as each course is laid. The mortar flows around the Steeltex reinforcing wires, completely embedding them. Steeltex Veneer Construction provides three outstanding advantages: (1) A reinforced cement sheathing approximately 1″ thick, of which the brick or stone facing becomes an integral part; (2) elimination of the 1″ air space between the veneer and sheathing, thereby reducing the fire hazard and preventing the circulation of air currents within the walls; (3) effective retarding of the infiltration of air and moisture by automatically overcoming the possibility of partially filled vertical mortar joints.

Steeltex Super-Wall System

This system of exterior wall construction is a combination of: (1) Reinforced monolithic exterior masonry walls; (2) Efficient insulating material placed between the studs; and (3) Reinforced interior plastered surfaces. This system provides greater structural strength, comfort and fire-safety.

advantages—The Steeltex Super-Wall System provides certain advantages which are a definite contribution to modern building construction. These advantages have been proved by many satisfactory installations and the system has been tested and approved by leading architects, engineers, and building contractors. The major benefits of the Steeltex Super-Wall System are as follows:

Strong Reinforced Sheathing
Greater Fire Protection
Protection Against Infiltration of Air and Moisture
Economical in Cost
Increase in Home Comfort
Reduction in Fuel Costs
Greater Sound Insulation
Reinforced Plaster Walls
Reduction in Maintenance Costs
Increased Resale Value

Despite the numerous advantages which the Steeltex Super-Wall System provides, its completed cost compares favorably with other methods of masonry veneer construction and only standard materials and methods are employed.

STEELTEX for Masonry Veneer

Specifications for Reinforced Masonry Veneer Construction

scope of work—Here, list and locate all of the respective areas to be covered.

framing—Framing shall be spaced accurately (12″)—(16″) on centers. (Standard recommendations of the U. S. Dept. of Commerce and the National Lumber Mfg. Assn. for all wood framing should be followed.) All framing shall be braced temporarily to hold it plumb and in alignment until brick work has been completed.

materials—(Brick)—(Stone)—Specify type of brick or stone, sizes, shapes, quality, color, finish, etc.

mortar—All mortar shall be mixed by measured volume in the proportions of one part Portland Cement, three parts clean, sharp sand, and 10 per cent hydrated lime.

reinforcing sheathing—The sheathing shall be Pittsburgh Steeltex Style 38-16 delivered to the building site in the original manufacturer's packages.

application—General—Pittsburgh Steeltex Style 38-16 shall be attached direct to studs. Start first width at sill line and extend around building. The second width shall lap first at least 2″ (shingle fashion), wire to lap against wire. All horizontal laps midway between studs shall be tied with an 18-ga. tie wire. Vertical joints shall be staggered and lapped 3″ over a stud with a 2″ strip of backing along edge of one piece cut away to form a selvage edge of wires which overlap the preceding piece. Vertical joints shall not be made at corners under or over openings.

Steeltex shall be bent around all corners and nailed to the first stud beyond the corner. It shall be carried up to the openings or under the molding of all doors and windows.

nails—Steeltex reinforcing sheathing shall be nailed with Steeltex Furring Nails placed over horizontal wires at 6″ intervals vertically on each stud and driven to penetrate not less than 1″. Nail around all door and window openings at 4″ intervals.

placing masonry veneer—The (brick)—(stone) veneer shall be of one course. Back of (brick)—(stone) shall be laid 1″ from face of studs. Space between the Steeltex and the veneer surface shall be filled with cement mortar as each course is laid. The (brick)—(stone) shall be laid in full beds of the same mortar with the back-up mortar well spaded in with the trowel, so as to assure bond of veneer surface and Steeltex.

Super-Wall System

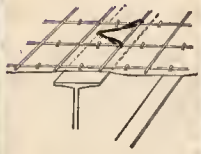
Specifications for the Super-Wall System are the same as for Reinforced Masonry Construction, plus specifications for installing insulation (see our publication DS-132) and Steeltex for Plaster Type "A."

Over Wood Framing (see Page 4 of this catalog).

STEELTEX for Floors

Steeltex in rall form is easily loid ond pravides a safe wolking surface ance it has been attached ta the joists.

Clipping to joists after Steeltex flaar lath has been drawn tout.



Detail showing methad of installing floar lath clips.

Steeltex floor lath assures o minimum amaunt of sag while the cancrete is being poured.

STEELTEX for Floors

Pittsburgh Steeltex Floor Lath is a combined form and reinforcing which offers important structural advantages and economies in light-slab concrete floor and roof construction. It will give maximum reinforcing value and facilitate proper curing of the concrete through the maintenance of the original water-cement ratio, at the same time effecting important savings in application cost and in the reduction of loss of material.

The reinforcing element of Steeltex Floor Lath is composed of 12-ga. electrically-welded, galvanized steel wire reinforcing mesh. This mesh is attached to a tough cord-reinforced water resistant backing by crimped stitch wires which also space the reinforcing mesh the proper distance from the backing to permit complete embedment of the reinforcement in the slab.

The cord-reinforced backing is of ample strength not only to support the concrete while it is being poured, but also to afford a safe walking surface, once Steeltex has been attached to joists. Being water-resistant, the backing minimizes loss of water and fine aggregate through leakage, with a further advantage in the protection it affords to floors below. Droppings are minimized, clean-up expense is eliminated, and work can proceed in safety even while the concrete is being placed on the floor above.

Advantages of Steeltex method of application

The laying of Steeltex Floor Lath is accomplished with a minimum of time and labor. The conveniently handled rolls 4 ft. wide x 125 ft. in length, are simply unrolled over joists and cut to length. It is then attached to end joists drawn taut with a stretcher furnished for this purpose and fastened by clips to the intermediate joists.

The speed of work is also facilitated by the ability to cut openings for pipes, etc., with snips or knife instead of saw, chisel and auger. Rolls can be more quickly laid per unit or area than can sheets, and with less waste, since overlapping is minimized.

Properly installed, there is no excessive sag when concrete is being poured, effecting considerable saving. Steeltex Floor Lath extends in one piece across the entire panel or bay, giving lateral stiffness, continuity of reinforcing and distribution of loads over a number of joists or beams. The automatic embedding of the steel wire fabric in the concrete, coupled with its scientific design and spacing provides maximum reinforcing value and promotes development of the full strength of the slab.

Equally adaptable to floors and roofs

The advantages of Steeltex Floor Lath as a reinforcement and form for light-slab floor construction apply equally in the construction of concrete and gypsum roofs. The material is easily laid on sloping or curbed roof surfaces and the fibrous backing is particularly adapted to roof construction, since it helps check condensation on the underside of the slab, thus protecting the steel joists and beams and the plaster ceiling beneath.

Specifications for Pittsburgh Steeltex Floor Lath

Before installing Steeltex Floor Lath, joists shall be rigidly bridged and end joists securely anchored in accordance with Steel Joist Institute specifications.

Steeltex Floor Lath (a 3″ x 4″ mesh, 12-ga. cold-drawn, electrically-welded, galvanized wire fabric, attached to a cord-reinforced water-resistant backing, furnished in rolls 4′ x 125′) shall be unrolled across the joists to the desired length from the outer or bearing walls of the building, and shall be fastened every 12″ along the end joist with special clips furnished with the Steeltex.

Steeltex Floor Lath shall be stretched longitudinally across the joists by a special stretcher, and clipped securely every 12″ along the bearing to which the stretcher is attached. Steeltex Floor Lath shall then be clipped to each intermediate joist with two clips when joists are spaced 16″ and over, and one clip per width of roll for joist spacing under 16″. Each clip shall face in the opposite direction from the clip adjacent to it.

Where end laps are necessary, Steeltex Floor Lath shall be lapped at least 1 ft., directly over a joist. Side laps shall be not less than 4″.

Note: Write PITTSBURGH STEEL PRODUCTS COMPANY, Grant Building, Pittsburgh, Pa., for installation instructions and test information.

General view of Steeltex Floor Lath in place.

Welded Wire Reinforcement for Floors

Floor and column reinforcing.

Cross section of the electric weld which fuses the wires into one homogeneous section, assuring unimpaired strength and maintained wire spacing.

Pittsburgh Steel Products Company supplies Welded Reinforcement for all types of concrete construction. This is no ordinary "steel reinforcement." It is an electrically-welded wire fabric of square or rectangular mesh, made from high grade cold-drawn steel wire of high tensile strength and proper ductile qualities.

The welding produces an absolutely rigid connection at every joint. Distortion of fabric is prevented and, since there are no wraps, ties or clips where members are joined, the concrete is allowed to flow freely around and completely cover every wire. The result is a perfect bond between concrete and reinforcement. Rolls are of lengths which provide an unbroken continuity of reinforcement extending across entire width of most buildings. Full effectiveness of reinforcement is thus obtained at every section of the slab, while the almost complete absence of laps and splices reduces the required quantity of steel to a minimum.

Practically any desired size of mesh and gauge of wire may be obtained. (See table of standard styles.) This wide range of selection adapts the material to a multitude of uses, including reinforcement of all types of concrete floor slab construction, concrete driveways, sidewalks, retaining walls; beam and column wrapping; fireproofing of steel framework; temperature reinforcement in top or finish layer of cement or composition floors, etc.

Method of ordering—All orders for Pittsburgh Welded Wire Reinforcement should include the following necessary information: Gauge and spacing of both longitudinal and transverse wires (Style No.); length of roll or sheet; center to center width of roll or sheet; whether plain or galvanized finish; and if other than a "close overhang" is desired.

finish—Plain or Galvanized as specified. (Plain fabric will be shipped on all unspecified orders.)

tensile strength—Wire: Plain finish, 70,000-85,000 lbs. per sq. in.; galvanized finish, 55,000-70,000 lbs. per sq. in. Galvanized fabric available 70,000 lbs. or over if specified.

widths—Rolls or Sheets.

Spacing Longitudinal Wires	Maximum Width
2 in.	80 in.
3 in.	114 in.
4 in.	148 in.
6 in.	156 in.

All widths are measured from center to center of outside longitudinal wires. Transverse wires have close overhang (½" or less) unless otherwise specified and are spaced 2, 3, 4, 6, 8, 12 or 16" as required.

roll lengths—Stock lengths 100 to 300 ft., depending on style. Roll length may be specified on orders not shipped from stock.

PITTSBURGH STEEL PRODUCTS COMPANY

A Subsidiary of Pittsburgh Steel Company

Grant Building—Pittsburgh 30, Pa.

BRANCH OFFICES: NEW YORK, COLUMBUS, DETROIT, CHICAGO, SAN FRANCISCO, PHILADELPHIA, LOS ANGELES, PITTSBURGH, ATLANTA

TRADE MARK
SIMP-L-ON
PRODUCTS
ERECTED FAST BUILT TO LAST

SIMP-L-ON

FURRING SYSTEM

•

SPEEDIER CONSTRUCTION

INSURES DRY PLASTER

MORE RIGID

PERFECTLY PLUMB

LOWER COST

OVERCOMES PRESENT FAULTS

NO CORROSION

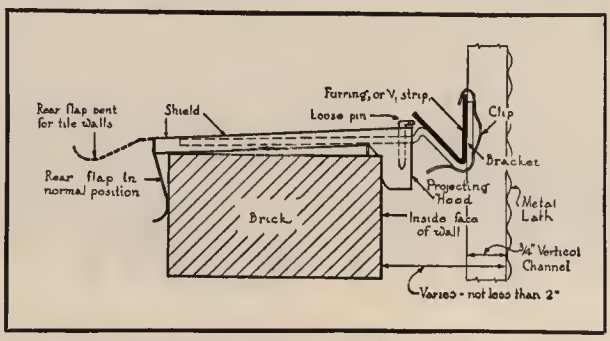
•

SIMPLON PRODUCTS DIVISION
CONVER STEEL & WIRE COMPANY, INC.
621 East 132nd Street • • New York 54, N. Y.

SIMP-L-ON FURRING SYSTEMS *eliminate*

Simp-L-On is a system of steel wall furring for any type of new masonry wall construction—brick, block, rubble stone, or reinforced concrete. It was invented and developed by an architect as a result of unfortunate experiences with leaky masonry walls and dissatisfaction with other types of furring.

Simp-L-On consists of a metal shield set in the masonry with an adjustable bracket which is inserted



Section through inside common brick showing proper installation of Type "A" Shield. Type "B" Shield with front flap for nailing to form should be used for concrete walls.

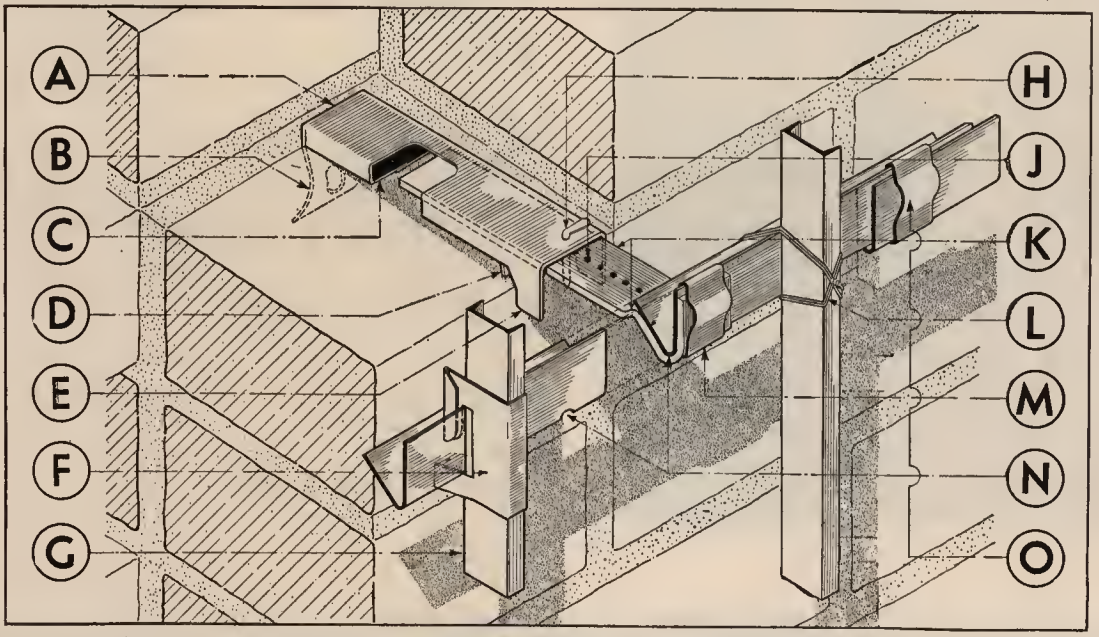
in the shield, and a horizontal furring strip of such shape that it fits snugly into the bracket and is secured in place by a resilient clip.

The combination of shield, bracket, and V-strip provides a rigid, free-standing furring of non-corrosive materials that is adjustable to within ⅛" of vertical furring surface. It thus assures the objective of all furring: to provide an air space and eliminate direct contact between masonry and plaster, and is the best insurance against damp plaster surfaces yet devised.

Simp-L-On is a labor saving system, economical in cost. Competitive because Simp-L-On materials form only a small basic part of the complete furring and lathing. Costs less in place than masonry or ordinary metal furring and is only slightly higher than wood furring.

The following pages explain in detail the various parts which form the Simp-L-On System. Cooperation between the mason and furring contractors is not essential providing the specifications are followed but such cooperation will in many cases result in a substantial saving to both contractors.

Send for a demonstration set which will prove to your own satisfaction the simplicity and practicability of the Simp-L-On System of wall furring.



TYPE "A" SHIELD FOR BRICK MASONRY

A—22 gauge galvanized metal shield built into brickwork.
B—Spring flange, clamping shield to brick.
C—Shield entirely enclosed to prevent clogging by mortar.
D—Leg under front end of shield provides pitch and prevents water flowing toward plaster.
E—Projecting hood serves three purposes—provides alignment of shields in relation to face of masonry—prevents moisture on face of wall reaching Bracket "K" snd prevents mortar droppings clogging opening.
K—Adjustable Bracket made In any length desired. Note crimp at front end of bracket to provide moisture stop.
J—Holes for adjustment—¼ in. on centers.
H—Removable pin for bracket adjustment.
N—Horizontal furring member with weep holes.
M—Metal Spring Clip securing horizontal member to Brackets.
G—Vertical Chsnnels (spaced as desired) to which metal lath is secured.
F—Simp-L-On Channel Clip for securing channels to horizontal member.
L—Ordinary method (wiring) of securing vertical channels to horizontal member.
O—Method of overlapping strips and clipping together to form continuous horizontal member.

SPECIFICATIONS

Under Heading of Mason Work—This contractor shall furnish and install on inside face of all masonry walls to be furred and plastered, 22 gauge galvanized metal shields Type ("A" for brick, tile or stone masonry, "B" for concrete). Shields to be similar and equal to those manufactured by the Simplon Products Division of Conver Steel & Wire Company, Inc., 621 East 132nd Street, New York 54, N. Y. These shields shall be built in not over 4 feet on centers on continuous horizontal lines, and not over 5 feet on centers vertically, starting not over 1 foot above floor and approximately 1 foot below finished ceiling. There shall be at least two horizontal rows on all wall sections to be furred.

Under Heading of Furring—This contractor shall furnish and insert in each shield built in by Mason Contractor, 12 gauge galvanized brackets of sufficient length to provide the air space called for on plans. Standard brackets may be used for continuous furred spaces not exceeding 3 inches in depth. Provide brackets of heavier gauge for continuous furred spaces exceeding 3 inches in depth.

Furnish and erect horizontal V-strips of 18 gauge galvanized material to fit projecting end of bracket. Clip V-strips to bracket with resilient clips and clip overlapping ends with similar clips to form continuous strips. After securing horizontal strips in place, plumb same to within ⅛ inch of established plane of furring. Form interior and exterior angles by cutting rear leg of V strip and bending to desired angle. To these horizontal strips erect ¾ inch (or 1 inch) vertical furring channels spaced 16 inches on centers (exact spacing dependent on type of lath) fastened to V-strip by means of 22 gauge galvanized channel clips.

All of above to be similar and equal to Simp-L-On System as manufactured by Simplon Products Division of Conver Steel & Wire Company, Inc., 621 East 132nd Street, New York 54, N. Y.

THE MODIFIED SIMP-L-ON SYSTEM

The Modified Simp-L-On System is an adaption of the original and completely mechanical Simp-L-On System and was designed for use in place of non-fireproof furring where low cost of construction is important.

Modified Simp-L-On retains the adjustable and labor saving shield and bracket, but makes use of wiring in place of clips and substitutes ordinary painted channel for the horizontal V-strip. Modified Simp-L-On provides for a minimum furring space to metal lath of 1½ inches, and is adjustable by means of standard or longer brackets to any depth of furring required.

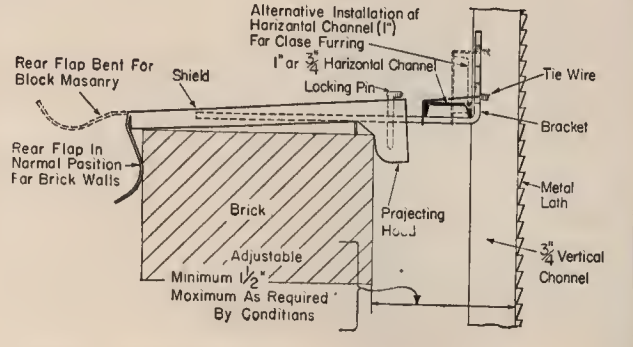
SPECIFICATIONS

Under Heading of Mason Work—Use same specifications for shields as shown above for Simp-L-On.

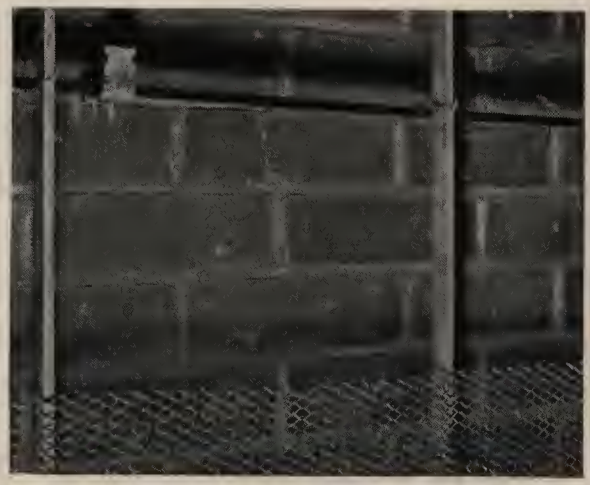
Under Heading of Furring—This contractor shall furnish and insert in each shield built in by Mason Contractor, 12 gauge galvanized brackets of sufficient length to provide the air space called for on plans. Standard brackets may be used for continuous furred spaces not exceeding 3 inches in depth. Provide brackets of heavier gauge for continuous furred spaces exceeding 3 inches in depth.

After insertion of brackets plumb same to within ⅛ inch of established plane of furring. Wire 1 inch (¾ inch) horizontal channels to brackets. To the horizontal channels wire ¾ inch vertical channels spaced 16 inches on centers.

Shields and brackets to be similar and equal to product of Simplon Products Division of Conver Steel & Wire Company, Inc., 621 East 132nd Street, New York 54, N. Y.



Section



Installation

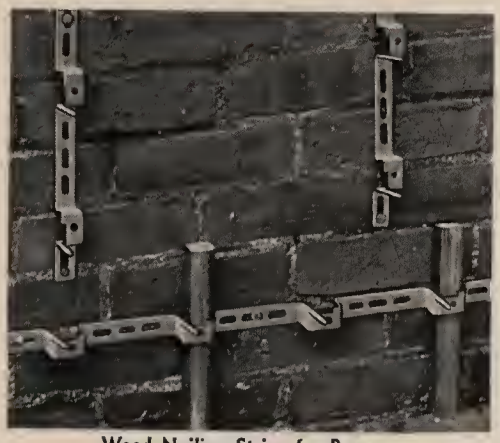
THE MODIFIED SIMP-L-ON SYSTEM

For a partial list of Simp-L-On installations see the next page

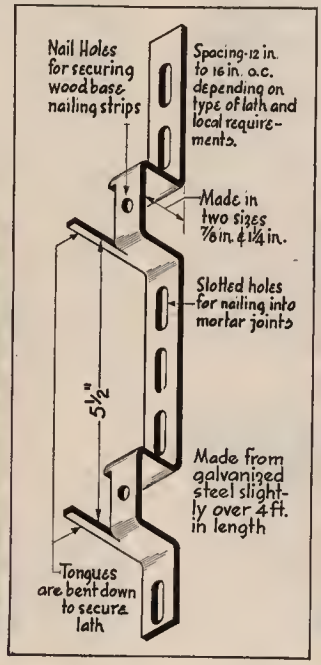
THE TAYLOR BRACKET STRIP

FIREPROOF • SHRINKPROOF • ECONOMICAL

The Taylor Bracket Strip is a galvanized nail-on strip furnished in 4-ft. lengths in two sizes (⅞-in. and 1¼-in. furring). Paper-back or open mesh lath is applied directly to the Taylor Strip and attached by bending prongs extending out from the bracket portion of the strip every 5½ in. There is no waste with the Taylor Bracket Strip as it may be installed vertically or horizontally. Photographic plates and the drawing below illustrate the simplicity, economy and many advantages of the Taylor Bracket Strip. It is suitable for new and old walls, apartments, low cost housing and many other types of construction.

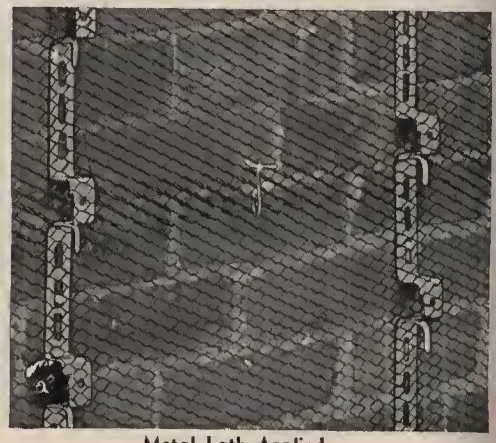


Wood Nailing Strips for Base



Specification

Exterior masonry walls to be furred with galvanized Taylor Bracket Strip spaced 12 in. o.c. Wherever distance to metal lath exceeds 1¼ in., furnish and install the Simp-L-On Furring System, all as manufactured by the SIMPLON PRODUCTS DIVISION OF CONVER STEEL & WIRE COMPANY, INC., 621 East 132nd Street, New York 54, N. Y.



Metal Lath Applied

SIMP-L-ON INSTALLATIONS

The Simp-L-On Wall Furring System has a record of repeated specification and use by architects, a great many of whom have continuously specified Simp-L-On for the past ten years with 100% satisfactory results. More and more architects are adopting Simp-L-On as a standard part of their specifications for new masonry or reinforced concrete construction. The following list of installations represents only a very small number of the total, selected for geographical distribution and for types of construction for which Simp-L-On is ideally suited.

ROCKEFELLER CENTER, NEW YORK, N. Y.—International, Time-Life, Holland House, and Associated Press Buildings.

SCHOOLS—Wilmington, Del.; Montclair and Westfield, N. J.; Dobbs Ferry, East Park (Hyde Park), Poughkeepsie, Yonkers, and Bayshore, N. Y.; Norwalk, Greenwich, Hartford, Ridgefield, and Danbury, Conn.; Paris, Ky.; Reading and Pottstown, Pa.; Montpelier, Vt.

COLLEGES—Brooklyn College (entire group); Wooster College; Denison University; Stevens Institute of Technology; Medical College of Virginia; Baldwin-Wallace; Manhattan School of Music.

FEDERAL BUILDINGS—San Francisco; New York, N. Y.; Ketchikan, Alaska.

POST OFFICES—Sitka, Alaska; Lebanon, N. H.; Lodi, Calif.; Seattle, Wash.; Forest Hills, N. Y.; Vicksburg, Miss.; Whitinsville, Mass.; Wilmington, N. C.; College Station, Tex.; Marquette, Mich.; Fond du Lac, Wis.

CHURCHES—St. Luke's, Schenectady, N. Y.; St. Theresa, Richmond Hill, N. Y.; St. Agnes, Rockville Center, N. Y.; St. Andrew's, Astoria, L. I.; St. Paul's, Clifton, N. J.; St. Agatha's, Brooklyn, N. Y.

HOSPITALS—New York, N. Y.; Kingsport, Tenn.; Jersey City, N. J.; Tupelo, Miss.; Provo, Utah; Richmond, Va.; Ada, Okla.; Warm Springs, Ga.; Central State Hospital, Petersburg, Va.

Banks, Theatres, Stores, Libraries, Residences, Institutions, City Halls, Court Houses, Lodges, Hotels, Police Stations, Firehouses, Laboratories, Industrial and Sewage Plants and Telephone Buildings.

Additional references will be gladly furnished on request.

SIMPLON PRODUCTS DIVISION

CONVER STEEL & WIRE COMPANY, INC.

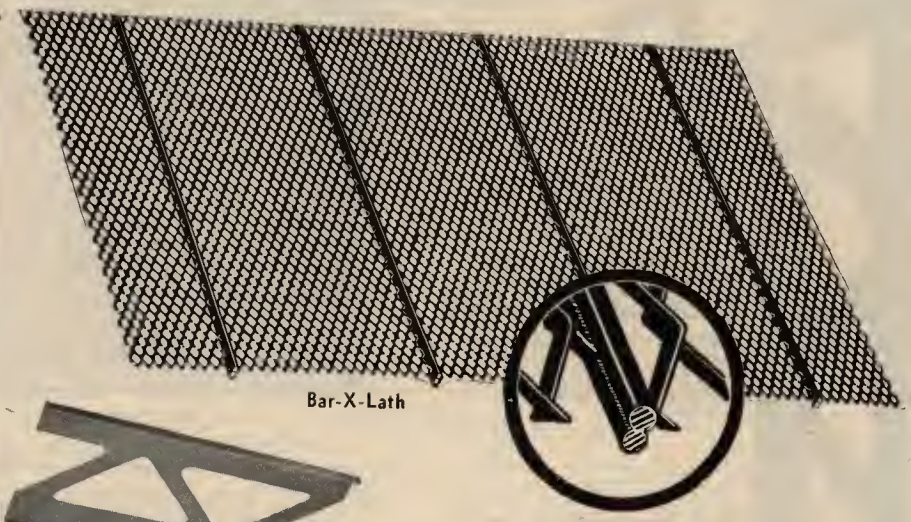
621 East 132nd Street • • New York 54, N. Y.

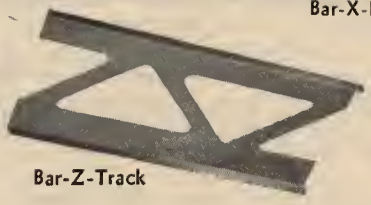
METAL LATH AND ACCESSORIES

BAR-Z-PARTITIONS

Bar-Z-Stud

Bar-Z-Shoe


Bar-X-Lath


Bar-Z-Track

Tie Wire

DESCRIPTION OF PARTITIONS

The Bar-Z-System provides non-bearing, non-burnable, hollow plastered steel stud and metal lath partitions or free standing wall furring. The most striking feature of the Bar-Z-Partitions is the simplicity of parts and method of assembling shown on page 2. The small number and the light weight of the individual units used in Bar-Z-Partitions and Bar-Z-Wall Furring introduces exceptional economy in partition construction, and insures a uniform standard of workmanship. Pipes and conduits can be run or threaded through Bar-Z-Studs. There are no chases to cut for electrical or heating work where Bar-Z-Partitions are used. For simplicity in construction, rigidity, saving in weight of structural framework, passages for pipes, ducts and conduits, high resistance to the penetration of sound, fire and impact resistance, and no breaking of the waterproof seal on furred walls, specify Wheeling Bar-Z-System Partitions. Literature upon request.

SERVICES

The Wheeling Corrugating Company offers the architect the knowledge accumulated from years of intensive research and the experience gained from designing and building. Our Engineering Research Design Staff will help you solve your problem in the use of Wheeling Products. An inquiry will receive prompt attention.

1. ADAPTABILITY—The problem of concealing conduits, cables, wires, pipes, and air ducts is easily solved with the Wheeling Bar-Z-System of Hollow Plastered Partitions.

2. FIRE AND IMPACT RESISTANCE—Bar-Z-Partitions, properly installed, are given a one- to two-hour fire rating, depending on plaster used. Consisting of one complete unit, the Wheeling Bar-Z-Partition dissipates the shock of a sudden impact at any point over its entire structure. Ideal construction to resist earthquakes, explosions, etc.

3. GREAT STRENGTH—The truss-like steel studs and the specially stiffened Bar-X-Lath, give Bar-Z-Partitions superior strength and "bridging" ability over the usual block or small unit type of partition.

Complete Stocks Carried in Warehouses and Mill

4. MANY ECONOMIES—Bar-Z-Partitions cost no more than block or masonry types yet offer many economies in construction because of their easier erection and lighter weight.

5. SOUND INSULATION — "A Bar-Z-Partition, weighing 16 lbs. per square foot, has the same sound insulating value as a clay or Gypsum wall weighing 22 lbs. to the square foot." (Signed) Dr. Paul E. Sabine, River Bank Laboratories.

6. EASE OF CONSTRUCTION—The simplicity and small number of parts of Bar-Z-Partitions make for fast construction and easy alterations.

7. LONG SERVICE — Fire-safe Bar-Z-Partitions are also termite and rodent proof. Bar-Z-Studs will not warp, swell nor split; and when lathed with Wheeling Bar-X-Lath they are held firmly in place, eliminating the principal cause of plaster cracks.

WHEELING CORRUGATING COMPANY
WHEELING, W. VA.

WHEELING BAR-Z-SYSTEM

BAR-Z-STUD

Bar-Z-Studs are 16-gauge cold formed steel channels having alternately opposed triangular openings in the web to form a trusslike member. These studs are made in lengths up to 20 feet. Floor and ceiling tracks are of similar design but slightly wider. 3¼ and 4 in. tracks are furnished in lengths of 10 ft. Tracks for 6⅛ in. studs are furnished in lengths of 16 ft. All Bar-Z-Studs and Track are furnished painted black.

The following table shows stud widths, weights and recommends spacing for given heights, when used with Bar-X-Lath. Heights greater than 20 ft. require splicing in field.

Stud Width Overall	Weight per Thousand Lineal Feet Stud-or-Track	Finished Plastered Wall Thickness	Permissible Heights for Indicated Spacing		
			24 in. o.c.	19 in. o.c.	16 in. o.c.
3¼ inches	494 lbs.	4¾ inches	13 feet	18 feet	21 feet
4 inches	660 lbs.	5½ inches	16 feet	20 feet	22 feet
6⅛ inches	850 lbs.	7⅝ inches	20 feet	24 feet	26 feet

BAR-Z-SHOES

Bar-Z-Shoes are used to attach the studs to the floor and ceiling tracks. Four shoes required for each stud.

Top and bottom shoes for 3¼ and 4 in. studs are interchangeable, are 5 in. long and weigh 72 lbs. per thousand pieces. For 6⅛ in. studs top shoes are 12 in. long, bottom shoes 4½ in. long and weigh 356 lbs. and 147 lbs. per thousand pieces respectively.

TIE WIRE

Tie wire for attaching the shoes, grounds, lath and other units to the studs is 18-gauge zinc coated. It is packed in cartons weighing approximately 25 lbs.

TRACK FASTENINGS

In the erection of a Bar-Z-System, the track is aligned and then securely fastened to floor and concrete slab ceiling with concrete Stub Nails or 1¼ x $\frac{3}{16}$ in. Rawl-Drives. (For new suspended ceiling work, the ceiling track is wired to the Wheeling Cold Rolled Channels.)

BAR-X-LATH

Bar-X-Lath consists of Diamond Expanded Metal Lath to each sheet of which 4 pairs of No. 11 rods, spaced on 7-in. centers are welded. The rods forming each pair are welded to each other through the meshes of the lath longitudinally of the sheet—thus forming an extremely rigid sheet which acts as a cross bridging between studs. Bar-X-Lath is furnished weighing 3.4, 4.0 or 4.6 lbs. per sq. yd. The 3.4 lb. is generally used for most types of construction. The 4.0 or 4.6 lbs. are recommended for severe or unusual conditions.

Bar-X-Lath is especially designed for use on 24 in. spacing of studs and for reasons of economy this spacing should be adhered to whenever heights as noted in above table will permit.

ERECTION

These stock units are usually erected on the job by metal lathers who are skilled in this type of work with the result that the erection proceeds more rapidly than other types of partition construction. Furthermore, since lathing mechanics are usually employed on most jobs for metal lath ceiling construction and the placing of corner beads, metal grounds and metal lath furring, all work in these lines can properly be combined in one contract and proceed, to the benefit of the job, under one supervision and responsibility.

Complete stocks carried in Warehouses and Mill.

Wheeling
CORRUGATING COMPANY

WHEELING CORRUGATING COMPANY

WHEELING BAR-X-LATH

FOR REINFORCED CONCRETE FLOORS AND PLASTERED CEILINGS

FOR REINFORCED CONCRETE FLOORS

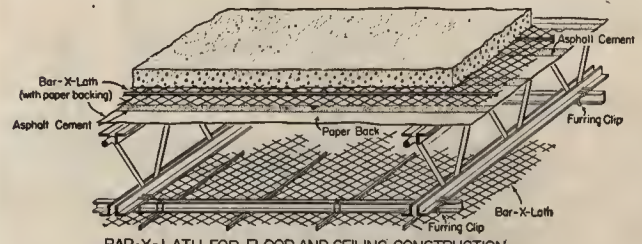
Bar-X-Lath, either with or without paper backing, is ideal as a form and reinforcement for light concrete floors laid over steel joists, Junior Beams or wood joists.

1—Solid Ribs—Each rib consists of two No. 11 cold drawn wires—welded to each other through the meshes of the lath—to form a "stiff beam"—ribs are spaced 7 in. o.c. and have an effective cross-sectional area of .0391 square inch of steel per foot of width, exclusive of the lath meshes. This is standard for all weights of Bar-X-Lath.

2—True Reinforcement—The ribs lay in substantially the same plane as the lath meshes—and are therefore in the position, near the bottom of the slab, where they will be most effective as a reinforcement. Bar-X-Ribs actually reinforce the slab and do not create a plane of weakness above the rib as do the hollow rib laths.

3—On the job—The solid ribs cannot be crushed, as in hollow rib laths, and nesting difficulties are eliminated. The extra stiffness of Bar-X-Lath minimizes sagging between joists and thereby saves wastage of concrete. Bar-X-Lath lays flat and level, handles fast and can be "clipped"—"tied" or "pegged" in place, depending on the type of joist used.

4—Paper Back—Either Kraft paper or waterproof paper, as may be wanted, is attached to the lath meshes by two 1-inch wide strips of asphalt cement spaced equidistant between the ribs longitudinally of the sheet. This feature permits the paper back to "give slightly" between the "asphalt strips" when the slab is poured, and thus allow the wet concrete to penetrate the lath keys between the "asphalt strips" and form a "moulded bond" around and under the solid reinforcing ribs. The paper back retains the moisture in the slab until "set"; aids in the "normal curing" of the concrete—and prevents "Honeycombing" on the under side of the slab due to dripping.



BAR-X-LATH FOR FLOOR AND CEILING CONSTRUCTION

5—Safe Live Loads—The unusual strength of light floor slabs reinforced with Bar-X-Lath is indicated by the following table. This table is as calculated by Burtis Brown, C.E., Structural Engineer, 45 Franklin St., Boston, Mass., using "The Exact Formula." In these calculations the slab is considered as continuous over 3 or more spans. The concrete is 1-2-4 mix having an ultimate strength in compression of 2000 lbs. per square inch. The working stress for steel is 20,000 lbs. per square inch as in cold drawn wire.

The reinforcing value of the lath mesh is not included in the calculations. It is significant that in the 1½-inch slab the concrete is "stressed" to only about 500 lbs. per square inch. This becomes progressively less with the increased thickness so that in the 3-inch slab, the "stress" is well under 300 lbs. per square inch. Thus—all working stresses are well within safe limits and provide an ample margin or factor of safety.

TABLE OF SAFE LIVE LOADS IN POUNDS PER SQUARE FOOT UNIFORMLY DISTRIBUTED—WEIGHT OF SLAB DEDUCTED

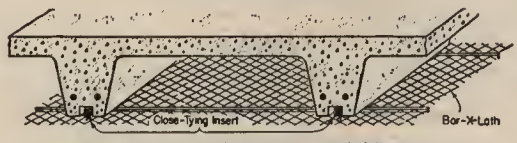
$$M = \frac{W1^2}{12}$$

Span of Slab in inches	Thickness of Slab, in.				Weight of Bar-X-Lath Recommended
	1½	2	2½	3	
16	433 lb.	636 lb.	835 lb.	1022 lb.	3.4 lb. per sq. yd.
20	269 lb.	398 lb.	523 lb.	640 lb.	3.4 lb. per sq. yd.
24	181 lb.	269 lb.	354 lb.	433 lb.	3.4 lb. per sq. yd.
27	139 lb.	207 lb.	273 lb.	334 lb.	4.0 lb. per sq. yd.

For—$M = \frac{W1^2}{10}$ Use 5/6 of above values.

For—$M = \frac{W1^2}{8}$ Use 2/3 of above values.

FOR CEILINGS



BAR-X-LATH FOR CLOSE TIED HUNG CEILING

Bar-X-Lath is particularly suited for use with wide spaced furring or for "close tied" attachment direct to the underside of Bar-Joist or "Ribbed Concrete" Construction.

Economy Plus Quality—The extra rigidity and strength of Bar-X-Lath, makes practical the use of wider than normal spaced furring; prevents sagging while the plaster is wet, and eliminates "shaking off" of plaster from vibration during application. Many building codes do not permit attachment of lath directly to the underside of Bar Joist Construction, but require channel furring for fireproofing. The wider spacing of furring made possible by Bar-X-Lath will reduce the "extra cost of furring" proportionately.

No Dust Streaking—The solid ribs lie in substantially the same plane as the lath keys, are completely embedded in plaster and permit uniform thickness and keying of plaster as in diamond mesh lath. This prevents the "dust streaking" which frequently appears in jobs where flat rib or hollow rib lath has been used and in which the pattern of the rib, shows through the finished plaster ceiling as in wood lathed jobs.

Recommended Weights—The following table shows weights of Bar-X-Lath recommended for ceilings for various spacings of furring or joists.

TABLE OF BAR-X-LATH FOR CEILINGS

Span of joists or spacing of furring, in inches	Weight of Bar-X-Lath recommended
16	3.4 lb. per sq. yd.
19	3.4 lb. per sq. yd.
24	3.4 lb. per sq. yd.

WHEELING, WEST VIRGINIA

METAL LATH AND ACCESSORIES

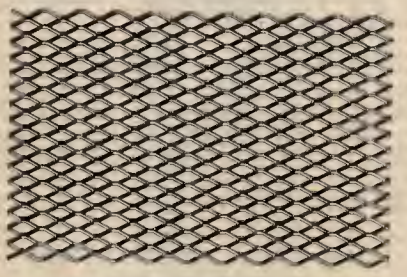
WHEELING PRODUCTS

Diamond Lath, Arch Lath, Three-Mesh Lath, ⅜-in. Rib Lath, ¾-in. High Rib, Combination and Jumbo Laths; Stucco Binder, Wide Apron, Wing Type, Bullnose and Expanded Corner Bead; Plain and Curved Point Base Screeds; Cornerite; Cold Rolled Channels.

Picture Mould, Hank Tie Wire, Stub Nails, Wall Ties, Wall Plugs, Wing Bead Clips; Coal Doors; Ash Pit and Clean-out Doors.

For Bar-Z-System, see Sweets File Index.

WHEELING DIAMOND LATH

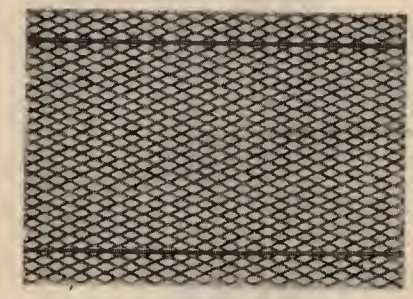


Wheeling Diamond Lath is the stiffest lath of its type manufactured. All sheets are flat and have perfectly straight and parallel sides. Size of sheet, 27 x 96 in.; packed 10 sheets per bundle, 20 sq. yds.

Furnished in weights 2.5, and 3.4 lbs. per sq. yd. Also galvanized in weights 3.4 lbs. per sq. yd.

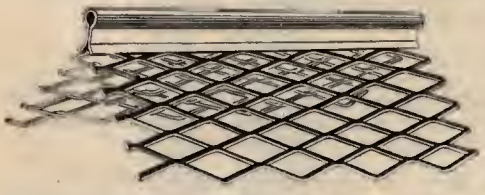
Wheeling Diamond Lath, unless otherwise specified, is always coated with our special dip. Dip adheres closely, giving lath a thin coating impervious to rust.

WHEELING BAR-X-LATH



Bar - X - Lath — the Diamond Mesh Lath which is reinforced with solid steel ribs consisting of four pairs of No. 11 rods spaced on 7-in. centers. Bar-X-Lath is an improved type of ⅜-in. rib lath and is an exclusive patented product. Weight — 3.4 lbs., 4.0 lbs. and 4.6 lbs. painted. Size of sheets—27x96 in. 10 sheets, 20 sq. yds. per bundle. May be obtained with paper back for use on bar joist construction.

WHEELING EXPANSION CORNER BEAD



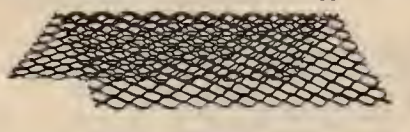
The expanded metal flange permits the plaster to key through to the lath beneath and form a strong bond.

Lengths: 8, 9, 10, and 12 ft. 2½-in. flange, crated weights per 1000 lin. ft., 26 gauge galvanized—230 lbs.

WHEELING FLEXBEAD

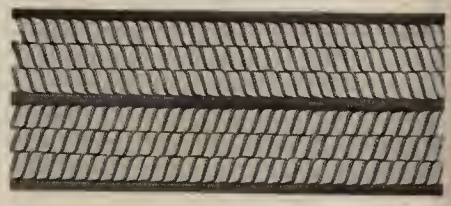
This bead answers the same purpose as Standard Wing Bead but has the additional advantage of being flexible and is particularly adaptable for Arch Work. Furnished in lengths, 8, 9, 10 and 12 feet. 10 Pieces per Bundle. 26 Gauge and 24 Gauge. Galvanized.

WHEELING CORNER LATH



A practical and economical method of preventing corner cracks. Furnished in 8-foot lengths.

WHEELING "3-MESH" FLAT RIB LATH



This new type of flat rib lath is remarkably efficient for binding and reinforcing plaster. The openings between the strands are small, giving a uniform reinforcement and positive bond over the entire surface covered.

Weight: 2.75 lbs., 3.4 lbs., painted.

Sheets, 27 x 96 in.; 10 sheets, 20 sq. yds. per bundle.

WHEELING COMBINATION LATH

Any weight of Diamond or Bar-X-Lath can be furnished with paper backing.

Two styles of paper are available, perforated or plain, as follows:

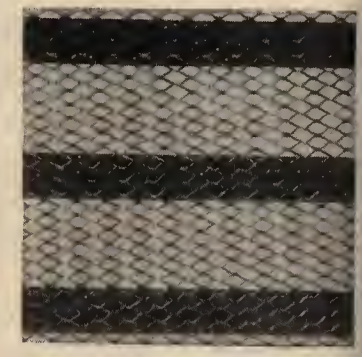
Waterproof insulation—designated as "W."

Kraft insulation — designated as "K."

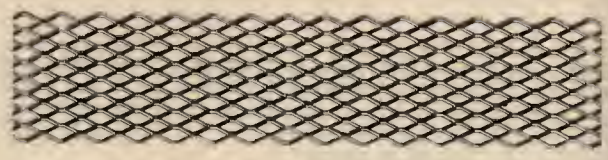
Each of the above types are furnished:

Perforated for "Tie-On" work—designated as "T."

Unperforated for "Nail-On", work — designated as "N."



WHEELING STRIP LATH



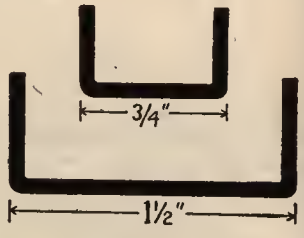
Diamond Mesh Lath in strips. STRIP LATH is essential in reinforcing joints in plaster board construction. Furnished in 8-foot lengths.

WHEELING COLD ROLLED CHANNELS (NEW STYLE)

Cold-Rolled channels for use in suspended ceilings, furring and studding.

Size, in.	Height Flange, in.	Ga.	Wt., 1000 lin. ft., lbs.
¾	15/32	16	300
1½	19/32	16	475

Stock lengths, 16 and 20 ft.



WHEELING CORRUGATING COMPANY, WHEELING, WEST VIRGINIA

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9

INTERIOR METAL TRIM

METAL BASES
COVE MOULDINGS
WINDOW TRIM
WINDOW STOOLS
BLACKBOARD TRIM
CHALK TROUGH
CHAIR RAILS
PLASTER CASINGS

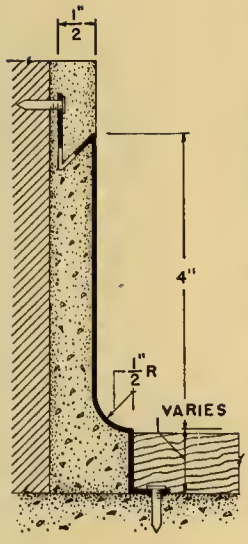
WOLLAEGER STEEL CORPORATION

DIVISION OF AETNA STEEL PRODUCTS CORPORATION

WOLLAEGER STEEL CORPORATION

EXECUTIVE OFFICES: 61 BROADWAY, NEW YORK 6, N. Y. • PLANT: POTTSVILLE, PENNSYLVANIA

WOLLAEGER INTERIOR METAL TRIM



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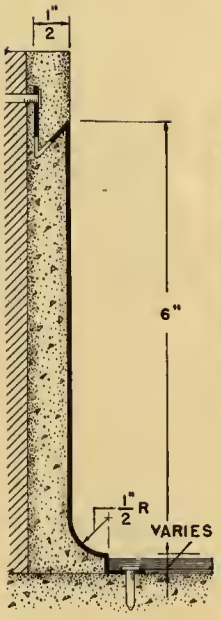
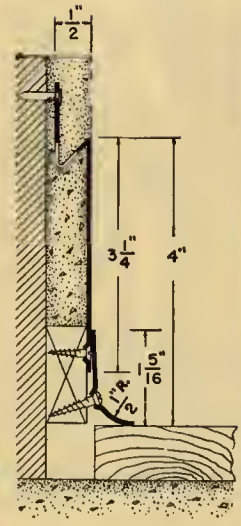
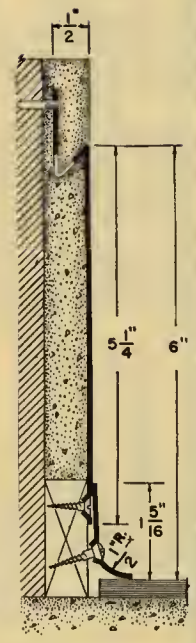


NO. 400 - 6"



NO. 410 - 4"



NO. 410 - 6"

PLASTERED-IN METAL BASEBOARDS

NOS. 400 AND 410 METAL BASEBOARDS ore mode in 4" ond 6" heights, ond fabricoted from 18 gouge golvonized steel. Upper noiling flanges ore perforoted to permit grouting behind boseboord. This plaster flonge can be provided with 3" expanded metol wing.

The floor flonge of the No. 400 Boseboord can be varied from ¼" to ⅞" to suit the thickness of the finished flooring.

The separote cove member of the No. 410 Boseboord permits odjustment for irregulorities along the finished floor line.

Stomped steel corner fittings and end closures ore ovoilable for the No. 400 Boseboard. Cast aluminum corner fittings ond end closures ore ovoilable for the cove member of the No. 410 Boseboord. (See Poge 4 for details of the fittings).

See general notes.

WOLLAEGER STEEL CORPORATION

PLASTERED-IN METAL BASEBOARDS

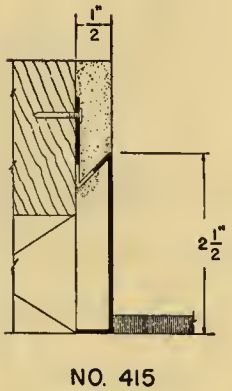
NO. 415 METAL BASEBOARD is fabricated from 18 gauge golvonized steel. The nailing flange is perforated for greater plaster bond.

NO. 470 METAL BASEBOARD Is fabricated from 18 gauge cold-rolled steel. Clips are furnished for fastening to rough framing at 12" to 16" centers, ond are avoilable for either ⅝" or ¾" ploster thickness. This section con also be used as o chair roil ar wainscot cop.

Na corner fittings are necessary for Nos. 415 and 470 Baseboards. Corners can be formed by notching and bending the section at the job site.

NO. 401 METAL BASEBOARD is fabricoted fram 18 gauge galvanized steel. The upper flange is perforated for greater plaster band. Corner fittings are available. (See Page 4 far details).

See general notes.



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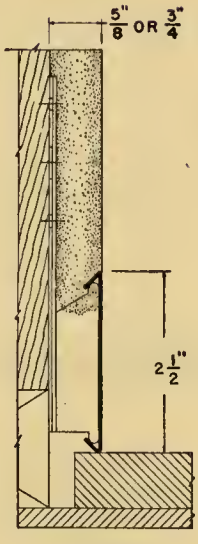

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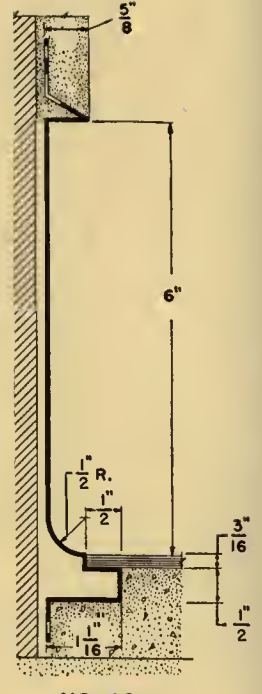
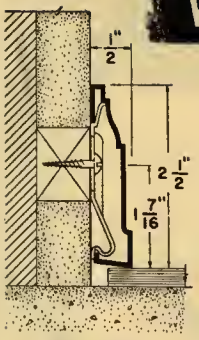


NO. 401

WOLLAEGER INTERIOR METAL TRIM



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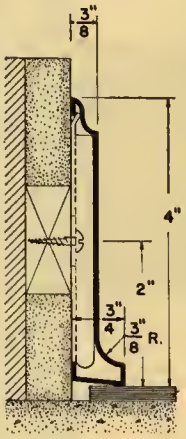
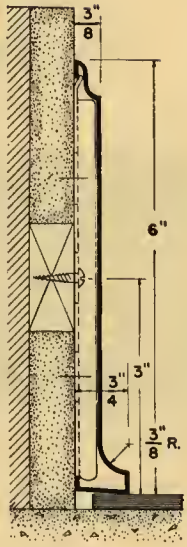
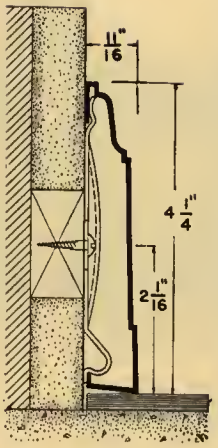


NO. 420-4"



NO. 420-6"



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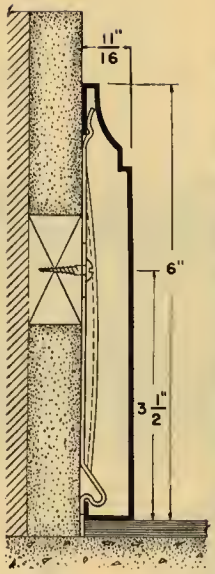


NO. 423

APPLIED METAL BASEBOARDS

These snap-on Baseboards are available in the large variety of profiles and sizes illustrated and are designed to eliminate all exposed fastenings. Clips, furnished for concealed fastenings, have slotted holes to allow for adjustment after Baseboard is applied. If desired, Baseboards can be furnished with counter-sunk holes for oval head wood screws.

All Baseboards illustrated on this page are fabricated from 18 gauge cold-rolled steel.

Stamped steel corner fittings and end closures are available for No. 420 Baseboard—both 4" and 6" heights. (See Page 4 for details). Factory fabricated mitred and welded corner fittings and end closures can be obtained for all other styles. Welded corner fittings are furnished with 6" x 6" legs; end closures are 6" long.

See general notes.

WOLLAEGER STEEL CORPORATION

GENERAL NOTES

All Baseboards are furnished in 10 foot stock lengths.

One coat of rust inhibitive grey primer is applied to the exposed surfaces of galvanized members and to all sides of the cold-rolled steel members.

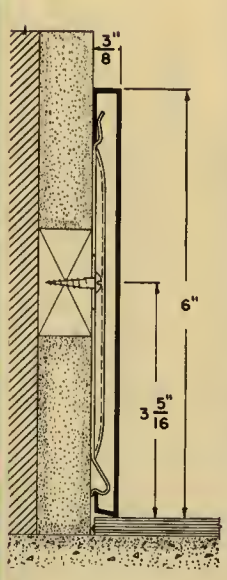
Clips are furnished for all snap-on Baseboards—one clip per foot of base.

Necessary wood screws are provided.

Splice plates are furnished with all Boseboards—one per length of base. (Clips for snap-on members serve as splice and alignment plates).

All Baseboards are formed on rolling machines which offer sharpness of profile and accuracy of dimensions.

The sections detailed are standard stock designs. Inquiries are solicited for special sections to suit individual job conditions.



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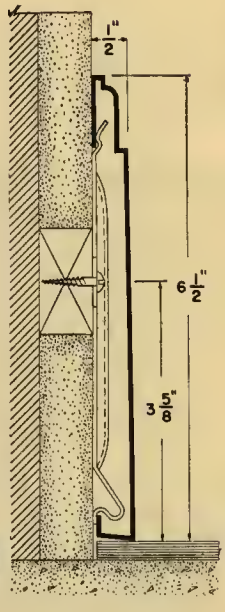

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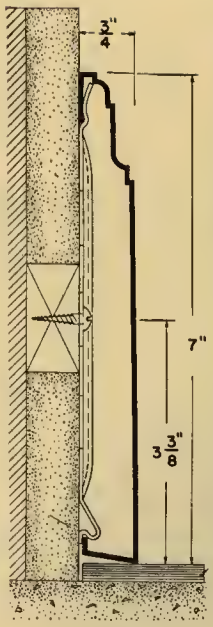

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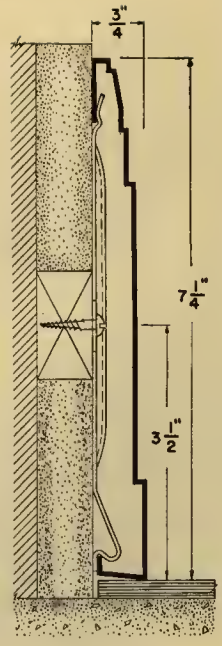
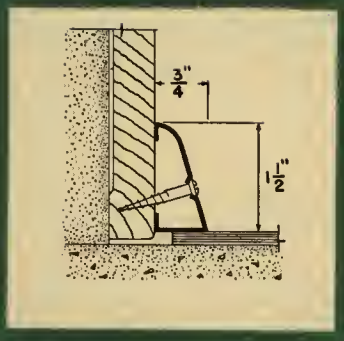


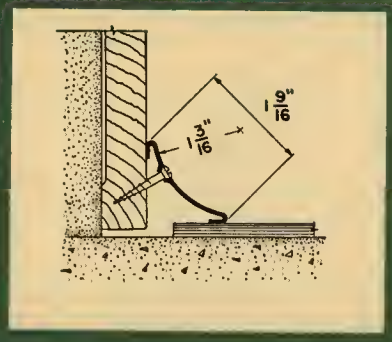
NO. 427

WOLLAEGER INTERIOR METAL TRIM



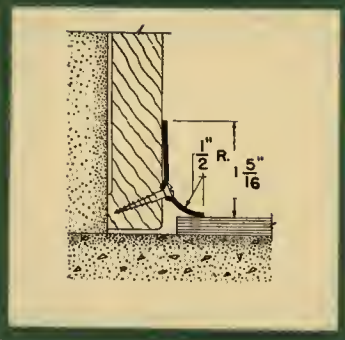
No. 55 METAL SHOE MOULDING

Fabricated from 18 gauge galvanized steel and painted one coat of rust inhibitive grey primer. In 10 foot stock lengths. Screws are provided. Mitred and welded fittings are available.



No. 453 METAL COVE MOULDING

Fabricated from 22 gauge galvanized steel and painted one coat of rust inhibitive grey primer. In 10 foot stack lengths. Screws are provided. Mitred and welded fittings are available.

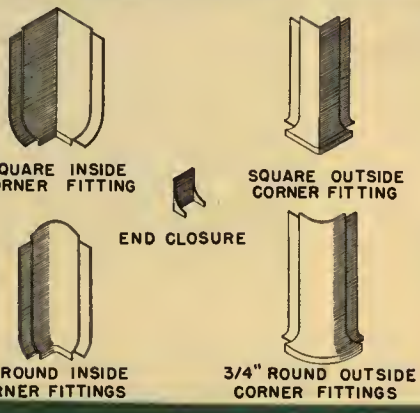


No. 450 METAL COVE MOULDING

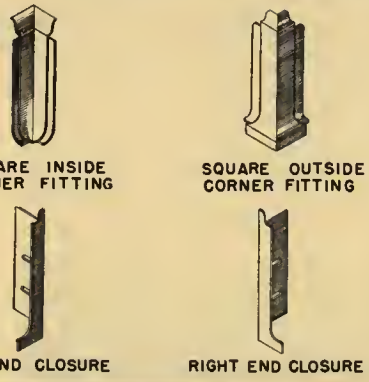
Fabricated from 18 gauge galvanized steel and painted one coat of rust inhibitive grey primer. In 10 foot stack lengths. Screws are provided. Cast fittings are furnished as shown below.

FITTINGS FOR COVE MOULDING AND BASEBOARDS

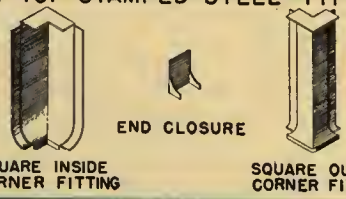
NO. 400 STAMPED STEEL FITTINGS



NO. 420 STAMPED STEEL FITTINGS



NO. 401 STAMPED STEEL FITTINGS

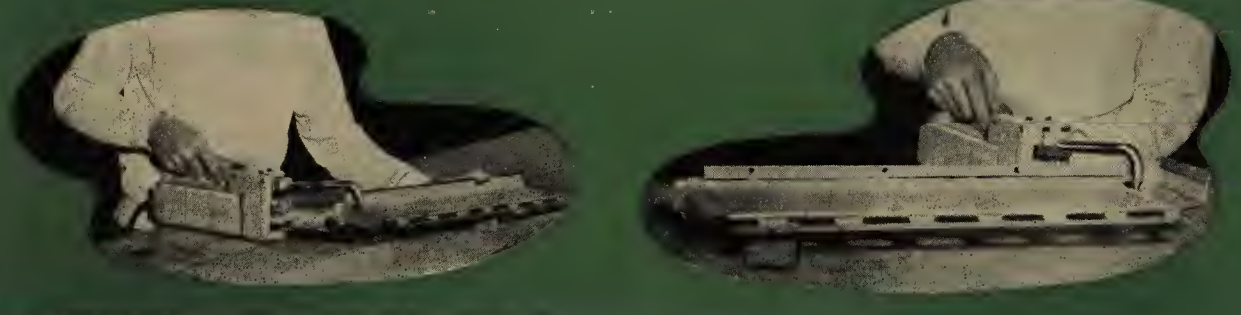


NO. 450 CAST ALUMINUM FITTINGS

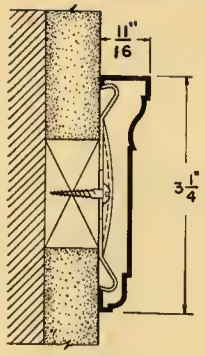
Stamped Steel Corner Fittings and End Closures are available for Nos. 400-401 and 420 Baseboards—both 4" and 6" heights. Portable spot welder may be obtained to attach fittings in order to eliminate exposed fastenings.

SPOT WELDERS

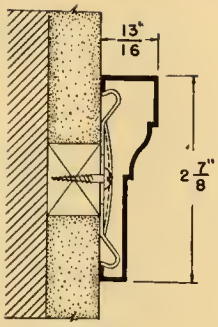
Spot Welders are available on a rental basis for fastening stamped steel fittings to Baseboards. This method of fastening affords a neat finished appearance as it eliminates all exposed fastenings. The Spot Welder is a simple portable tool and is easy to use. Operates on standard 110 volt AC lines.



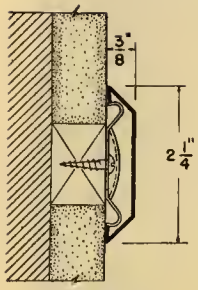
WOLLAEGER INTERIOR METAL TRIM



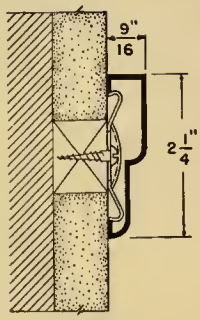
NO. 78
18 GAUGE



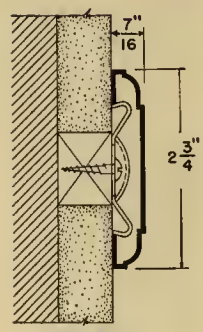
NO. 79
18 GAUGE



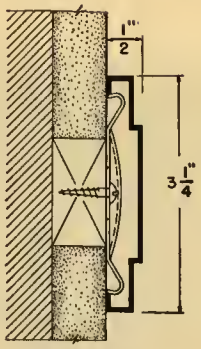
NO. 80
20 GAUGE



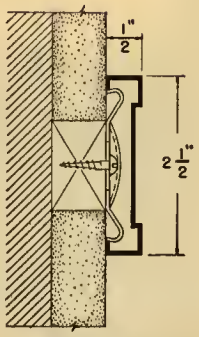
NO. 81
18 GAUGE



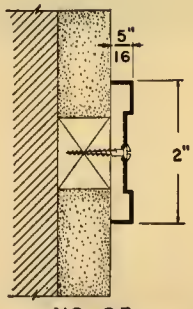
NO. 82
18 GAUGE



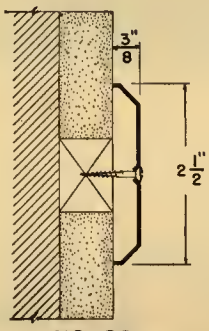
NO. 83
18 GAUGE



NO. 84
18 GAUGE



NO. 85
20 GAUGE

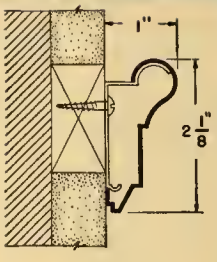


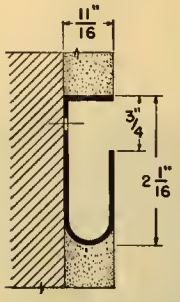
NO. 86
20 GAUGE

METAL TRIM MOULDINGS

Metal Trim Mauldings are adaptable ta a wide variety of uses, such as chair rail, dado moulding, wainscot caps, daar and windaw casings, blackboard, bulletin board, locker, wardrabe and cabinet trim. Cancealed clips eliminate exposed fastenings. The clips have slatted hales ta allaw far adjustment after the maulding is applied and also serve as alignment plates at splice jaints. If desired, moulding can be furnished with counter-sunk holes far oval head waod screws.

Mauldings are fabricated fram cald-ralled steel in gauges indicated, and are painted on all sides with one coat of rust inhibitive grey primer. All mouldings are available in 10 faot or 12 foat stock lengths. Clips and screws are furnished—one per foot af moulding.



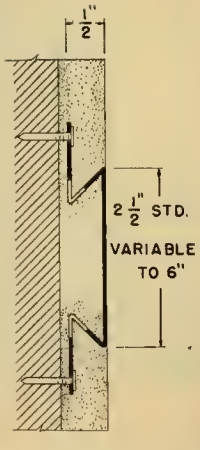


NO. 30 METAL PICTURE MOULDING

This Picture Moulding is fabricated from 18 gauge cold-rolled steel and painted one coat rust inhibitive grey primer. Concealed clips and screws are included. Furnished in 10 foot stock lengths.

NO. 35 CONCEALED PICTURE MOULDING

This heavy duty Picture Moulding is fabricated from 14 gauge cold-rolled steel and painted with one coat of rust inhibitive grey primer. Furnished in 10 foot stock lengths.



NO. 72 FLUSH METAL CHAIR RAIL

This member is fabricated from 20 gauge galvanized steel and painted on exposed surface with one coat of rust inhibitive grey primer. The nailing flanges are perforated for greater plaster bond. Furnished in 10 foot stock lengths.

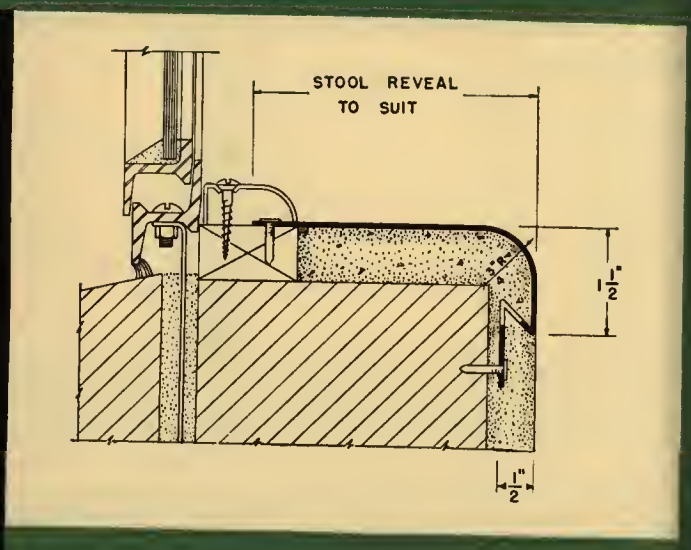
No corner fittings are necessary. Corners can be formed by notching and bending the section at the job site.

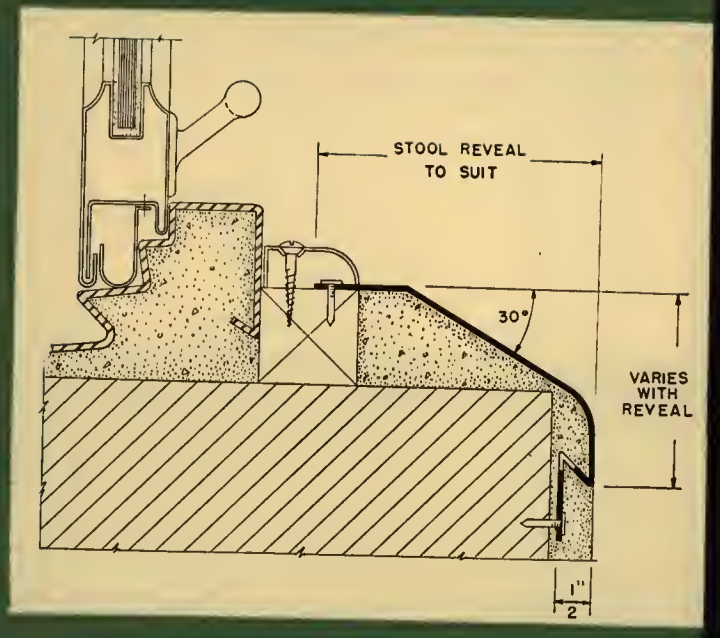
WOLLAEGER INTERIOR METAL TRIM

No. 100 METAL WINDOW TRIM

This trim is adaptable to a wide range of uses. It can be used as a staol alane or far all sides of the window opening. A mitred and welded frame can be furnished. Combinatian frames can be made using this trim for the heads and jambs and No. 120 Trim for the stool.

Trim is fabricated from galvanized steel and painted one coat of rust inhibitive grey primer on the exposed surfaces. We recommend 18 gauge steel for stools less than 5 feet long by 4 inches wide; for longer and wider stoals, 16, 14 or 12 gauge steel. Where used as jamb and head trim 18 gauge is usually sufficient.





No. 110 SPLAY WINDOW TRIM

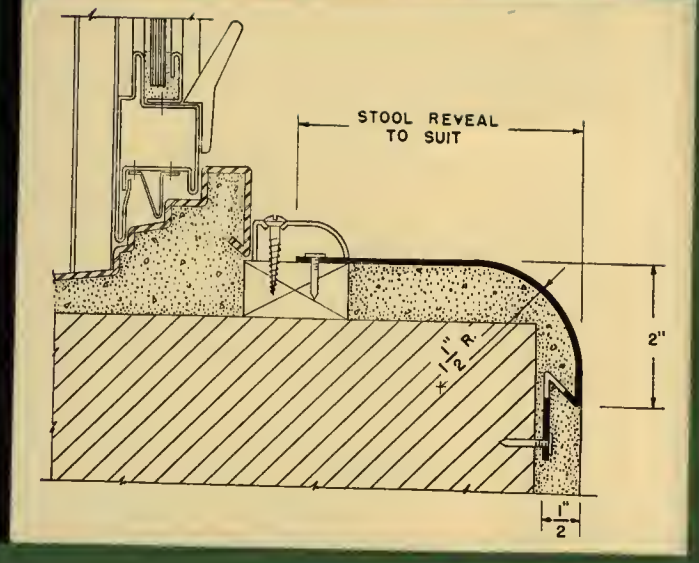
This trim is designed ta increase the angle of light and ta prevent the use of the window stool as a shelf. It can be used as a stool alone or far all sides of the windaw opening. A mitred and welded frame can be furnished. Combination frames can be made using this trim for the stool and No. 100 Trim far head and jambs.

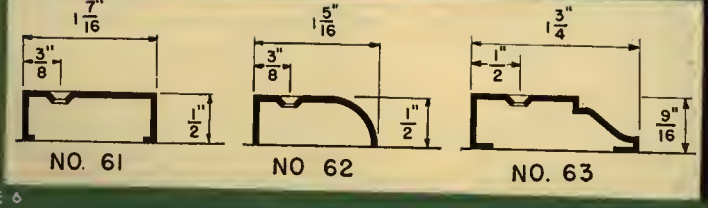
Trim is fabricated from galvanized steel and painted one coat of rust inhibitive grey primer on the exposed surfaces. We recommend 18 gauge steel for stools less than 5 feet lang by 4 inches wide; for longer and wider stools, 16, 14 or 12 gauge steel. Where used as jamb and head trim 18 gauge is usually sufficient.

No. 101 METAL WINDOW TRIM

This trim is adaptable to a wide range of uses. It can be used as a stool alone or for all sides of the window opening. A mitred and welded frame can be furnished. Combination frames can be made using this trim far the heads and jambs and No. 120 Trim for the stoal.

Trim is fabricated from galvanized steel and painted one coat of rust inhibitive grey primer on the exposed surfaces. We recommend 18 gauge steel for stools less than 5 feet long by 4 inches wide; for longer and wider stools, 16, 14 or 12 gauge steel. Where used as jamb and head trim 18 gauge is usually sufficient.

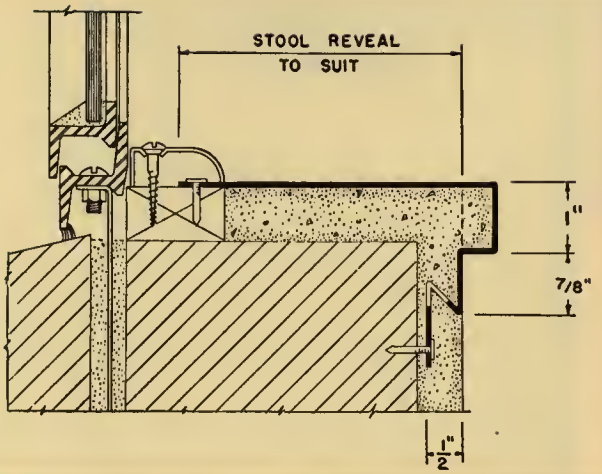




Nos. 61, 62, 63, 64 & 65 METAL STOP MOULDING

These mauldings are furnished in 18 gauge galvanized steel and painted one coat af rust inhibitive grey primer. In stock lengths of 7, 8, and 10 feet. Screws are provided.

WOLLAEGER INTERIOR METAL TRIM



No. 120 METAL WINDOW STOOL

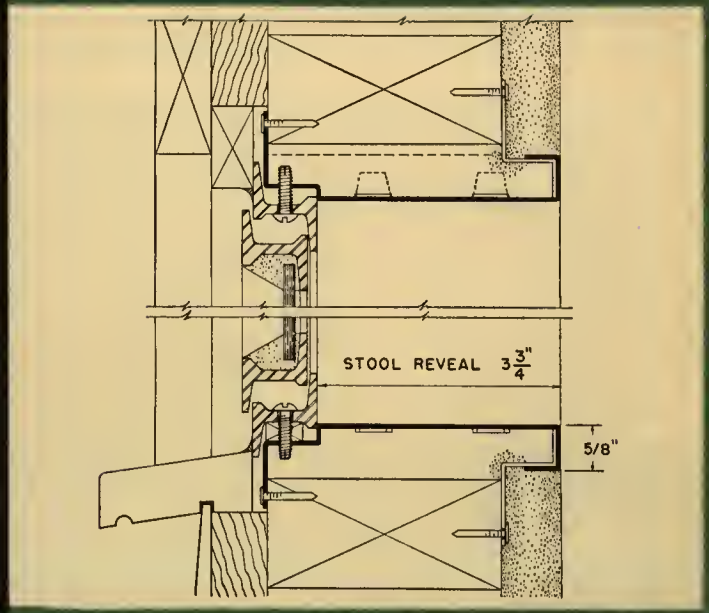
This stool is furnished with or without closed ends on the projecting bead. Jamb finish strips 1" high can be added at the ends of the stool to serve as a plaster screed. A complete mitred and welded frame can be furnished using No. 100 Trim for head ond jombs. The stool can be perforated to serve as o grill for conceoled radiation or air conditioning.

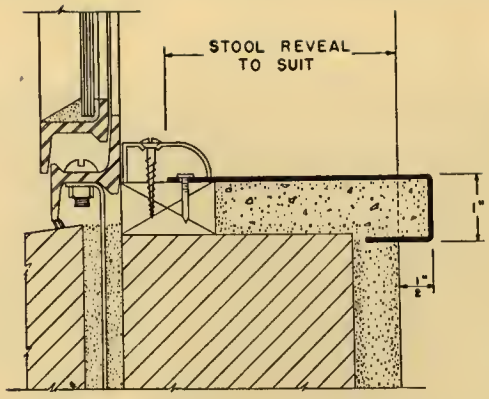
Stools ore fabricated from galvonized steel and painted one coat of rust inhibitive grey primer on the exposed surfaces. We recommend 18 gauge steel for stools less thon 5 feet long by 4 inches wide; for longer and wider stools, 16, 14 or 12 gauge steel.

No. 130 METAL WINDOW SURROUNDS

These surrounds ore fabricoted from 18 gauge galvanized steel and painted one coot rust inhibitive grey primer on exposed surfaces. The sections are shipped "Knocked-down" and provided with tongues ond slots so that they con be assembled in the field into a complete frame. The window is then ottached ond the entire assembly is fastened to the wall opening. Loose clips are also provided to anchor the frome on the plaster side.

The surrounds ore fabricated in 3¾" reveol only and can be mode to accommodate all sizes of steel cosements.





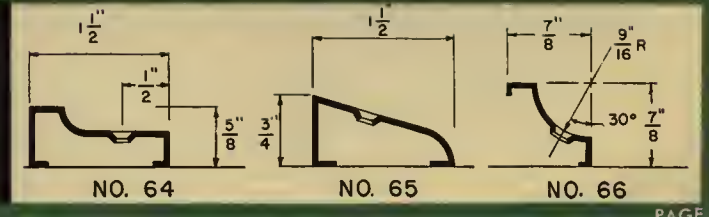
No. 125 METAL WINDOW STOOL

This stool is furnished with or without closed ends on the projecting bead. Jamb finish strips 1" high con be added at the ends of the stool to serve as a plaster screed. A complete mitred ond welded frome can be furnished using No. 100 Trim for head and jambs. The stool con be perforated to serve os a grill for conceoled rodiotion or oir conditioning.

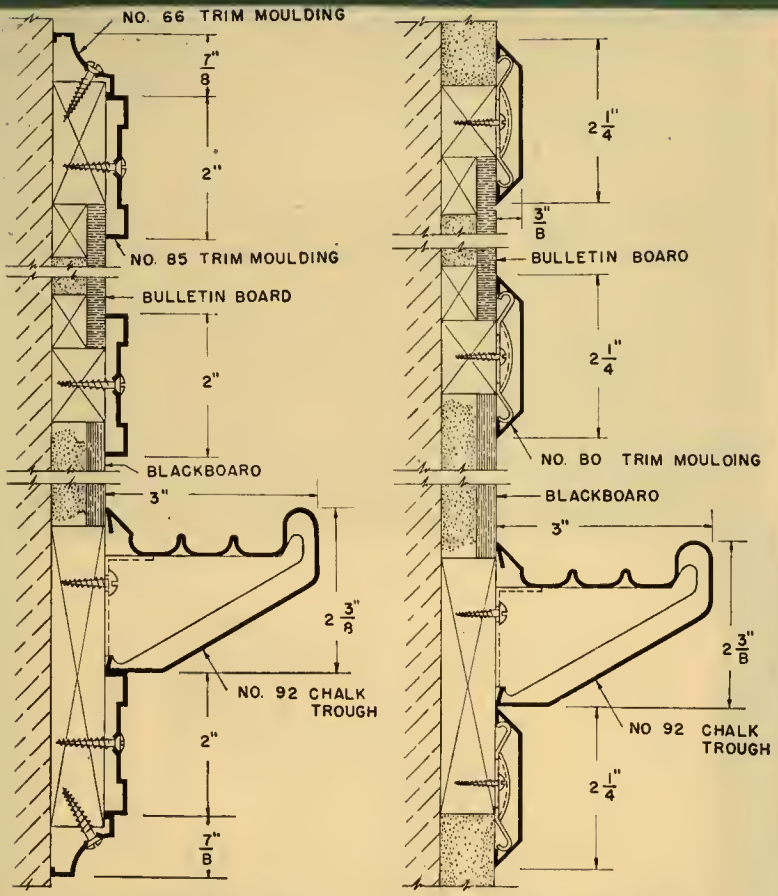
Stools are fabricated from galvanized steel and painted one coat of rust inhibitive grey primer on the exposed surfaces. We recommend 18 gouge steel for stools less thon 5 feet long by 4 inches wide; for longer and wider stools, 16, 14 or 12 gouge steel.

No. 66 SCRIBE MOULDING

This scribe moulding is fabricated from 20 gauge galvanized steel and painted one coat of rust inhibitive grey primer. In stock lengths of 7, 8, ond 10 feet. Screws are provided.



WOLLAEGER INTERIOR METAL TRIM



BLACKBOARD TRIM FOR NON-PLASTERED WALLS

BLACKBOARD TRIM FOR PLASTERED WALLS

METAL TRIM FOR CLASSROOM BLACKBOARDS

Metal Trim is ideal far classroom blackbaards and bulletin boards. Details shown are far both plastered and nan-plastered walls. Any of the various mouldings shown on Page 5 can be used as blackboard trim.

The No. 92 Heavy Duty Metal Chalk Traugh illustrated is fabricated from 18 gauge cold-rolled steel and painted one coat of rust inhibitive grey primer. Furnished in 10 foot ar 12 foot stock lengths. The trough is fastened with concealed clips which also serve as alignment plate at splice joints. Clasure plates are provided to cap the ends of the trough.

See Page 5 far Trim Moulding specifications.

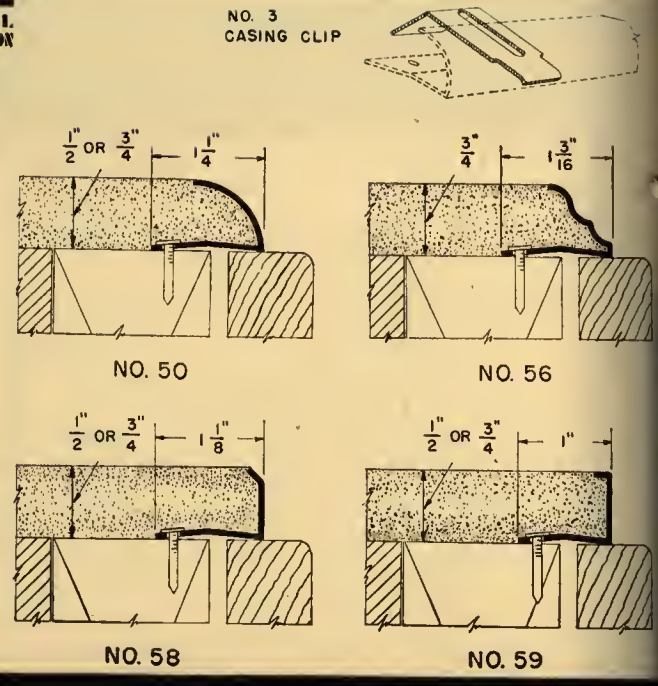
METAL PLASTER CASINGS

Plaster Casing is a decorative trim as well as a metal screed used to finish the edges of plastered walls at door and window openings.

No. 50 and No. 56 Casings are fabricated from 24 gauge galvanized steel. No. 58 and No. 59 Casings are fabricated fram 22 gauge galvanized steel.

All styles of Casings are available in stack lengths of 7, 8 and 10 feet.

The spring action of the Na. 3 Casing Clip forces the nose of the casing tightly against the framework.



WOLLAEGER STEEL CORPORATION

Division of Aetna Steel Products Corporation

EXECUTIVE OFFICES: 61 BROADWAY, NEW YORK 6, N. Y. • PLANTS: POTTSVILLE, PA. AND NEWMARKET, N. H.

★ For Hallow Metal Doors and Frames see Aetna Steel Products Corporation — Section 15a

HYDRATED LIME FOR PLASTER

Fibered Base Coat Finishing Hydrated Lime

White Finishing Hydrated Lime

From Northwestern Ohio

12b
1

Up to about 1890 and for centuries preceding, virtually all plaster and exterior stucco were composed of lime and sand and practically all early masonry was laid up in lime mortar. These plasters, stuccos and mortars were not made with the modern hydrated lime obtainable today but from locally calcined lump lime. Qualities varied, naturally, depending on the quality of limestone, shells, etc., from which the lime was obtained, but even so the results were uniformly satisfactory as attested by buildings which have stood the test of time, even in this country, for hundreds of years.

The basic reason for these uniformly satisfactory results was that the old time masons and plasterers used only thoroughly age-slaked lime putty. They slaked their lump lime and stored the lime putty for months in ground pits before it was used. As the aged lime putty was removed from the pit, section by section, it was replaced with freshly slaked lime putty and this new section in turn was aged before removal for use.

This ageing of the slaked lump lime putty, obviously was time consuming—too time consuming to meet modern speeds of construction. Thus there came into general use substitutes.

Today, however, finishing hydrated lime from Ohio is marketed nationally, pre-slaked ready, but for a moderate soaking period, for immediate use. FINISHING HYDRATED LIME is completely mill manufactured under chemical supervision and control—a standardized, uniform modern basic material. Hydrated lime putty has all of the best characteristics of the old, aged-in-the-pit lump lime putty with the advantage of being "Ready for Use".

Now there is marketed nationally, "Ready to Use" Fibered Hydrated Lime made from the famous Ohio Finishing Limes designed for plaster base coats as well as Hydrated Finishing Lime, universally recognized as the best finishing coat material.

Comparatively recent research, likewise, has proved conclusively the many advantages of Finishing Hydrated Lime mortar for masonry.

Thus Lime, tested by time, used through the ages, meets the challenge of modern construction.

St. James Goose Creek Church is located about twenty miles from Charleston, S. C. Built of Lime Stucco and Lime Plaster in 1713, it is an excellent example of the permanence and lasting qualities of Lime for Stucco and Plaster. It is perhaps the oldest and best preserved church in this section of the country.

THE FINISHING LIME ASSOCIATION OF OHIO

601-2-3 Home Bank Building—Toledo 4, Ohio

MILL MIXED FIBERED FINISHING HYDRATED LIME PLASTER

The manufacturers of the famous Finishing Hydrated Limes from Ohio are experiencing an increased demand for a mill-mixed base coat lime plaster. This is the result of Architects and Plastering Contractors finding, after careful investigation and successful use in many buildings, large and small, that lime plaster gives them and their clients the utmost satisfaction. Mill Fibered Hydrated Lime plaster is now produced commercially in quantity production and is available for distribution through the warehouses of all building supply dealers.

THE PRODUCT—The Plaster is basically a Finishing Hydrated Lime, embracing all of the characteristics of strength, uniformity, plasticity or workability, and cool-working qualities that have given Finishing Hydrated Lime recognition as a superior plastering lime. It is completely manufactured at the mill under chemical supervision and control, mixed with the proper amounts of finest-quality hair and fiber in correct proportions, and delivered at the job in the original packages, ready for use.

PREPARATION AND USE—All that is necessary to prepare fibered hydrated lime plaster for use is to soak it over-night, mix it with sand in the proper proportions, and apply; or mortar may be mixed and stacked for four or five days prior to use, thus effecting an economy and increasing the plasticity.

WHERE TO PURCHASE—Fibered Hydrated Lime can be ordered through any builders' supply dealer in the same manner in which Finishing Hydrated Lime is purchased. It is obtainable in mixed cars with Finishing Hydrated Lime.

ADVANTAGES—(1) The product may be retempered and due to its setting properties plasterers are able to execute true and straight walls, ceilings, and angles.

(2) This lime plaster may be applied over metal lath, wood lath, clay masonry walls, concrete, gypsum block and gypsum perforated lath. Its flexibility as to plaster base makes it possible to gain the higher insulating values of lime plaster without using several different plastering and wall finishing materials.

(3) It protects metal lath, pipes and other metal construction with which it comes in contact from oxidation and corrosion.

(4) Condensation from pipes and metal in the wall will not affect it as moisture has no effect on lime plaster except to harden it. It is especially adaptable in areas of high humidity and areas adjacent to bodies of water and for use in steam rooms, bath rooms, laundries and structures of similar nature.

(5) It permits the development of wall decoration such as frescoing (Letter Circular 304 of the Bureau of Standards).

(6) It is adaptable to decoration by water-color without impairing the sound reduction factor.

Specifications FOR INTERIOR PLASTER

MATERIALS

FINISHING HYDRATED LIME—All lime for finish coats shall be Finishing Hydrated Lime meeting the requirements of the American Society of Testing Materials, and THE FINISHING LIME ASSOCIATION OF OHIO, delivered at the job in original packages. All lime for base coats shall be a mixture of finishing hydrated lime, hair and/or fiber, mill mixed and delivered in the original packages.

SAND—(a) Sand for scratch and brown coats shall meet the requirements of the tentative specifications for sand for lime plaster of the American Society for Testing Materials.

(b) Sand for sand finish shall be a clean, dry screened sand 100% passing a No. 10 mesh screen, unless otherwise specified for specific finishes.

(c) Colored screenings and marble dust may be used to obtain color shades.

GAUGING MATERIALS—(a) Plaster of paris shall be clean, fresh and fully calcined, meeting the specifications of the American Society for Testing Materials.

(b) When Keene's cement is used it shall be a standard brand meeting the specifications of the American Society for Testing Materials.

(c) When portland cement is used it shall be a standard brand meeting the specifications of the American Society for Testing Materials and the Portland Cement Association.

WATER—Water shall be clean and fit for domestic consumption.

METAL LATH—All expanded and fabricated lath shall be of an approved brand, applied in accordance with recommendations of the manufacturers.

WOOD LATH—Wood lath shall be No. 1 White Pine or equal and should be as damp as practicable when mortar is applied. Courses should be broken every eighth course, and all lath laid horizontally and in one direction on ceilings. They shall be nailed securely with 3d nails to each support, and shall cross and have butt joints over a support. Lath shall be spaced ⅜ in. apart. Provide and securely place metal corner beads and metal lath strips in all exterior and interior angles.

GROUND WORK—Grounds shall be placed and secured prior to the application of plaster. Wood lath and metal lath shall have ¾-in. or ⅞-in. grounds. Solid backings shall have ⅝-in. grounds.

FIBERED BASE COATS

PLASTERING ON CONCRETE SURFACES

CEILINGS—Proportions: Stiff putty, 1 part by volume; fine plaster sand, 2½ parts by volume.

Prepare ceiling by brushing or washing free from scale dust, dirt, oil, etc., and then slush down with neat portland cement as a primer or by hacking and roughing surface prepare bond to receive plaster. When this is set, apply coat as thin as possible. (If plain surface is required, it should be obtained through good formwork. Do not attempt to fill up uneven places with plaster.) Trowel to finish or texture desired. If white coat is desired, add finely screened sand to regular white coat.

WALLS—⅝-in. grounds. Proportions: Stiff putty, 1 part by volume; plaster sand, 3 parts by volume.

Brush or wash surface free from all dirt scale, or foreign matter, and then slush down with neat cement, or by hacking and roughing surface prepare bond to receive plaster. When this is dry apply 1 coat of this mortar and by adding 1 more part of sand, apply a second coat, and bring out to grounds. Use rod and darby to bring to even surface. When firm but not dry, rub evenly with float to remove and prevent shrinkage cracks, and prepare surface to receive finish coat. When thoroughly dry apply finish coat.

NOTE: *We do not believe the application of plaster to concrete surfaces is satisfactory, and therefore we recommend that all such concrete surfaces be furred and lathed.*

THREE-COAT WORK ON METAL LATH

MORTAR—The mortar shall be a mixture of Finishing Hydrated Lime paste or putty, which has been allowed to age either neat or sanded for at least 24 hours, in the following proportions:

PROPORTIONS—Scratch coat shall be composed of: Stiff putty made from fibered lime, 1 part by volume; plastering sand dry, 3 parts by volume.

Brown coat shall be: Stiff putty, 1 part by volume; plastering sand dry, 4 parts by volume.

APPLICATION—(a) Plastering shall be to ⅞-in. grounds.

(b) Apply a coat of scratch mortar evenly and with sufficient force to insure clinch and key.

(c) As soon as this coat has become firm but not dry, scratch entire surface with broom or metal scratcher to insure bond for brown coat.

(d) When scratch coat has become dry apply brown coat, and bring surface out to grounds. Rod and darby to true surface and when this coat is firm but not dry, rub evenly with float to eliminate and prevent shrinkage cracks, and to prepare surface to receive finish coat.

GAUGING—If a harder set is desired, 15% to 20% of portland or Keene's cement by weight of lime may be gauged in the scratch coat.

THREE-COAT WORK ON WOOD LATH

MORTAR—The mortar shall be a mixture of Finishing Hydrated Lime, paste or putty, which has been allowed to age either neat or sanded for at least 24 hours, in the following proportions:

PROPORTIONS—Scratch coat shall be composed of: Stiff putty made from fibered Finishing Hydrated Lime, 1 part by volume; plastering sand dry, 3 parts by volume. Brown coat shall be: Stiff putty made from fibered Finishing Hydrated Lime, 1 part by volume; plastering sand dry, 4 parts by volume.

APPLICATION — (a) Plastering shall be applied to ⅞-in. grounds.

(b) Apply a coat of scratch mortar evenly and with sufficient force to insure good clinch and key.

(c) As soon as scratch coat has become firm but not dry, scratch entire surface with broom or metal scratcher to insure bond for brown coat.

(d) When scratch coat is dry apply brown coat, brought out to grounds. Rod and darby to true surface and when this coat is firm but not dry, rub evenly with float to eliminate and prevent shrinkage cracks, and prepare surface for finish coat.

GAUGING—If a harder set is desired, 15% to 20% of portland or Keene's cement by weight of lime may be gauged in the scratch coat.

TWO-COAT WORK ON BRICK, TILE, GYPSUM BLOCK, ETC. (Doubled-up Work)

MORTAR—The mortar shall be a mixture of Finishing Hydrated Lime, paste or putty, which has been allowed to age, either neat or sanded for at least 24 hours, in the following proportions:

PROPORTIONS—Scratch coat shall be composed of: Stiff putty made from fibered lime, 1 part by volume; plastering sand dry, 3½ parts by volume.

APPLICATION — (a) Plastering shall be applied to ⅝-in. grounds.

(b) All surfaces of tile, etc., shall be free from oil, dirt, dust or other foreign matter, and should be wet down before applying plaster.

(c) Apply a coat of this mortar with sufficient pressure to insure bond, and double back with the same mortar, bringing the coat out to grounds; rod and darby to true even surface.

(d) When surface is firm, but not dry, rub evenly with float to eliminate and prevent shrinkage cracks, and to prepare surface to receive finish coat.

(e) When the base coat plaster is thoroughly dry, after preparation as above, apply finish coat.

FINISH COATS

Putty made from Finishing Hydrated Lime shall be soaked 24 hours. This is done by sifting Finishing Hydrated Lime into a tank or box of clear water.

WHITE SMOOTH FINISH—Thoroughly mix gauging and Finishing Hydrated Lime putty and apply evenly. Trowel to eliminate all checks, chip cracks and uneven points to a true and even surface.

Proportion—Finishing Hydrated Lime, 4 sacks, 200 lb.; plaster of paris, 50 lb.

TEXTURED WHITE FINISH—Thoroughly mix gauging and Finishing Hydrated Lime putty and apply a very thin coat completely covering the brown coat. Follow this with heavier coat to form texture desired.

Proportions—Finishing Hydrated Lime, 3 sacks, 150 lb.; plaster of paris, 50 lb.

SAND FINISH—Mix Finishing Hydrated Lime and sand dry and screen through No. 10 screen unless specified for specific finishes, and add water and mix to proper consistency.

Apply a thin coat to all mortar surfaces, and double back with same mixture and float to true plane surface.

Proportions—Finishing Hydrated Lime, 2 sacks, 100 lb.; plastering sand, 300 lb.

Note: Keene's cement, portland cement or highly retarded gypsum may be added to sand finish as a hardener in proportions of 10% to 30% of the entire mixture.

TEXTURE FINISH—Finish in same manner as sand finish, except second coat is applied heavier, and texture desired worked in with tools or hands.

How to prepare HYDRATED LIME FOR PLASTER

Type of mixing box and screen.

FINISHING HYDRATED LIME—In order that the full advantages are obtained, Finishing Hydrated lime should be properly prepared for use by soaking in water for twenty-four hours preparatory to using.

The soaking in order to obtain the best results should be carried on as follows: A box is filled with clean water and the lime is sifted into the water thru a coarse screen and allowed to settle under its own weight until the box is filled. It is then left for twenty-four hours to develop plasticity.

Care should be taken not to force lime into water by poking or puddling with paddle.

By carefully following the instructions a maximum amount of hodable putty is obtained with a maximum spreadability or workability. No slaking boxes or aging vats are necessary, the soaking box with coarse screen are the only equipment needed.

In a multiple storied building the Finishing Hydrated Lime can be stored on each floor in sufficient quantities to plaster the floor and soaked the day before using.

FIBERED FINISHING HYDRATED LIME BASE COATS—To soak the Mill Fibered Hydrated Lime Base Coat preparatory for use, it is necessary to soak this without screening it into the water. This is usually accomplished by filling the tank half full of water and dumping the fibred lime into it, and letting it stand for 24 hours.

Another satisfactory method is to fill the tank full of dry mill mixed fibered lime and in one corner of the tank place vertically a four or six inch pipe, slotted at the bottom. After the tank is filled with the dry lime; a hose is inserted into the pipe to the bottom of the tank and the water turned on. In this way, the water enters the tank at the bottom of the lime and slowly rises until the lime is thoroly soaked.

Many plastering contractors have found it economical to machine mix the base coat material. The fibered lime and sand are placed in the mixer, water is added and the whole batch thoroughly machine mixed. This mortar is then stacked for four or five days or a week before use to develop plasticity.

Sack is broken open on screen.

The lime sifted through screen into water.

The Ohio Hydrate & Supply Company, Woodville, Ohio

The Gibsonburg Lime Products Company, Gibsonburg, Ohio

The Woodville Lime Products Co., 2140 Jefferson Ave., Toledo 2, Ohio

THE FINISHING LIME ASSOCIATION OF OHIO

601-2-3 Home Bank Building — Toledo 4, Ohio

JOHNS-MANVILLE

JM

PRODUCTS

Johns-Manville

Asbestos Flexboard

Insulating Board Products

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Johns-Manville District Offices 4

J-M ASBESTOS FLEXBOARD

Flexboard* is made of asbestos and cement. These two minerals — practically indestructible — are united under great pressure, and then hydraulically re-pressed to give Flexboard its unusual strength and unique flexibility. Furnished in Standard and Decorative forms.

In appearance, Standard Flexboard is an attractive stone-gray color with a smooth, hard surface that needs no other finish for either outdoor or indoor use.

Decorative Flexboard for interior use combines the qualities of Standard Flexboard with the added advantage of soft, mottled coloring.

Tested and proven, fireproof Flexboard is the building material of a thousand uses. Its varied applications have included a decorated ceiling in the huge main concourse of New York's famous Grand Central Terminal; modern business interiors and exteriors; outdoor factory conveyors and cylindrical structures; factories; domestic and industrial remodeling; drive-in theaters; roadside stands and restaurants; filling stations; outdoor dance floors; waiting rooms; dairies; farm buildings, such as hog houses, chicken brooders and barns; billboards; and many others.

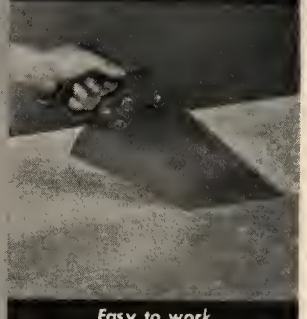
In addition, Flexboard is being used more and more in the fabrication of many manufactured articles. Representative of such products are ironing boards, outdoor furniture, lockers, fireplace screens, bird houses, bins, shutters, kennels, flower boxes, hotbed frames, hot pads, chests, trays, home bars, table tops, blackboards, signs and playground equipment. For further information, write your J-M Dealer, or the nearest office shown on the back of this folder.

*Reg. U. S. Pat. Off.

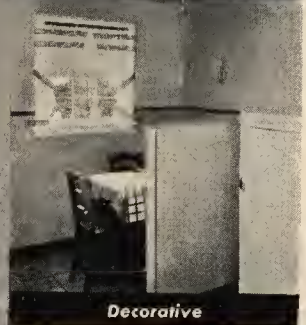
Fireproof

Flexible

Nails close to edges



Easy to work



Decorative

Standard Flexboard

ADVANTAGES

Flexboard's advantages are many. This smooth, hard-finish material is fire-proof, moisture-proof and rot-proof. It is flexible and strong. Insect-proof and rodent-proof, Flexboard has the permanence of stone and yet is easy to work and fabricate. It serves inside or outside, and can be nailed close to the edges without pre-drilling. The large sheets are easy and economical to apply.

APPLICATION

In 3/16" thickness, Flexboard may be nailed directly to studding or joists spaced on not greater than 16" centers. The 1/8" thickness should be nailed to a solid backing of 3/8" plywood or wood sheathing. When used over plaster, suitable nailing grounds should be installed. Flexboard may also be applied with Flexboard Cement, supplemented by mechanical fasteners. Unscored sheets may be curved up to 30" radius lengthwise and up to 36" radius crosswise for 1/8" thickness; up to 36" radius lengthwise and up to 54" radius crosswise for 3/16" thickness. Detailed directions on request.

STANDARD SIZES, PACKAGING AND WEIGHTS

Thickness, In.	Size of sheets, ft	Sheets per package	Sq ft per package	Approx. weight per package, lb
1/8	4 x 8 (unscored)	2	64	79
	4 x 4 (scored in 4" squares)	6	96	125
3/16	4 x 8 (unscored)	2	64	112

Decorative Flexboard

Decorative Flexboard is furnished in four colors: Rose, Green, Gray and Buff. The colors go all the way through the sheets. Decorative Flexboard sheets are waxed and given a fine, lustrous finish.

Furnished in 1/8" thickness only, Decorative Flexboard is available in the same sizes, plain and scored, as 1/8" Standard Flexboard. Packages of plain sheets contain 4 sheets (128 sq ft) and weigh about 160 lb. Packages of scored sheets contain 6 sheets (96 sq ft) and weigh about 115 lb. Write for complete details.

J-M INSULATING BOARD PRODUCTS

Johns-Manville research engineers have made a real and lasting contribution to the building industry in their development and perfection of Johns-Manville Insulating Board Products.

Two huge Johns-Manville plants, located at Jarratt, Virginia and Natchez, Mississippi, are devoted entirely to the manufacture of Insulating Board Products from selected, clean pine fibres.

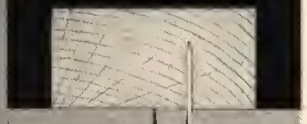
Johns-Manville Insulating Board Products described here include: Glazecoat Ceiling Panels, Glazecoat Wall Plank, Building Board, Weathertite* Sheathing and Insulating Lath.

Building Board, Ceiling Panels and Wall Plank are available with the smooth, durable, easily cleaned Glazecoat finish. Building Board is furnished in natural finish (light buff) or Ivory Glazecoat finish. Ceiling Panels are furnished in Ivory Glazecoat finish only. Wall Plank are furnished in Ivory, Graytone and Rose Tan Glazecoat finish. With the choice of the pleasing natural finish or the smooth Glazecoat finish, either of which may be painted if desired, these Johns-Manville Insulating Board Products provide versatile and practical interior finishes for new or existing houses, churches, theaters, shops and other commercial buildings of all kinds.

Complete application directions and further details on any Johns-Manville Insulating Board Product will be furnished on request.

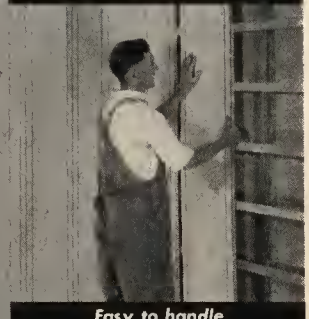
*Reg. U. S. Pat. Off.

Speedy application

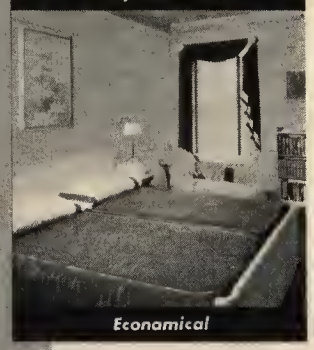


Concealed nailing

Versatile



Easy to handle



Economical

Glazecoat Ceiling Panels

ADVANTAGES — J-M "Lightning Joint" for speedy applicatian and cancealed nailing. Easy to handle. Strang and rigid. Economical . . . ready-cut and finished.

APPLICATION — Ceiling Panels may be applied aver new or existing construction, usually over wood furring. Complete applicatian instructians in each cartan.

SIZES, PACKAGING, WEIGHT AND COLOR

Thickness, in.	Size, in.	Pieces per package	Sq ft per package	Approx. weight per 1000 sq ft, lb	Color
½	12 x 12	64	64	797	ivory Glazecoat Finish.
	16 x 16	36	64	797	
	16 x 32	18	64	813	

All units hove the "Lightning Joint".

Glazecoat Wall Plank

ADVANTAGES — Same os thase listed above for Ceiling Panels, plus the added advantoges af lang lengths and wider selection of colors.

APPLICATION — Same as described obove far Ceiling Panels. Glazecaat Wall Plank may be applied either vertically ar horizantally with equal success.

SIZES, PACKAGING, WEIGHT AND COLORS

Thickness, in.	Size, width and length	Pieces per package	Sq ft per package	Approx. weight per 1000 sq ft, lb	Colors
½	10″ x 8 ft	12	80	850	ivory, Graytone and Rose Tan Glazecoat Finish.
	10″ x 10 ft	12	100	850	
	10″ x 12 ft	12	120	850	
	12″ x 8 ft	12	96	845	
	12″ x 10 ft	12	120	840	
	12″ x 12 ft	12	144	840	
	16″ x 8 ft	12	128	830	
	16″ x 10 ft	12	160	825	
	16″ x 12 ft	12	192	825	

All units hove the "Lightning Jaint" on long edges; short edges ore square. Packed only in single colors, widths and lengths. All units are beaded, paralleling the bevel.

Building (Insulating) Board

ADVANTAGES — Ecanamical and versatile. Large sheets are easy to apply and cover large areas.

APPLICATION — Over framing members, wood furring ar ather level bases suitable for nailing.

SIZES, PACKAGING, WEIGHT AND COLORS

Thickness, in.	Size, ft	Pieces per package	Sq ft per package	Approx. weight per 1000 sq ft, lb		Colors
				Natural	Glazecoat	
½	4 x 6	6	144	770	798	Natural finish (light buff) and ivory Glazeceat finish.
	4 x 7	6	168	769	798	
	4 x 8	6	192	766	797	
	4 x 9	6	216	764	796	
	4 x 10	6	240	763	795	
	4 x 12	6	288	763	795	

All edges squore.

(Continued on following page)

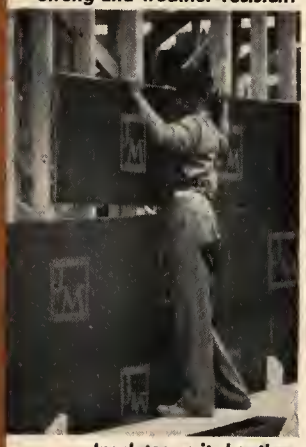
J-M INSULATING BOARD PRODUCTS (Cont'd)

Johns-Manville Weathertite* Sheathing and Insulating Lath offer several important advantages to the builder of a new home.

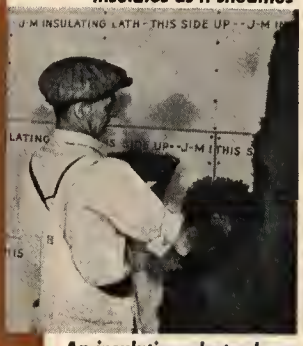
Weathertite Sheathing provides a greater measure of protection against moisture penetration, assuring a house which is virtually wind and water tight. This strong, weather-resistant material is integrally impregnated throughout with pitch. It is not a vapor barrier as it permits the passage of moisture vapor. For horizontal application, Weathertite Sheathing is furnished with the "V-Tite" joint, designed to reduce the infiltration of dirt and moisture. Laboratory tests prove it to have greater bracing strength than horizontally applied wood sheathing.

Insulating Lath, as its name implies, not only provides a stronger, more effective bond for plaster, but serves as an efficient wall and ceiling insulation. Cracking is reduced to a minimum, and since the plaster is applied against a solid, unbroken surface, lath marks are eliminated. The plaster goes on easier and there is a desirable saving in material and labor. More and more modern homes are being built with this improved plaster base. Write Johns-Manville for further details.

Strong and weather-resistant



Insulates as it sheathes



An insulating plaster base

Weathertite Sheathing

ADVANTAGES — Weathertite Sheathing is stranger, mare weather-resistant and costs less ta apply. It insulates as it sheathes, increasing comfort and reducing fuel bills. Assures practically a wind- and water-tight hause.

APPLICATION — *Vertical:* Sheets 4 ft by 8, 8½ 9, 10 and 12 ft are applied with the lang dimensian parallel to the framing members.

Harizantal: Sheets 2 ft by 8 ft are applied at right angles ta the framing members with the "paint" of V-Tite jaints at the top, grooved edge at the bottom.

SIZES, PACKAGING AND WEIGHT

Thickness, in.	Size, ft	Pieces per package	Sq ft per package	Approx. weight per 1000 sq ft, lb
½	4 x 8	6	192	834
25/32	4 x 8	4	128	1260
	4 x 9	4	144	1260
	4 x 10	4	160	1260
	4 x 12	4	192	1260
	2 x 8	6	96	1260

Note: 4-ft. widths have all edges square; 2-ft. width has short edges square, V-Tite joint on long edges.

Insulating Lath

ADVANTAGES — Serves as an effective insulatian as well as an econamical plaster base.

APPLICATION — May be nailed directly to framing members or ta furring over masonry walls.

SIZES, PACKAGING AND WEIGHT

Thickness, in.	Size, in.	Pieces per package	Sq ft per package	Approx. weight per 1000 sq ft, lb
½	18 x 48	15	90	867

Note: Short edges, beveled and square edge; long edges, beveled and shiplap edge.

*Reg. U.S. Pat. Off.

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville

22 EAST 40th STREET, NEW YORK 16, N.Y.

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CELOTEX

REG. U. S. PAT. OFF.

Gypsum Products

PLASTERS

WALLBOARDS

ANCHOR LATH

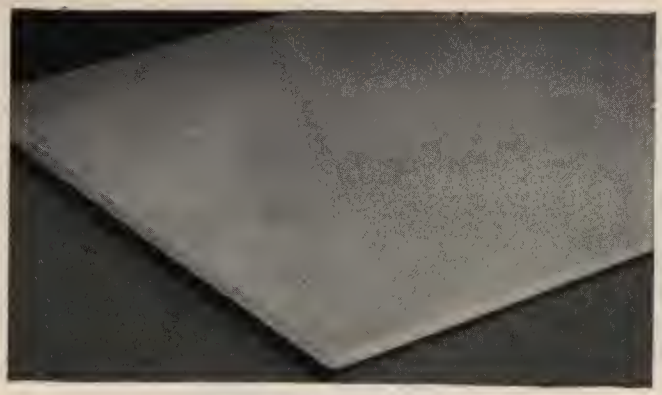
SHEATHING

(Celo-Rok is the registered trade mark identifying gypsum products manufactured by the Celotex Corporation).

THE CELOTEX
CORPORATION
Chicago 3, Illinois

CELO-ROK
REG. U. S. PAT. OFF.

CELO-ROK ANCHOR LATH



Plain Celo-Rok Anchor Lath

Perforated Celo-Rok Anchor Lath

DESCRIPTION

Celo-Rok Anchor Lath is a sheet lath consisting of a gypsum core encased in tough, long-fibred paper. During the manufacturing process the gypsum core is treated to increase its strength and resilience. The fibrous covering, specially made for this purpose, provides a strong bond with gypsum plaster. The paper backing covers the rounded long edges. The short edges are cut square.

TYPES, SIZES and THICKNESSES

Plain Celo-Rok Anchor Lath—⅜ in. thick x 16 x 32 in. and 16 x 48 in.

Perforated Celo-Rok Anchor Lath—⅜ in. thick x 16 x 32 in. and 16 x 48 in.

The Perforated Lath contains approximately 1/16 in. diameter holes to provide a mechanical plaster key, which securely locks the plaster to the lath.

Both ⅜ in. Plain and ⅜ in. Perforated Lath are packed 6 units per bundle. Each bundle of 32 in. ⅜ in. lath contains 21⅓ sq. ft. Each bundle of 48 in. ⅜ in. lath contains 32 sq. ft.

PROPERTIES

Fireproof—Celo-Rok Anchor Lath is non-combustible. It will not transmit temperatures to the framing much above 212° F. until the gypsum core is almost completely calcined.

Official tests conducted in accordance with the American Standards Association's Fire Test Specification have shown that Perforated Lath applied to walls qualifies for a one hour fire rating. For ceiling application the Perforated Lath, when nailed with ⅜ in. head gypsum lath nails and joints covered with striplath, qualifies for the same rating.

Structural Strength—The rigidity and large size of Celo-Rok Anchor Lath units add bracing strength and greatly increase resistance to framing distortion.

Durable—Celo-Rok Anchor Lath does not expand, warp or buckle when plaster is applied; consequently it will not shrink and cause cracks when the plaster sets and dries. It contains nothing that will disintegrate or corrode.

Plaster Bond—U. S. Bureau of Standards tests show a pull of 800 to 900 lb. per sq. ft. is required to break the bond between gypsum lath and its plaster coat.

Saves Plaster—Celo-Rok Anchor Lath provides a firm uniform plastering base. There is no plaster wasted in filling low spots and in droppings.

Less Moisture—It is not necessary to wet down Celo-Rok Anchor Lath before plastering. Furthermore, the Celo-Rok Anchor Lath helps seal off the moisture of the plastering operation from the building frame work, thus preventing much swelling and shrinking of the wood members and reducing the time necessary before application of finished trim and decoration.

Economical—The large units are easily handled and quickly applied, affording low labor cost. The comparatively low cost of the lath and the savings in plaster add further to its economical advantages.

SPECIFICATIONS—Application of Celo-Rok Anchor Lath

NOTE: *Wherever words or phrases occur in the body of the specification paragraph printed in bold face type and enclosed in brackets, choose that word or phrase which applies to the particular work, omitting those that are irrelevant.*

(1) SCOPE OF WORK—All [exterior stud walls] [wood furring] [interior stud partitions] [ceiling joists] [stair soffits] [furred or suspended ceiling] [specify] shall be lathed with [Plain Celo-Rok Anchor Lath] [Perforated Celo-Rok Anchor Lath] as supplied by The Celotex Corporation, Chicago, Ill.

(2) APPLICATION OF LATH—Cutting shall be done by scoring with a sharp hatchet or knife and then breaking down and up over a straight edge.

Nails shall be 1⅛-in., 13 gauge, ⅜-in. flat head, smooth diamond point gypsum lathing nails.

Celo-Rok Anchor units shall be applied with the long dimension at right angles to the framing members. On walls, the end joints shall be made to fall on different supports in alternate courses. On ceilings, end joints either be broken as for side walls or the lath shall be erected so that long joints are made continuous on one support and are covered with 3-in. wide strips of metal lath.

Fit lath joints tightly at all re-entrant angles and corners. Cut accurately and fit lath neatly around all electric outlet boxes, etc.

Space nails approximately 4 in. apart using 5 nails per stud. Each nailing edge must have a firm bearing on framing members. First nail to center support; then outer edges. Keep nails ⅜ in. from edges. Drive nails home.

(3) REINFORCEMENT—All re-entrant angles shall be reinforced over the Celo-Rok Anchor Lath with Cornerite. Strips shall butt (not lap) at ends and shall be substantially secured through the lath to framing members.

DESCRIPTION—Celo-Rok Weatherproof Sheathing is a sturdy, rigid sheathing material for use on frame buildings under wood siding, clapboards, shingles, brick and stone veneer or stucco. The core of Celo-Rok Weatherproof Sheathing is gypsum which is encased in heavy weather resistant paper. The long edges are made V tongue and groove. The exterior surface is black in color.

THICKNESS AND SIZE—Celo-Rok Weatherproof Sheathing is made in one thickness and size—½-in. thick x 2 x 8-ft.

PROPERTIES—Fireproof—Celo-Rok Weatherproof Sheathing will not burn or readily transmit high temperatures. It provides a fireproof covering for the entire exterior frame.

Weather Resistant—All surfaces and edges of each unit are water-repellent. The surface is marked "Water Repellent" to comply with F.H.A. standards. Unless local regulations require, no building paper is necessary over the gypsum sheathing except under stucco or masonry exteriors.

Weather-tight—The long edges of Celo-Rok Weatherproof Sheathing are V-tongue-and-grooved, forming a wind and weather-tight joint.

Stable—Celo-Rok Weatherproof Sheathing will not expand or contract with temperature changes. Made of gypsum rock, it will not disintegrate.

Economical—The units are of convenient size, economical to handle and erect. The material cuts and nails like lumber.

Structural Strength—The following summary of tests made by Illinois Institute of Technology for the Gypsum Association shows conclusively the comparative strength and rigidity of Gypsum Sheathing and Wood Sheathing:

GYPSUM SHEATHING VS. WOOD SHEATHING
(Test Panels 4'x8'—made of Yellow Pine 2x4's spaced 16" o.c.)

	YELLOW PINE SHEATHING 7/8" x 8"		GYPSUM SHEATHING
Loads in Pounds	Applied Diagonally Deflection in Inches	Applied Horizontally Deflection in Inches	Applied Horizontally Deflection in Inches
100	.01	.01	.00
800	.10	2.56	.07
2000	.29	10.94	.20
2800	.54	11.72	.32
3600	1.07	....	.54
4000	....	....	.84
Load at end of test	3925 lb.	3150 lb.	4425 lb.

SPECIFICATIONS—Application of ½-in. Celo-Rok Weatherproof Sheathing

(1) SCOPE OF WORK—All exterior stud walls shall be sheathed with Celo-Rok Weatherproof Sheathing.

(2) FRAMING—Wood framing members shall be spaced 16 in. or 24 in. o.c.

(3) MATERIALS—Sheathing shall be Celo-Rok Weatherproof Sheathing as supplied by The Celotex Corporation, Chicago, Ill., ½ in. thick x 2 ft. wide x 8 ft. long. Nails for application shall be 1¾ in. long, No. 11 gauge, galvanized large head roofing nails.

(4) APPLICATION—Apply Celo-Rok Weatherproof Sheathing with groove down directly to framework with length at right angle to supports.

Butt the ends tightly over a support and interlock the side edges. Stagger vertical joints.

Fit tightly around all openings.

Fasten securely with nails spaced 4 in. apart on each bearing, set ⅜ in. from end edges.

NOTE: *Spacing may be 8 in. under solid wood siding and clapboards.*

(5) WOOD SIDING—Apply siding at right angles to studding directly over Celo-Rok Weatherproof Sheathing. Nail only to studs with nails sufficiently long to pass through the Celo-Rok Weatherproof Sheathing.

(6) WOOD OR ASBESTOS SHINGLES—Over the Celo-Rok Weatherproof Sheathing nail 1 x 2 in. furring strips to framing members, using nails of sufficient length to pass through the sheathing and penetrate framing at least 1 in. Furring strips shall be spaced to conform to widths of shingles specified.

NOTE: *Through the use of special metal fasteners, furring may be omitted. Write the Celotex Corporation for details.*

(7) STONE OR BRICK—Wall ties shall be nailed securely through the sheathing to wood supports.

(8) STUCCO—Cover entire surface with waterproof building paper. Apply (specify brand and weight of self-furring metal lath) at right angles to the studs. Lap lath ½ in. on sides and 1 in. on ends. Carry metal around all corners to first support. Secure with 6d galvanized nails approximately 6 in. apart on centers driven through the Celo-Rok Weatherproof Sheathing into the studs. Drive nails well in and bend to engage at least two lath strands. Thoroughly secure metal at all openings.

NOTE: *Follow standard specification for the application of exterior stucco.*

NOTE: *Adjust dimensions of ordinary opening frames to compensate for ½-in. Celo-Rok Weatherproof Sheathing. Where stock frames are used, specify allowance for such variation. On modular standard window frames, reversible blind stop extension permits frame to be used with ½-in. Celo-Rok Weatherproof Sheathing. Consult National Door Manufacturers Association, Washington, D. C., for details.*

CELO-ROK LINER BOARD

DESCRIPTION—Celo-Rok Liner Board has physical characteristics similar to other gypsum board products. Its core of gypsum is covered on both surfaces with a tough fibered paper.

THICKNESSES AND SIZES—Celo-Rok Liner Board is made in three thicknesses, ¼ in., ⅜ in., ½ in. All thicknesses are made in the following sizes: 24 x 32 in.; 24 x 48 in.; and 32 x 48 in.

BASE COAT—Fibered, Extra Fibered and Unfibered

Use—For scratch and brown coats on all standard plaster bases (gypsum, fiber insulating, wood and metal laths, gypsum tile, clay tile, brick, etc.) except concrete.

Description—These three varieties are supplied "neat" —sand is added at the job. Over lath, base coat plasters are usually applied in two layers: first, a scratch coat, which is pressed firmly against the lath to insure a permanent bond, and then a second or brown coat which brings the base coat up to ground or specified level. The surface should be well leveled and roughened for the finish coat.

BASE COAT—Wood Fiber

Use—For scratch and brown coats on all standard plaster bases (gypsum, fiber insulating, wood and metal laths, gypsum tile, clay tile, brick, etc.) except concrete.

Description—Celo-Rok Wood Fiber Plaster is ready for use with the addition of water only. It is made principally for patch work, or for use in localities where a good grade of sand is not available, or when it is preferable not to use sand. It should be used without sand except for application to masonry surfaces when no more than one part sand to one part plaster by weight should be used.

PREPARED FINISHES—Sand Float, Trowel

Use—For finish coats.

Description—Prepared Finishes require only the addition of water to make them ready for use. They are made in trowel finish and sand float finish. The sand float finish contains selected sharp, clean sand, properly graded, screened, and thoroughly dried, mill-mixed in exact proportion to assure a uniform finish.

GAUGING PLASTER—Gray and White

Use—For mixing with lime putty for finish coats.

Description—Both gray and white gauging plasters are available in quick, medium and slow sets. (Gray gauging plaster is sometimes referred to as "common" or "local".) They consist of properly ground calcined gypsum retarded for proper set.

MOULDING PLASTER

Use—For mouldings or ornamental plaster work, and for special decorative effects.

Description—Celo-Rok Moulding Plaster is custom made. Extra care is taken in the manufacture to insure best results in service. Gray or white.

LIME—Hydrated Finishing

Use—For finish coat mixed with Gauging Plaster.

Description—The best lime available has been chosen for the Celo-Rok line. Burned and ground with extreme care and scientifically slaked, it produces a smooth, plastic putty.

KEENE'S CEMENT

Use—Keene's Cement is used for finish coats where especially hard walls are desired.

Description—Made from selected gypsum, ground to extreme fineness, Keene's Cement is the hardest, densest gypsum material for trowel application. Pure white, takes a high polish, is easily cleaned. Contains no alkali; is an ideal base for paints and enamel.

BASIC PLASTERING SPECIFICATIONS

NOTES: *This specification is arranged to cover an installation of plaster on all types of lath and masonry surfaces. After various paragraphs will be found notes—which offer information and suggestions. Notes refer directly to preceding paragraphs.*

Alternate specifications are in bold type in [] inserted after proper clauses or sections of main specification paragraphs.

NOTE FOR SPECIFICATION WRITER: *When writing a specification for a project at hand, it is necessary to use only the paragraphs that cover the type of construction contemplated. It may be necessary to slightly revise certain paragraphs to fit the individual requirements.*

(1) GENERAL CONDITIONS

(1a) The General Conditions of this specification are hereby made to constitute a part of the specification for Lathing and Plastering.

(1b) The contractor for plastering shall furnish all materials, labor and scaffolding necessary to completely finish all plastering in accordance with the intent of the drawings and of the specifications.

(1c) The contractor for plastering shall examine all walls, furring, partitions, ceilings, etc., and see that they are in every case secure, true, and plumb or level. He shall report any which are not so to the general contractor for correction before proceeding to apply any lath, or plaster. Failure to so report shall be taken as assumption of full responsibility for satisfactory conditions by the plastering contractor.

NOTE: *For frame buildings all exterior and interior studding, all furring joists, rafters, collar beams, etc., will, be specified under Carpentry where they will be required to be placed properly on 16 in. centers.*

(2) EXTENT OF WORK

(2a) Unless otherwise specified and indicated on the drawings, the entire interior of the building shall be plastered on lath or masonry, as hereinafter specified.

NOTE: *If any plastering is to be included in an outbuilding or elsewhere, it should be mentioned in Paragraph (2a) unless to be separately contracted for.*

If there are no masonry walls to be plastered, strike out reference in paragraph (2a).

(2b) The plastering shall be the best three-coat work on all lath and two-coat on masonry surfaces. The scratch and brown coats shall be carried down to the rough floor back of all bases, etc., and extended up on all walls of skylights, light wells, etc., unless otherwise provided under Exceptions. On ceilings or other surfaces where there are no grounds, the thickness of the lath and plaster shall equal the full thickness of the grounds specified for that lathing material.

(2c) The wall surface in back of all tile wainscoting for walls shall be plastered with a scratch coat of cement mortar, consisting of 1 part Portland cement and 3 parts sand.

NOTE: *In certain localities jurisdiction has allotted the scratch coat to the tile setters, in which case Paragraph (2c) should be omitted. In this connection the "Basic Specification for Tilework" of the Associated Tile Manufacturers will be found very useful.*

(2d) EXCEPTIONS—The only places not to be plastered are [list here locations] and all other spaces marked "not plastered" on the drawings [or, listed in schedule on drawings]. No plastering will be required back of [list here such items as, marble, tile and brick wainscoting, etc.].

NOTE: *In locations where the scratch coat is back of tile wainscoting or is conceded to the plasterers, the reference to tile in the list of Exceptions should be omitted.*

(3) MATERIALS AND MIXING

(3a) PLASTER—All BASECOAT PLASTERS—PREPARED FINISHES—GAUGING PLASTERS (WHITE or LOCAL) shall be CELO-ROK Brand as supplied by The Celotex Corporation.

(3b) SAND—All sand for base coats shall be clean and sharp: free from alkali, salt and quicksand and from objectionable amounts of loam or clay and shall be graded from fine to coarse. When dry, all sand shall meet the screen test requirements of the American Society of Testing Materials specification for plastering sand.

(3c) MIXING—All plaster shall be mixed with clean water in clean, tight boxes and in accordance with best local practice, the intent of these specifications, and the directions of maker on file in office of the Architect.

(4) PROPORTIONS AND APPLICATION

(4a) ON GYPSUM LATH OR CELOTEX INSULATING LATH—

(4a1) First or Scratch Coat—Shall be one part fibered or unfibered plaster, to not more than two parts, by weight, of dry sand. When wood-fibered plaster is specified, it shall be used without the addition of sand.

(4a2) The lath shall not be wetted before plaster is applied. First coat shall be thoroughly applied and the plaster worked well into the joints and the surface shall be scratched or scored to provide a bond for the second coat.

(4a3) Second or Browning Coat—Shall be one part plaster, fibered or unfibered, to not more than three parts, by weight, of dry sand. When wood-fibered plaster is specified, it shall be used without the addition of sand.

(4a4) Second coat shall be applied when the first coat is set firm and hard but before it is dry. Second coat shall be straightened, keeping back sufficiently from the grounds to allow for finishing coat and the surface shall be broomed or otherwise roughened to receive the finishing coat.

(4b) ON WOOD LATH—

(4b1) First or Scratch Coat—Same as (4a1) above for Gypsum or Celotex Insulating Lath.

(4b2) Wood lath shall be thoroughly wetted 12 to 24 hours and in very dry weather again from 1 to 3 hours before plastering is started. First coat shall be applied with sufficient pressure to fill all spaces between lath and obtain good key, leaving a light coat over the lath, and the surface shall be scratched or scored to provide a bond for the second coat.

(4b3) Second or Browning Coat—Same as (4a3) above.

(4b4) Second coat shall be applied when the first coat is set firm and hard but before it is dry. Second coat shall be applied with strong pressure and straightened to a true, even plane. The surface shall be broomed or otherwise roughened to receive the finishing coat.

(4c) ON METAL LATH—

(4c1) First or Scratch Coat—Same as (4a1) above for Gypsum or Celotex Insulating Lath.

(4c2) First coat shall be applied with sufficient pressure to fill all meshes and obtain good key, leaving a light coat of plaster over the lath and the surface shall be scratched or scored to provide a bond for the second coat.

(4c3) Second or Browning Coat—Same as (4a3) above.

(4c4) Second coat shall be applied when the first coat is set firm and hard but before it is dry. Second coat shall be applied with strong pressure and straightened, keeping back sufficiently from the grounds to allow for finishing coat and the surface shall be broomed or otherwise roughened to receive the finishing coat.

(4d) ON MASONRY—

(4d1) Base Coat—Shall be one part plaster, fibered or unfibered, to not more than three parts, by weight, of dry sand. When wood-fibered plaster is specified, it shall be one part plaster to one part, by weight, of dry sand.

(4d2) The surface of all unfurred brick, hollow tile or concrete block walls shall be wetted before plastering is begun when necessary to kill excessive suction. The plaster shall be applied to a thickness of ⅝ in. beyond the wall face in two operations. A thin layer shall first be applied with strong pressure to secure a good bond and shall be followed immediately with a second layer which shall be straightened to a true, even plane. The surface shall be broomed or otherwise roughened to receive the finishing coat.

NOTE: *Provision is not made in the above specification for plastering on rubble masonry or on poured concrete. The first, it is presumed, will never be done without furring and the latter requires special plaster material.*

(5) FINISHING COAT

(5a) Finishing coat shall be applied throughout the building except behind base and any place under Exceptions in paragraph (2d) and shall be smooth white finish troweled to a dense, true surface.

(5b) Smooth White Finish shall be one measure of Gypsum Gauging Plaster to not more than three measures of perfectly slaked fresh burned plasterers' lump lime putty or standard hydrated finishing lime putty thoroughly and uniformly mixed.

NOTE: *If it is desired, a prepared gypsum finishing plaster may be used for the smooth white finishing coat, in which case substitute the following paragraph.*

"(5b) Smooth White Finish shall be Celo-Rok Prepared Trowel Finish Plaster mixed to the proper consistency with clean water only."

(5c) Finishing coat shall be applied when the base coat is set firm and hard and nearly dry. The surface of the base coat shall be sprinkled with water before the finish coat is applied when necessary to kill excessive suction.

(5d) All finishing coats throughout shall be applied and finished in the most workmanlike manner and shall be left plumb or level and true and even planed, free from trowel marks, blotches and without joints showing.

(5e) All finished plastering shall be protected from wind until set. In freezing weather, the contractor shall arrange with the general contractor that plastering shall be protected from frost until set hard and thoroughly dry.

NOTE: *In windy, hot, dry weather, openings should be screened but not closed. In all clear weather after plastering has set, doors and windows should be kept open as fully as possible.*

(6) CLEANING UP AND PATCHING

(6a) The contractor for plastering shall at all times keep the premises clean of loose mortar and rubbish resulting from his work and shall neatly patch or otherwise make good any damaged plaster after the various trades have left the building.

NOTE: *It has been found in practice and as a matter of justice that both patching and waste can be avoided if provision is made for the plastering contractor to be paid for patching by the trade causing the damage. This paragraph can be amplified as desired by the Architect to conform to his experience or trade custom of the locality.*

(6b) The whole of the work shall be completed to the satisfaction of the Architect and all shall be left perfectly straight, true and level or plumb, free from waves, cracks, blisters and defects of any kind, or be replaced until it is.

WALLBOARDS

DESCRIPTION

Celo-Rok Wallboards are made with a gypsum core encased in tough, fibrous paper covering. Designed for nailing over wood framework to form the finish for interior walls and ceilings. High-quality ivory paper finish on face; standard gray paper back.

TYPES, SIZES, THICKNESSES

Recessed Edge—4 ft. wide x 4, 6, 7, 8, 9, 10, and 12 ft. long. Thicknesses: ⅜ and ½ in. On the long edges a strip 1½ in. wide is slightly depressed to allow for application of Celo-Rok Joint Reinforcing System which conceals and reinforces the joint and provides a smooth, continuous wall surface.

Square Edge—4 ft. wide x 4, 6, 7, 8, 9, 10, and 12 ft. long. Thicknesses: ⅜ and ½ in.

PROPERTIES

Fire-Resistant—Because of its gypsum base, it will not burn, support combustion, or transmit high temperatures. It therefore prevents the spread of flames and tends to confine fire to the point of origin.

Strength—The Celo-Rok Wallboard core of solid-gypsum imparts great strength to the panels and provides protection against hard knocks and abuses.

Durable—Celo-Rok Wallboard is unaffected by ordinary temperature variations. Thus it will not warp or buckle, expand or contract. Once applied in accordance with the approved application specifications, it stays permanently in place.

Decorative—Celo-Rok Wallboard takes any type of finish. Its smooth surface makes an ideal base for paint, wall paper or textured finishes, or it can be used in its natural state.

Square Edge Recessed Edge

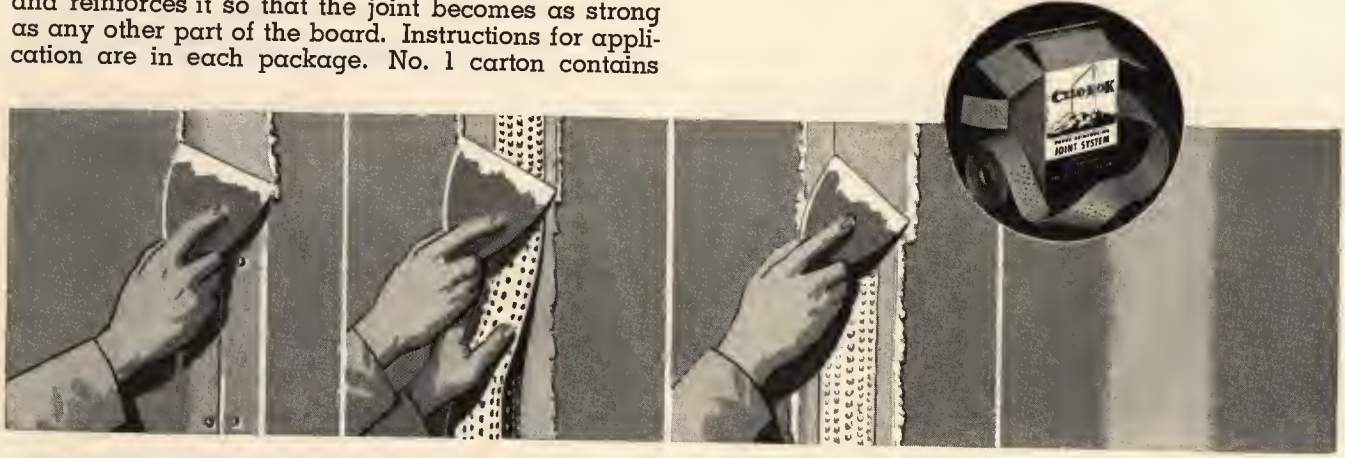
Wide Adaptation—Old or new walls can be quickly and economically covered with this modern wallboard. It is readily shaped to large radius curves.

Easily Applied—The comparatively light, large size units are easily handled and applied and are readily cut to dimension.

Economical—Celo-Rok Wallboard itself is less costly than many other wall materials. It not only effects real economies in the cost of original application but it reduces decorating costs. When once properly applied and decorated it has long life.

CELO-ROK JOINT REINFORCING SYSTEM

The Celo-Rok Joint Reinforcing System in combination with Recessed-Edge Celo-Rok Wallboard makes possible the building of strong, smooth walls and ceilings without visible joints. It consists of a strong-fibered, perforated paper tape and a special joint cement. It completely conceals all trace of the joint opening and reinforces it so that the joint becomes as strong as any other part of the board. Instructions for application are in each package. No. 1 carton contains enough tape (250 ft. roll) and cement for approximately 550 to 650 sq. ft. of wallboard surface. No. 2 carton contains enough tape (60 ft. roll) and cement for about 140 to 180 sq. ft.



The "valley" formed by the Recessed Edges is buttered with the plastic joint finisher.

A strip of perforated tape is then embedded by forcing the plastic through the holes.

A thinner coat of the plastic is applied and the joint smoothed and sandpapered.

After sizing, the wall presents a perfect base for the decoration of your choice.

(1) SCOPE OF WORK

(Here list and locate the interior walls and ceilings to be covered with Celo-Rok Wallboard.)

(2) FRAMING

All framing members shall be spaced accurately 16 in. on centers and shall be set straight and true. Bowed or warped framing members shall be replaced or straightened.

NOTE: *The spacing of framing members may be increased to 24 in. on centers when ½-in. wallboard is used.*

(2a) Headers (2 in. x 4 in.) shall be provided wherever necessary for support of all fixtures and cut ends of the wallboard falling within the field of wall or ceiling. Nailing members shall be provided in both planes of all interior and exterior angles.

NOTE: *Square Edge Wallboard shall always be applied with long edges parallel to framing members and headers should always be provided for as under Paragraph (2a) above.*

⅜ in. or ½ in. Recessed Edge Celo-Rok Wallboard with Celo-Rok Reinforcing Joint System shall be applied with long edges at right angles to framing members.

(2b) When Celo-Rok Wallboard is to be applied over masonry, the boards shall be nailed to wood furring of at least nominal 1 in. x 2 in. dimension spaced the same as for framing in Paragraph (2) above. Over existing surfaces, other than masonry, which are firm and reasonably true, furring strips may be omitted and the board applied directly over the existing surface.

NOTE: *⅜" Square Edge Celo-Rok Wallboard is recommended for application directly over existing surfaces.*

(3) MATERIALS

(3a) WALLBOARD—Celo-Rok Wallboard meeting A.S.T.M. Standard Specifications for Gypsum Wallboard Serial Designation C36, and Federal Specifications for Gypsum Wallboard SS-W-51a as supplied by The Celotex Corporation shall be [⅜ in.] [½ in.] thick with [Square] [Recessed] edges. Lengths shall be full height from floor to ceiling on walls and shall be such as will make possible a minimum number of end joints on ceiling.

NOTE: *If application of board with long edges at right angles to framing is specified, change (3a) to read "Lengths shall be such as will make possible a minimum number of end joints on both walls and ceilings."*

(3b) NAILS—Nails shall be **[4d, 14 gauge 1⅜-in. flat head cement coated nails for ⅜ in. thick wallboard] [5d, 13½ gauge 1⅝-in. flat head cement coated nails for ½ in. thick wallboard].** For application of Celo-Rok Wallboard directly to old wall surfaces use cement coated flat head nails long enough to penetrate the framing members at least 1 in.

(3c) JOINT REINFORCEMENT—Celo-Rok Reinforcing Joint System.

(4) PREPARATION OF CELO-ROK WALLBOARD

(4a) PILING—Celo-Rok Wallboard bundles shall be piled flat on the floor in the center of room after doors and windows are in place on job. Edges shall be protected.

(4b) HANDLING—Wallboard shall always be handled in a vertical position on its long edge.

(4c) CUTTING OR SAWING—To cut the board the face paper shall be scored with a sharp knife and the board snapped in two over a straight-edge or the board shall be sawed through with a sharp hand saw with face of board up and sawing edge as near as possible to a solid bearing.

Before nailing board in place, all cut edges and mill cut ends shall be sandpapered on the face side removing any loose, ragged paper at same time.

(5) APPLICATION OF CELO-ROK WALLBOARD

(5a) GENERAL—All board shall be brought to a moderate contact. Edges or ends shall not be forced together. All joints shall be broken, that is, stagger boards so that the corners of any four boards do not meet at one point. On opposite sides of partitions, perpendicular joints shall not occur on the same stud.

(5a1) [⅜ in.] [½ in.] Square Edge Celo-Rok Wallboard shall be applied with long edges parallel with framing members.

(5a2) [⅜ in.] [½ in.] Recessed Edge Celo-Rok Wallboard with reinforced joints shall be applied with long edges at right angles to framing members.

(5b) CEILINGS AND WALLS—Ceilings shall be erected first. Walls shall be erected so that boards fit snugly against ceiling boards and first board shall be squared with adjacent wall.

(5c) NAILING—Nails shall be driven "home" straight in, with heads slightly below surface without using nail set. Boards shall be nailed first at edge adjoining board last applied; then on first intermediate framing member; then on second intermediate framing member; and finally remaining edge and ends. Nails shall not be staggered on adjoining edges.

NOTE: *A hammer with a slightly rounded face is recommended.*

On intermediate and end supports nails shall be spaced from 6 to 8 in. apart on walls and 5 to 7 in. apart on ceilings. At all edges and ends nails shall be spaced ⅜ in. from the edge.

(6) JOINT FINISHING

(6a) SQUARE EDGE BOARD—Leave edges exposed or cover with batten strips or mouldings when desirable and reinforce end joints with Celo-Rok Reinforcing Joint System.

(6b) RECESSED EDGE BOARD—Reinforce long edges and ends with Celo-Rok Reinforcing Joint System.

(6c) REINFORCED JOINT TREATMENT—Fill recessed channel with cement using a broad putty knife. The cement shall extend ½ in. beyond the edge of the recessed channel. When square end joints are reinforced, cement shall be applied wide enough to be properly feathered out. Embed the perforated tape immediately, starting at a corner on horizontal application of Celo-Rok Recessed Edge Wallboard, press it into place over the cement with the putty knife, forcing some of the cement through the perforations. Immediately apply a light coat of cement, completely hiding the tape. Feather out edges with broad putty knife as smoothly as possible and allow to dry thoroughly. Fill intermediate nail heads with cement, flush with surface of board. Sand treated joints and nail heads with coarse, then fine sandpaper. Reinforce end joints of the Wallboard in the same manner.

(6d) PREPARATION FOR DECORATING—Thoroughly seal the surface of Celo-Rok Wallboard, including the joint treatment, with pigmented varnish primer or shellac before any decoration is applied. For other methods, see paint manufacturer's specifications.

CELOTEX
REG. U. S. PAT. OFF.

Gypsum Products

(Celo-Rok is the registered trade mark identifying gypsum products manufactured by the Celotex Corporation).

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HANDBOOK OF 1949

Gold Bond BUILDING PRODUCTS

NATIONAL GYPSUM COMPANY • Buffalo 2, N. Y.

Gold Bond

BUILDING PRODUCTS

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NATIONAL GYPSUM COMPANY, BUFFALO 2, N. Y.

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SECTION ONE

Gold Bond

PLASTER BASES

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Gold Bond PLASTER BASES

STANDARD GYPSUM LATH . . . . The modern, fire-proof plaster base. Quickly applied. Saves plaster.

GOLD BOND GYPSUM LATH is made under the same exclusive patents as Gold Bond Gypsum Wallboard, the only difference being that the sizes are smaller and the gypsum core is encased in a heavy fibre sheet that bonds tightly with plaster. The long sides have closed edges and are round, as illustrated. The short ends are cut perfectly square.

Superior Bond to Plaster

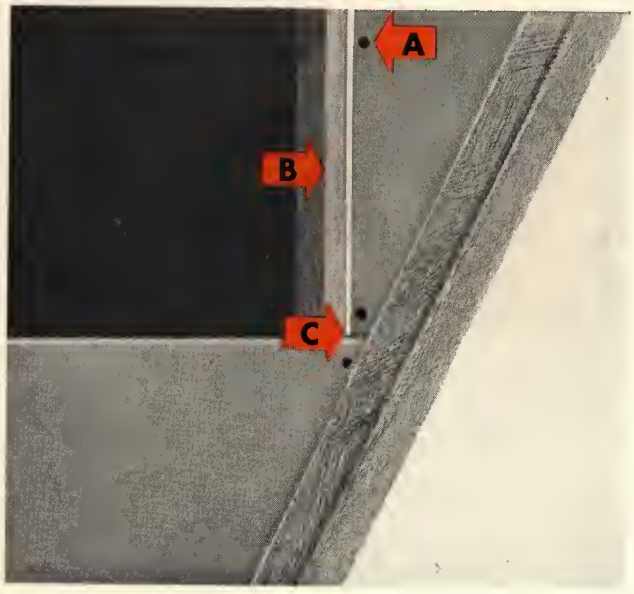
The bond of plaster to Gold Bond Gypsum Lath is not dependent on mechanical keys but is obtained by the felting action of billions of gypsum crystals in the set plaster embedding themselves onto the surface of the Gold Bond Gypsum Lath during the setting action. Authoritative tests have shown this bond to be three times as great as the mechanical bond obtained on wood lath.

Fireproof . . . Adds Structural Strength

Because of its solid gypsum core, Gold Bond Gypsum Lath is non-inflammable and non-combustible. When plastered in the usual way, it builds a gypsum wall with rock-like rigidity full ⅞ in. thick—⅜ in. gypsum lath and ½ in. gypsum plaster.

Won't Warp or Buckle—Saves Plaster Cracks

Plaster cracks are often due to expansion or contraction of the lath. This can't happen with Gold Bond as the panels are as inert as stone itself. They are unaffected by dampness or climatic changes and remain perfectly flat under all normal conditions, providing the ideal base for plaster.



(A) Nails placed ⅜" in from outside edges, spaced 4" o. c. along studs. (B) Stud. (C) Apply lath panels at right angles to studs with joints staggered.

The solid gypsum core of Gold Bond Gypsum Lath is encased in a tough fibre covering which provides an effective bond with plaster.

Cuts Labor Cost and Saves Plaster

With wood lath, spaces are left between the laths and much of the plaster goes into these spaces to form "keys." No "keys" are required with Gold Bond. The sturdy panels are butted together and *all* the plaster goes on the surface of the lath. This saving of plaster is considerable on a house of average size. Application costs are cut, too, as the large panels of Gold Bond are applied much quicker than the narrow wood lath strips.

* Sizes and Thicknesses

Gold Bond Gypsum Lath is usually made in three sizes, 16 x 48 in. (standard), also 16 x 32 in. and 16 x 36 in.—standard thickness ⅜ in., also ½ in.

**Until the housing shortage is less critical, Gold Bond Gypsum Lath will be made in one size only, 16 in. x 48 in. x ⅜ in. thick.*

Gold Bond

PLASTER BASES

PERFORATED GYPSUM LATH . . . Has every feature of Standard Gypsum Lath plus 1-hour fire rating.

GOLD BOND PERFORATED GYPSUM LATH is standard lath with holes the size of a nickel drilled through the panels. When the surface is plastered, enough of the plaster is forced through the perforations to form mushroom-like "keys" as pictured in the next column. Insures a double bond with plaster—the natural or chemical bond that occurs between the indented surface of the lath and the plaster, plus the mechanical bond provided by the "keys."

One Hour Fire Rating

Gold Bond Perforated Gypsum Lath has qualified for a one hour fire rating for walls and ceilings when applied as follows:

Walls—Gold Bond 3/8 in. Perforated Gypsum Lath plastered in the usual manner with 1/2 in. of gypsum plaster.

Ceilings—Gold Bond 3/8 in. Perforated Gypsum Lath applied with five nails to each joist, Gold Bond 3 in. Stripite over all joints and plastered with 1/2 in. thickness of gypsum plaster.

These official tests were made according to Standard Specifications of Fire Tests of Building Constructions and Materials, ASA No. A2, 1934.

Other Advantages That Combine to Make This An Outstanding Plaster Base

In addition to its one hour fire rating, Gold Bond Perforated Gypsum Lath offers these important advantages over old-style inflammable wood lath: It is moisture proof and unaffected by climatic changes. Won't expand, contract, buckle or twist. The rock-like panels add greater strength so that the plaster walls and ceilings are better able to withstand structural strains. Homes in which this fireproof modern plaster base is used have an extra appeal to prospective buyers.

Application

Gold Bond Perforated Gypsum Lath is applied the same as standard gypsum lath . . . five nails to each stud—the nails to be approx. 4 in. apart and 3/8 in. from edge—first nail 3/8 in. from top of panel. For ceilings with one hour fire rating, follow instructions under "One Hour Fire Rating" in first column.

Standard Size

16 x 48 in. x 3/8 in. thick.

*See preceding page.

(at left)

Mushroom-like keys, which grip the lath tightly, automatically form on reverse side of lath.

Sturdy rock-like panels of Gold Bond Perforated Gypsum Lath are applied quicker than wood lath and give wood framing the fire protection it needs.

As the plaster is trowelled on, the workman can feel the perforations take hold. The small picture above shows what actually happens on the reverse side of the lath.

Gold Bond

PLASTER BASES

FOIL-BACKED GYPSUM LATH . . . . Standard lath with highly effective vapor barrier and insulator.

The reflective side of Gold Bond Foil-backed Gypsum Lath is a combination insulator and vapor barrier. The gray side forms a powerful bond with plaster.

WATER VAPOR is absolutely invisible up to the very instant that it condenses from gaseous to liquid form as in steam, fog, clouds or mist on cold surfaces. This invisibility is, perhaps, the chief reason why the effects of water vapor in buildings have heretofore received too little consideration.

Condensation Causes Troubles

Condensation of water vapor occurs anywhere in the wall structure or filler when the air temperature falls below the dew point for its absolute humidity. This can be at any temperature from jungle heat to arctic cold. Condensation in the wrong places causes trouble. It reduces the effectiveness of bulk-type insulation by bridging dead air spaces with heat-conducting particles of water. It causes dry rot in wood. It lifts the paint film from wood siding. It warps wood framing, which cracks plaster.

Vapor Barrier Halts Humidity

But in new construction, condensation troubles can be prevented, easily. It's simply a matter of putting a highly effective vapor barrier between the moisture-laden warm interior air and the cooler wall space or structure. Aluminum Foil is 4 to 5 times as effective as commonly used vapor barriers. A thin layer of aluminum foil, constitutes the outer surface of Gold Bond Foil-backed Gypsum Lath. It keeps healthful humidity inside the building and retards the passage of water vapor to the wall structure where condensation can be harmful. The aluminum foil also keeps the excess water of plastering away from the wood framing and so eliminates a source of warping which may crack plaster.

High Insulation Value

For the above reasons alone Gold Bond Foil-backed Gypsum Lath should be specified for the plaster base of new homes. It should also be remembered that Gold Bond Gypsum Lath is fireproof and that when facing an open air space, the aluminum foil provides excellent reflective insulation.

Size and Thickness

Gold Bond Foil-backed Gypsum Lath is now made in one size only, 16 in. x 48 in. x ⅜ in. thick. It is applied in the same manner as standard gypsum lath and always with the foil toward the framing. Since the gray side has the same indented fibre surface as standard Gold Bond Gypsum Lath it develops the same powerful bond with plaster.

COMPARATIVE INSULATION VALUES*

CONSTRUCTION	"U" VALUE
Wood Siding, ½" Gypsum Sheathing, ⅜" Gypsum Lath and Plaster	.31
Same construction as above, *with aluminum foil lath*	.22
Wood Shingles, ½" Gypsum Sheathing, ⅜" Gypsum Lath and Plaster	.31
Same construction as above, *with aluminum foil lath*	.22
Stucco, ½" Gypsum Sheathing, ⅜" Gypsum Lath and Plaster	.39
Same construction as above, *with aluminum foil lath*	.26
Brick Veneer, ½" Gypsum Sheathing, ⅜" Gypsum Lath and Plaster	.35
Same construction as above, *with aluminum foil lath*	.24

*American Society of Heating and Ventilating Engineers.

Gold Bond

METAL LATH PRODUCTS

METAL LATH . . . A full line of metal lath and accessories designed for every building need.

NATIONAL GYPSUM COMPANY manufactures at its Niles, Ohio plant a full line of metal lath products and accessories.

For years metal lath, because of its unmatched strength and one hour fire rating for both walls and ceilings, has been invariably specified as the plaster base for buildings and the better class of homes. Lately it has come into common use for all types of residences including homes in the low-cost brackets. As one expert puts it, "Savings realized on repair and decorating bills over the years are every bit as important to owners of small homes as to those who own mansions."

The National Board of Fire Underwriters gives Metal Lath with gypsum plaster on wood studs a one hour fire rating—second only to reinforced concrete and above all others in resistance to earthquake and explosion shocks.

Only a few of the most commonly used products are illustrated in this section including the famous Gold Bond 2 in. Solid Partition System, used in many fine apartments and housing jobs. Other products not shown here are: Corner Beads (Scalloped, Wide Flange, Standard Bull Nose and Bull Nose Expansion), Base Screed (Curved Point and Expansion Flush), Corner Bead Clips and Channel Clips, Hot Rolled Channels, Galvanized Tie Wire, Pencil Rods, Coal Doors and Steel Basement Sash.

Illustrated catalogs of the Gold Bond 2 in. Solid Partition System, the Hollow Wall Partition System will be furnished gladly to interested architects, engineers and contractors. Address Metal Lath Division, National Gypsum Company, Buffalo 2, N. Y.

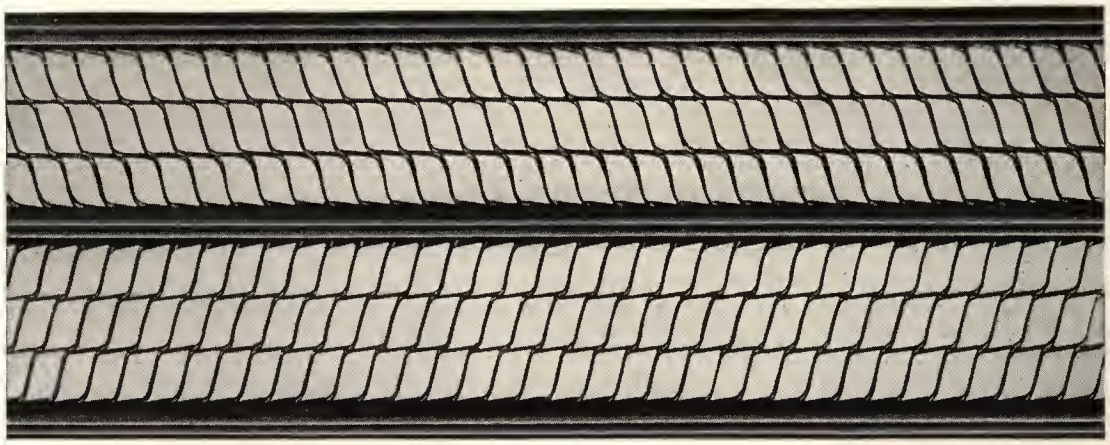
Partitions made of Gold Bond Metal Lath and plastered are rated by the National Board of Fire Underwriters as second only to reinforced concrete.

Gold Bond 1/8-in. Flat Rib Lath

Designed to meet the demand for a more rigid expanded metal lath, Gold Bond 1/8 in. Flat Rib Lath with its 1280 meshes per square foot provides more plaster keys than any other like product. The new size—27 x 96 in. speeds application as it can be put up in exactly the same time as old style 24 x 96 in. sheets.

Standard Weights—2.75 and 3.4 lb. Furnished in copper bearing steel.

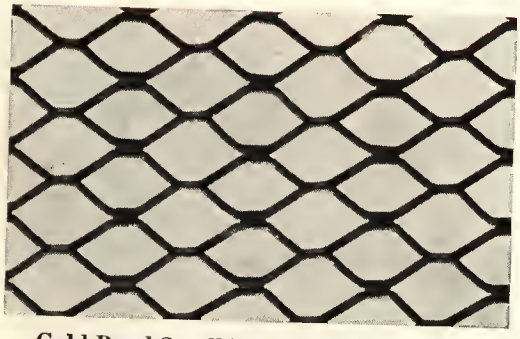
Sheet Sizes—24 x 96 in. 9 sheets per bundle or 16 sq. yds.
—27 x 96 in. 10 sheets per bundle or 20 sq. yds.



Gold Bond

METAL LATH PRODUCTS

METAL LATH . . . Most of the standard types are illustrated here, with Flat Rib on preceding page.



Gold Bond Small Diamond Mesh Lath

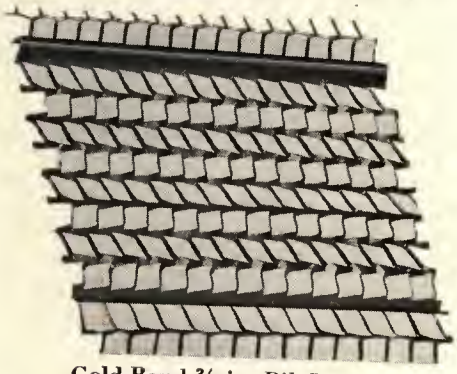
Gold Bond Small Diamond Mesh Lath

Can be used on any type of metal lath job. It constitutes better than 50% of all the metal lath sold.

Gold Bond Small Mesh boasts of having as small a mesh as any diamond mesh manufactured; containing approximately 11,000 keys per square yard. All sheets lie perfectly flat and each sheet is individually re-squared assuring full covering width. Regular 3/8 in. mesh can be furnished upon request. Is made from open hearth box annealed sheets.

Standard Weights—2.5, 3.4 lb. Furnished in painted copper alloy steel. Galvanized in 3.4 lb. only.

Sheet Sizes—24 in. x 96 in. 9 sheets per bundle or 16 sq. yds.
27 in. x 96 in. 10 sheets per bundle or 20 sq. yds.



Gold Bond 3/8-in. Rib Lath

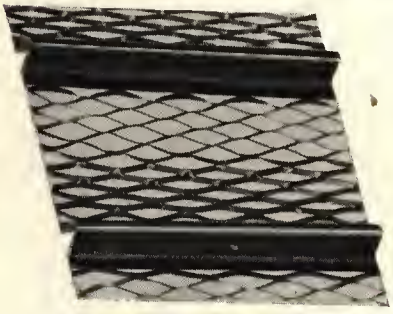
Gold Bond 3/8-in. Rib Lath

Is generally used for ceiling and for concrete reinforcing in floors in connection with steel joists, junior beams, etc.

Gold Bond 3/8 in. Rib Lath is outstanding for its rigidity. Ribs are 4 in. on center. Sheets nest perfectly when lapped providing a smooth base for plaster, with bulges eliminated and plaster waste reduced. Manufactured from copper alloy steel sheets.

Standard Weights—3.4 and 4.0 lb. Furnished in painted copper alloy steel.

Sheet Sizes—24 in. x 96 in. 9 sheets per bundle or 16 sq. yds.



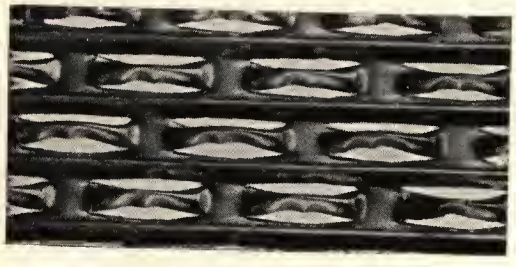
Gold Bond 3/4-in. Rib Lath

Gold Bond 3/4-in. Rib Lath

Used mainly as a form and reinforcement in concrete slab floor and roof construction. Won't bulge or sag. Ribs are spaced 4 in. on centers 3/4 in. deep. . . . Also adapted for use as a plaster base in the construction of 2-in. solid partitions. Due to the rigidity and reinforcing feature of the ribs, no studs are required.

Standard Weights—.60 lb., .75 lb. per sq. ft. Furnished in painted copper alloy steel.

Sheet Sizes—24 in. x 6, 8, 10, 12 ft. 9 sheets per bundle.



Bostwick Sheet Lath

Bostwick Sheet Lath

Is used generally for tile backing due to its being the most rigid lath manufactured. It requires considerably less plaster than any other type of metal lath and, therefore, is often used on residences and large apartment buildings. The trough formation of the ribs creates a suction and makes it the ideal lath for overhead work on ceilings. Manufactured from copper alloy steel sheets.

Standard Weights.—4.5 lb. in painted copper alloy steel.

Sheet Size—24 in. x 96 in. 9 sheets per bundle or 16 sq. yds.

Gold Bond

METAL LATH PRODUCTS

METAL LATH ACCESSORIES . . . Only the principal items in the Gold Bond Line are shown here.

Gold Bond Arch Corner Bead

Gold Bond Arch Corner Bead is the all-purpose corner bead. Used for vertical and horizontal corners or may be easily bent for arches. Full description on next page.

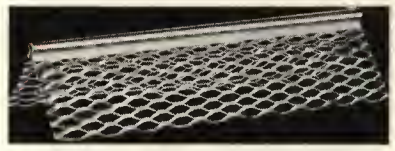
Stock Lengths—8, 9, 10 and 12 ft. Made in 26 gauge. Packed 10 pieces per bundle. Weighs 200 lbs. per 1000 lin. ft.

Gold Bond Arch Corner Bead

Gold Bond Standard Expanded Corner Bead

Gold Bond Standard Expanded Corner Bead can be used in all types of construction. Forms an exceptionally fine key due to the reinforcing given by the 2½ in. wings. Is easily erected.

Stock Lengths—8, 9, 10 and 12 ft. Made in 26 gange. Shipped in crates of approximately 500 or 1000 ft. only. Weighs 230 lbs. per 1000 lin. ft.

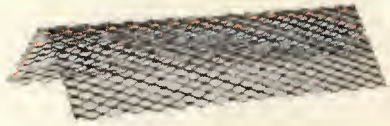


Gold Bond Standard Expanded Corner Bead

Gold Bond Safe-Edge Cornerite

New smooth edge. Especially fabricated and formed in the factory—not merely cut from full-sized sheets. Easier to handle. Speeds plastering—no rough edges to interfere with troweling; no turned-up points to bend back in place; no plaster waste. Made from copper-bearing steel. Painted black.

Sizes—2″ x 2″ x 96″, 3″ x 3″ x 96″. Packed 75 pieces (600 lineal feet) per bundle.

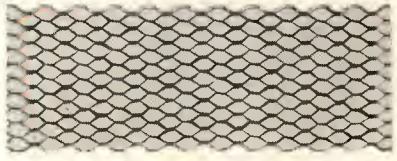


Gold Bond Cornerite

Gold Bond Safe-Edge Stripite

Also has new smooth edge and is especially fabricated. For use over joints and at corners of windows and door frames to provide additional reinforcement under plaster. Furnished in copper-bearing steel, painted black.

Size—3″ x 96″. Packed 75 pieces (600 lineal feet) per bundle.

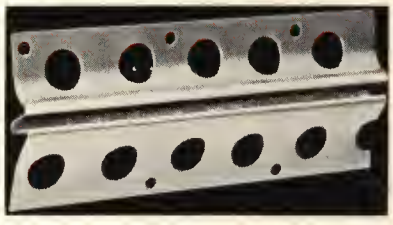


Gold Bond Stripite

Gold Bond Picture Mould

Gold Bond Picture Mould is a metal concealed picture moulding. It is erected before walls are plastered and is practically invisible when wall is finished.

Stock Length—10 ft. only. 26 gauge. 10 pieces per bundle. Weighs 260 lbs. per 1000 lin. ft.

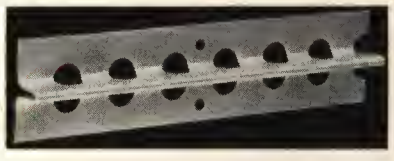


Gold Bond Picture Mould

Gold Bond Standard Base Screed

Gold Bond Standard Base Screed is used as a ground where the cement base is to be divided from the plastered wall. Assures a straight and perfect division line. Made in ½ in. ground only.

Stock Length—10 ft. only. 26 gauge. 10 pieces per bundle. Weighs 160 lbs. per 1000 lin. ft.



Gold Bond Standard Base Screed

Won't Kink or Break

Easily Prepared for Bending

ARCH CORNER BEAD

Gold Bond Arch Corner Bead serves a double purpose. It is used as a straight corner bead for vertical and horizontal corners and as an arch bead for curved openings. With it, arches of any curvature can be made on the job, quickly and at a decided saving.

Ordinary corner beads invariably break or kink at the nose when bent. Not so with Gold Bond Arch Corner Bead because its unique design permits utmost flexibility. No mechanical bender is necessary. Simply snip one flange as illustrated at the left and bend to the desired radius. Fits over any style of lath. The flanges have twice as many perforations as most corner beads which means more plaster "keys" and greater bonding strength.

Supplied in lengths of 8, 9, 10 and 12 ft. Made in 26 gauge. Packed 10 pieces per bundle. Weighs 200 lbs. per 1000 lineal ft.

For Ornamental Plaster Work

GOLD BOND METAL ARCHES

Are made from galvannealed sheet steel. A perfect arch for approximately half the cost of curved wood forms to which must be fitted corner bead and metal lath. They are easy to erect and are ideal for residences and apartment houses. Gold Bond Metal Arches are made in true circle, gothic and elliptic designs. They are standard for 2x4 studs or bucks. The studs or bucks are to be spaced 1½ in. wider than the desired finished opening.

This allowance is for the thickness of the lath and plaster ground. Can be joined with standard corner bead by using the shank of a No. 7 box nail.

STYLES AND ERECTION DETAILS

STYLE OF ARCH	SPACING OF STUDS OR BUCKS	WIDTH OF FINISHED OPENING
No. 11	21½″	20″
No. 22	33″	31½″
No. 33	33″	31½″
No. 36	39″	37½″
No. 44	51″	49½″
No. 55	63″	61½″
No. 66	72″	70½″

Gold Bond Metal Arches are easily fitted over the lath. Saves time and insures perfectly formed arches

GOLD BOND COLD ROLLED CHANNELS

TYPES, STOCK LENGTHS, BUNDLING

TYPE	STOCK LENGTHS SHOWN IN FEET	PACKED PCS. PER BDLE.	WEIGHT, LBS. 1000 LIN FT.
¾ in.	16, 20	20	300
1½ in.	16, 20	10	475

Furnished painted only.

Are used generally for suspended ceiling work and 2 in. solid partitions. They are formed cold from the best quality strip steel. Gold Bond Channels are absolutely straight. They are easily formed yet remain very rigid in the finished wall.

SECTION TWO

Gold Bond PARTITION SYSTEMS

Pages 10-16

2-INCH SOLID PARTITION SYSTEM

Pages 12-16

CONSTRUCTION DETAILS

Pages 17-24

HOLLOW WALL PARTITION SYSTEM

Pages 19-24

CONSTRUCTION DETAILS

Gold Bond

PARTITION SYSTEMS

2-IN. SOLID PARTITION SYSTEM . . . Builds fire-proof, space-saving walls. Many other features.

ARCHITECTS are finding the Gold Bond 2-in. Solid Partition System the best means of increasing floor space and reducing partition costs. So compact that it saves approximately 3 in. per wall, this system is recommended for fireproof, non-bearing partitions, in all types of buildings including hotels, apartments, hospitals, office buildings and housing projects.

Used in scores of big jobs from coast to coast—from fine apartments to low cost slum clearance jobs—the Gold Bond 2-in. Solid Partition System has again and again demonstrated its practicability, economy and all-around superiority.

New Metal Base and Adjustable Clips Installed 10% to 25% Faster

The distinctive new Gold Bond Metal Base and Adjustable Clips are pictured below. These clips take the base sections *one side at a time*, lock them securely in place with one simple turn. The slotted arms are adjustable to take care of floor variations up to 3/8 in.

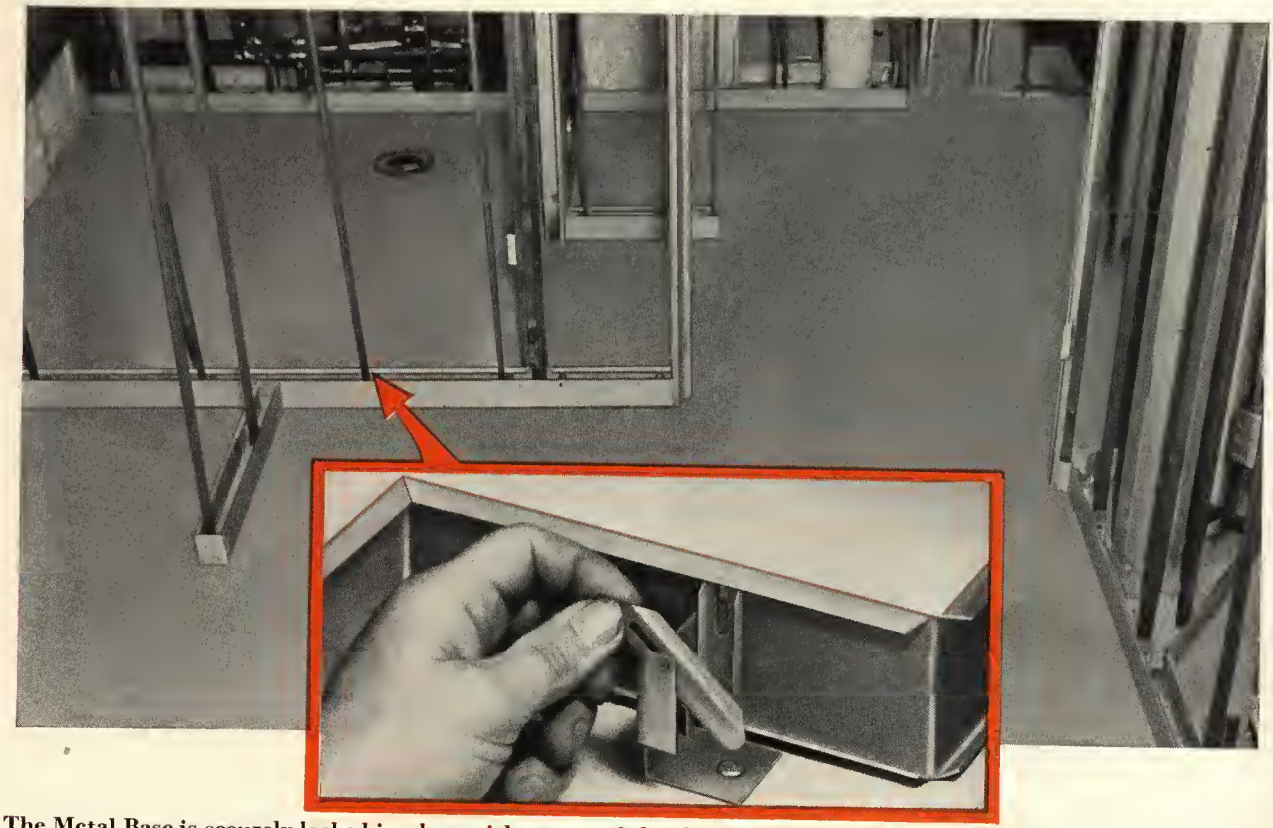
Extra expense of special T's or pre-fabricated corner units is entirely eliminated as the metal base can be quickly cut or bent on the job to take care of unusual angles or irregularities. The base sections are neatly joined in one easy operation with Gold Bond Splice Plates. Joints are hardly noticeable.

Formed on the Job!

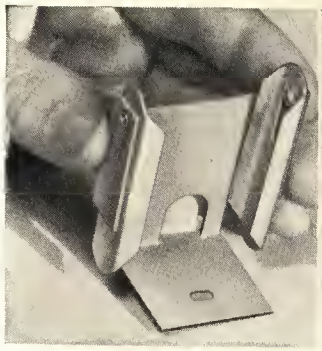
Special cutting and bending equipment which may be rented at low cost through Gold Bond Dealers makes it easy to form all metal base angles right on the job. There is no need whatever for factory-formed parts.

Only Four Units Required

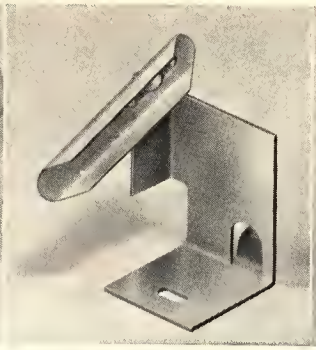
Only four units are used in this simplified system—the ceiling runner, metal base, metal base clips, and the steel studs which are standard 3/4-in. cold rolled channels. For the plaster base, Gold Bond Diamond Mesh Metal Lath is recommended. An illustrated book with further details of this system will be sent upon request.



The Metal Base is securely locked in place with a turn of the slotted arms of the Adjustable Clips. Another exclusive feature—the Adjustable Clips permit instant removal of Metal Base sections whenever necessary during erection.



Metal Base Clip



Furred Wall Clip

Masonry Wall Clip

Splice Plate

Other Advantages

Fire Protection—Official tests have been made subjecting this system to heat and flame for a 5-hr. period without failure—the temperature reaching a high of 2000 degrees.

Sound Insulation—Superior to hollow 4 to 5 in. wood stud walls of the same weight in reducing sound transmission. Noise reduction factor of 37.7 decibels.

Crack Resistance—This monolithic unit of solid steel and gypsum, securely anchored to floor and ceiling, offers stubborn resistance to tension, shear, impact and vibration.

Light Weight—Gold Bond 2-in. Solid Partitions weigh only 17½ lbs. per square foot as compared with 27½ lbs. for 4-in. clay tile and plaster.

Alternate Units

Ceiling Runners—Two styles of ceiling runners are available—the "Z" Runner and the "Prong" Runner, both illustrated below. As both styles allow for irregularity of ceiling height, channels may be ordered cut to length. Either runner may be used at the option of the contractor.

Base Treatments—Either the new Metal Base with the Adjustable Clips may be used or the Floor Runner shown below. The Metal Base serves a triple purpose. It holds the channel studs in perfect alignment, provides an accurate ground for plaster, results in a neat and durable finished base . . . the Channel Floor Runner is used where specifications call for wood, linoleum or concrete base.

SPECIFICATIONS FOR GOLD BOND 2-IN. SOLID PARTITION SYSTEM

Where 2-inch solid partitions are indicated on plans or written in specifications, the Gold Bond Solid Partition System with Metal Base shall be used.

Materials

1. Metal Base shall be (2½ in. or 3 in. high) fabricated from (16, 18 or 20 gauge) galvanized steel, painted one shop coat neutral gray primer. Gold Bond Base Clips for Double Base, Furred Wall or Masonry Wall Construction shall be used to attach the Metal Base for their respective types of construction.
2. Ceiling Runners shall be Gold Bond "Z" or "Prong" type runners.
3. Channel Studs shall be standard Gold Bond ¾-in. Cold Rolled Channels.
4. Gold Bond ⅜-in. Flat Rib Lath or Diamond Mesh Metal Lath.
5. Gold Bond 3-in. Safe-Edge Cornerite.
6. Gold Bond 18-Gauge Tie Wire.
7. Gold Bond Corner Bead, Picture Mould and Base Screed.
8. Gold Bond Base Coat Plaster, Gold Bond Gauging Plaster and Gold Bond Finish Lime.

Application

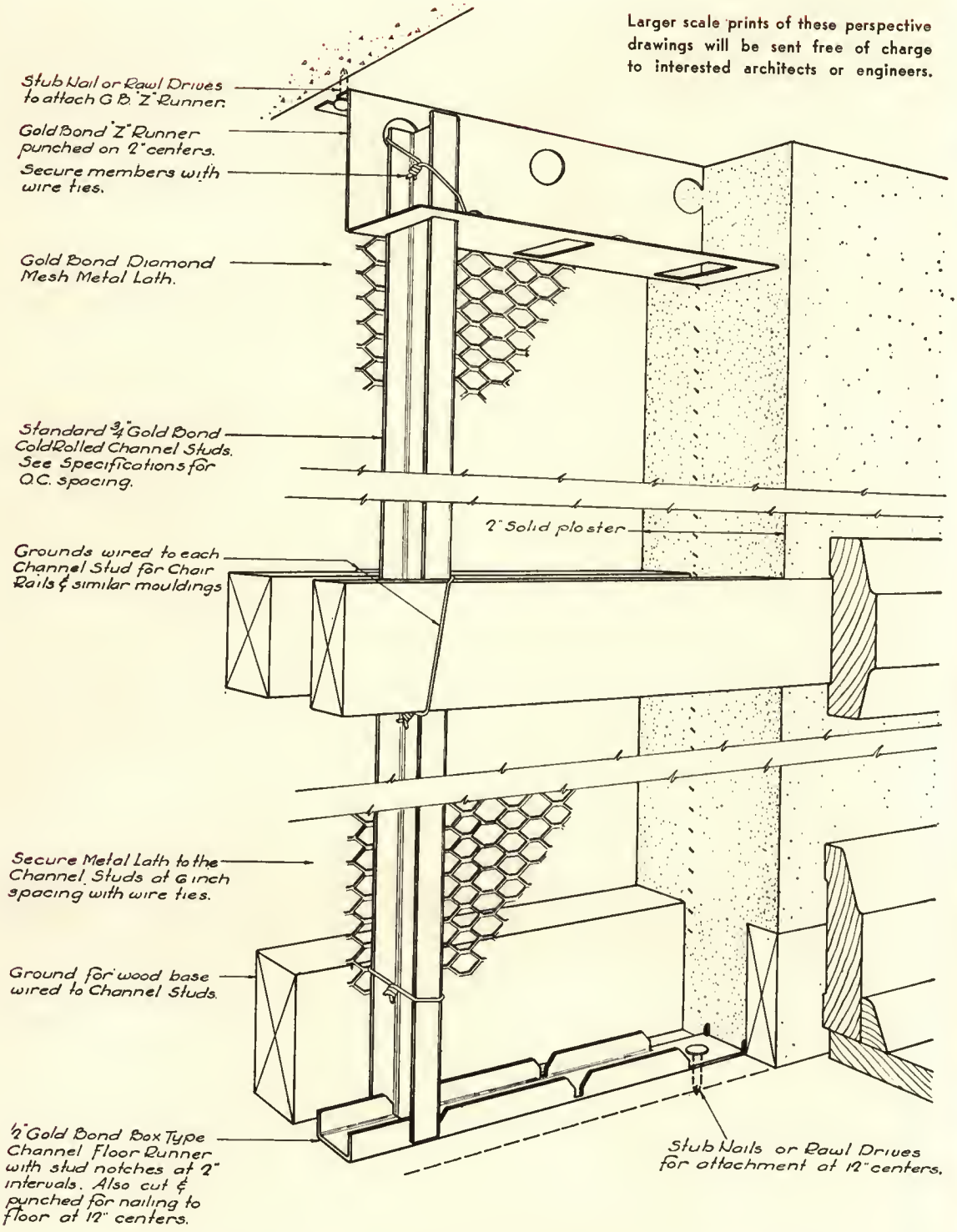
1. Gold Bond Ceiling Runner and Metal Base Clips shall be securely fastened to ceiling and floor with ½-in. concrete stub nails or Rawl Drives or other approved manner.
2. Metal Base shall be applied to Base Clips. All corners and angles shall be formed on job to meet requirements. Splice Plates shall be used at each abutting joint.
3. Channel Studs inserted in ceiling runner and dropped into slots provided in Base Clips.
4. Metal Lath shall be tied to one side of studs at intervals of 6 inches.
5. All internal angles shall be lined with 3-in. Cornerite. Corner Bead, Picture Mould and Screeds shall be wired to the partition after the lath has been applied.
6. Plaster. Follow specifications for Plastering over Metal Lath. The Metal Base shall be entirely filled with plaster grout at the time the scratch coat is applied.

CEILING AND FLOOR RUNNERS

(*At left*) "Prong" Ceiling Runner. . . . (*Center*) "Z" Ceiling Runner. Both types allow for ceiling height variations. (*At right*) Channel-shaped Floor Runner. The channels fit securely into slots without the necessity of tying.

GOLD BOND 2" SOLID PARTITION SYSTEM

Larger scale prints of these perspective drawings will be sent free of charge to interested architects or engineers.



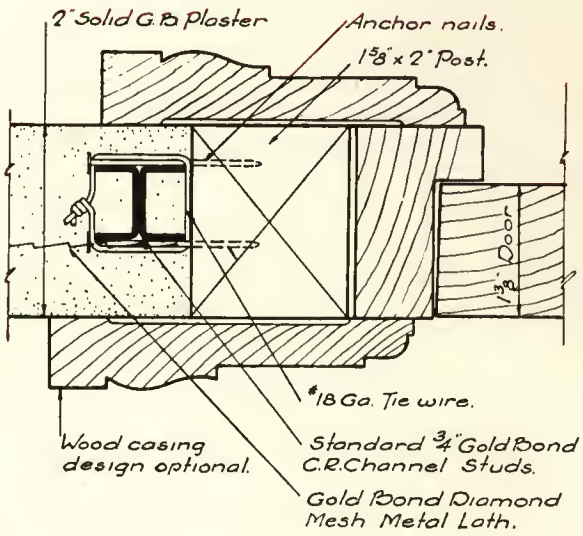
2" SOLID PLASTER PARTITION ASSEMBLY

Showing Wood Base and Chair Rail Attachment.

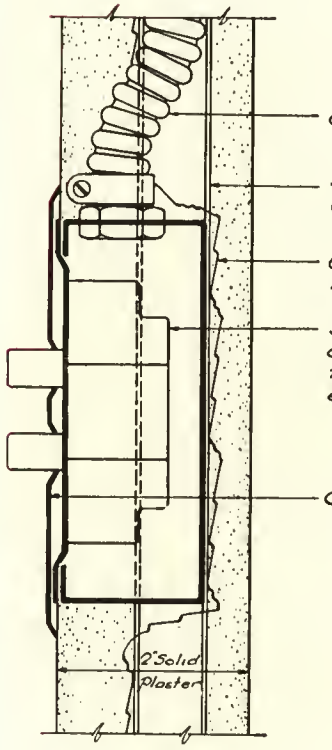
GOLD BOND 2" SOLID PARTITION SYSTEM

WOOD TRIM DETAILS
AND SERVICE OUTLET

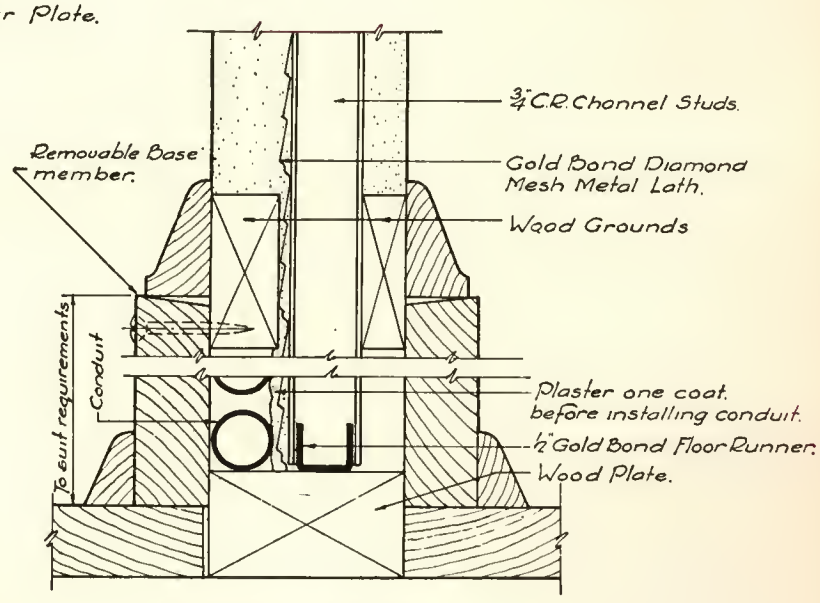
Full scale prints of all of these detail drawings will be sent free of charge to interested architects or engineers.



WOOD JAMB



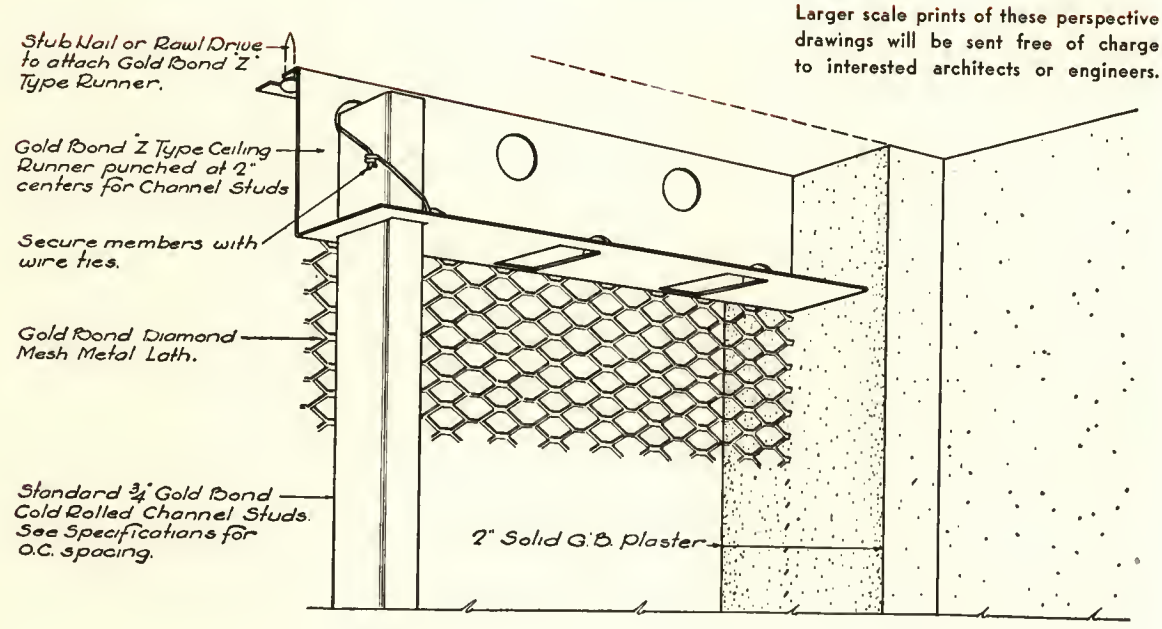
SWITCH BOX

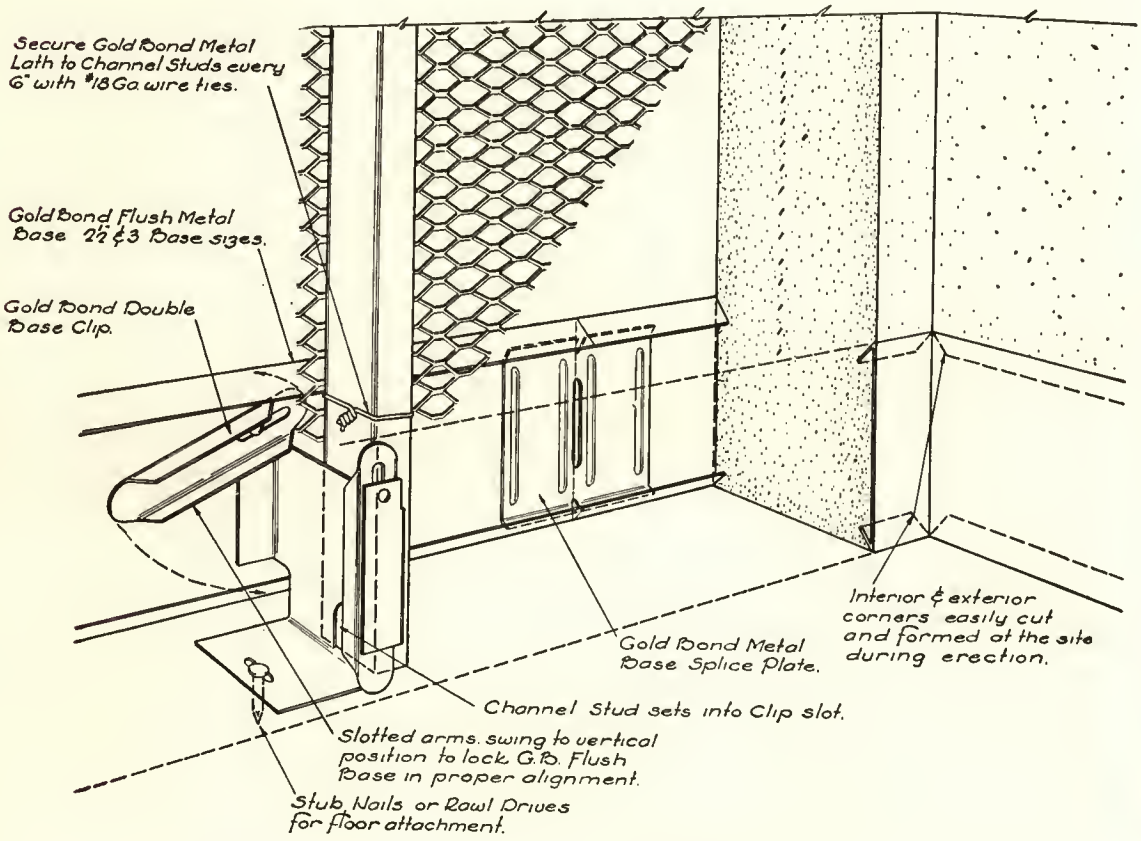


WOOD BASE
Housing Elect. Conduit.

GOLD BOND 2" SOLID PARTITION SYSTEM

Larger scale prints of these perspective drawings will be sent free of charge to interested architects or engineers.



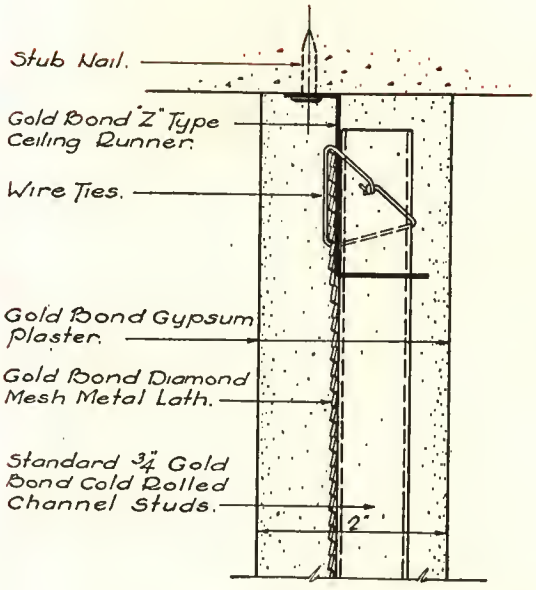


PERSPECTIVE OF 2" SOLID PLASTER PARTITION

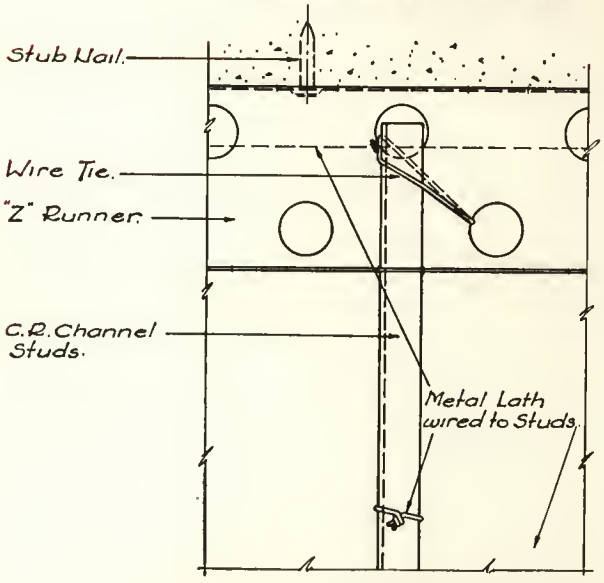
Showing Assembly With Gold Bond Flush Type Metal Base

GOLD BOND 2" SOLID PARTITION SYSTEM

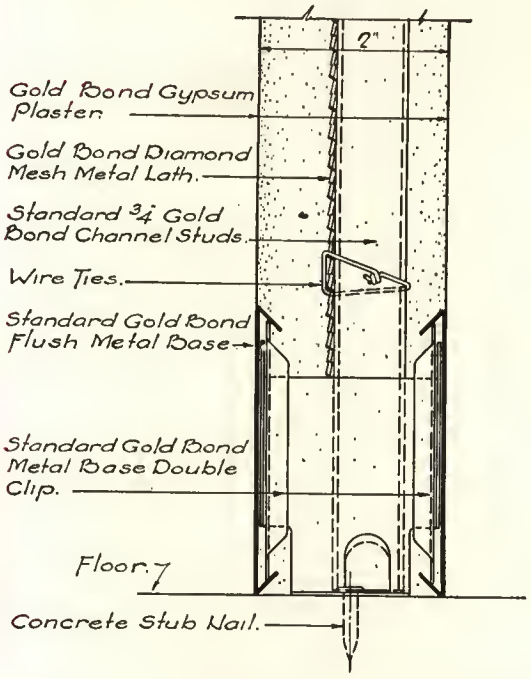
Full scale prints of all of these detail drawings will be sent free of charge to interested architects or engineers.



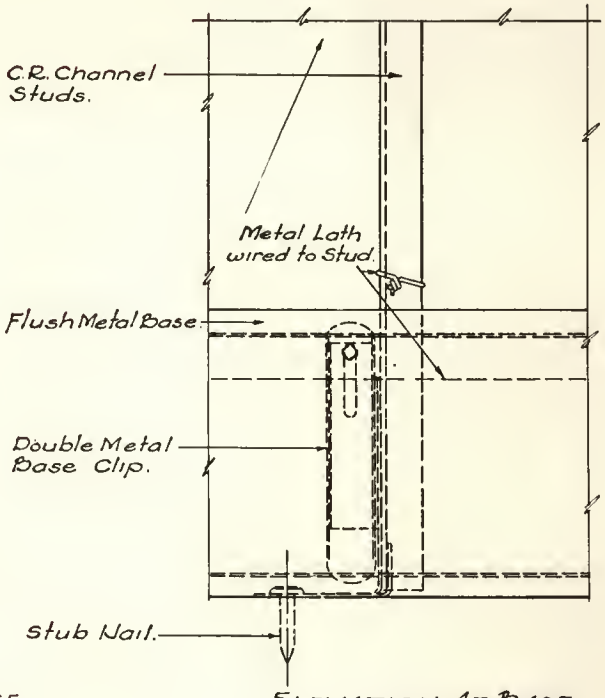
SECTION AT CEILING



ELEVATION AT CEILING



TYPICAL DETAIL AT BASE

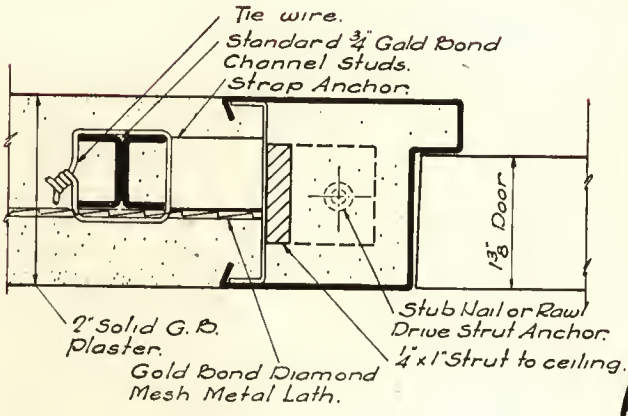


ELEVATION AT BASE

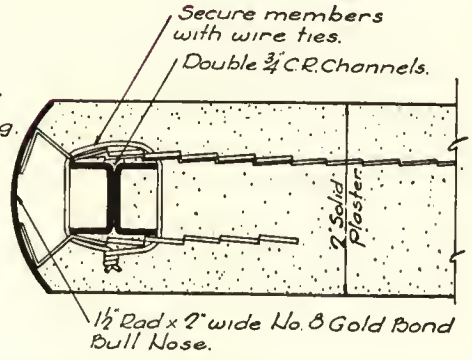
GOLD BOND 2" SOLID PARTITION SYSTEM

DETAILS OF METAL TRIM

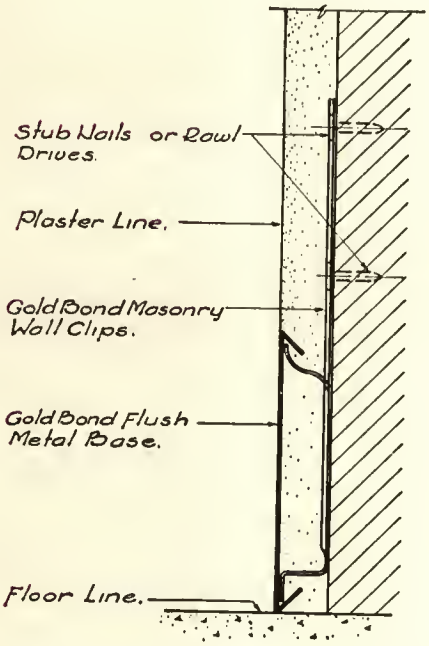
Full scale prints of all of these detail drawings will be sent free of charge to interested architects and engineers.



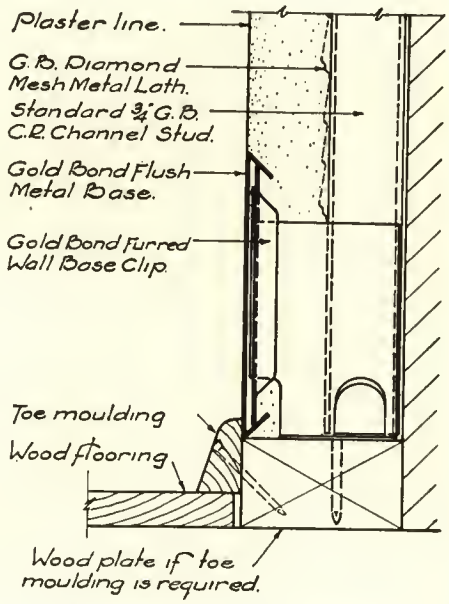
METAL DOOR BUCK



BULL NOSE CASED OPENING JAMB



GOLD BOND MASONRY WALL CLIP



FURRED WALL CLIP

Gold Bond

PARTITION SYSTEMS

HOLLOW WALL SYSTEM . . . Easy to erect. Cuts noise transmission. Simplifies wiring and piping work.

THE GOLD BOND Hollow Wall System uses the same metal parts and has all the advantages of the 2 in. Solid Partition System described on the preceding pages, plus the following:

1. **Greatly reduces transmission of noise** from room to room. A 4 inch Gold Bond Hollow Wall Partition has a noise-reduction rating of 49.5 decibels—nearly 10 decibels better than ordinary hollow walls!

2. **Vastly simplifies installation** of wiring, water, steam and soil pipes and air ducts, because there are no intrawall members to interfere with horizontal or vertical runs.

3. **Builds any thickness of partition** from as narrow as 4 inches to whatever width is desired to enclose air ducts, chutes, etc.

4. **Extra thickness costs no more.** Increasing the thickness to accommodate pipes, ducts, etc. adds nothing to the cost of Gold Bond Hollow Wall Partitions since no extra material or labor is required.

5. **Weighs less.** The total weight per square foot of Gold Bond Hollow Wall Partition is only 17½ to 18 lbs. as compared with 28 lbs. for 3 inch masonry and plaster. The dead load saving on a 10-foot wall may be as high as 100 lbs. per running foot!

ALL ANGLES FORMED ON THE JOB

Even the most intricate angles are formed right on the job with special shaping equipment which is rentable at low cost from National Gypsum Company. No special techniques are involved. No factory-formed shapes are ever required.

NO BRIDGING

Opposite walls of the partition are completely independent. No cross members.

SPECIFICATIONS

Scope of Work

Where Metal Lath non-bearing partitions are indicated on plans or as specified, the Gold Bond Hollow Wall Partition system shall he used.

Materials

1. Gold Bond "Z" Ceiling Runner made from 26 gauge steel painted one coat of asphalt paint.

2. Gold Bond ¾ in. Cold Rolled Channel Studs fabricated from 16 gauge steel. Painted one coat of asphalt paint.

3. Gold Bond Metal Base 2½ in. or 3 in. high, fabricated from 18-gauge galvanized steel, painted one shop coat neutral gray primer.

4. Gold Bond Metal Base Clip with single adjustable locking arm. 2½ in. or 3 in. high, fabricated from 18 gauge galvanized steel.

5. Gold Bond Metal Base Splice Plate, 2½ in. or 3 in. high fabricated from 18 gauge galvanized steel.

6. Gold Bond Diamond Mesh Lath, fabricated from copper alloy steel and painted one coat of asphalt paint.

7. Gold Bond No. 18 gauge Galvanized Tie Wire.

8. Rawl Drives or Concrete Stub Nails.

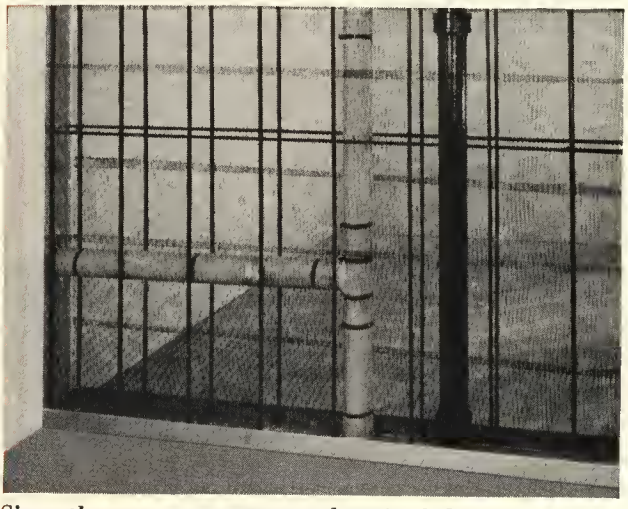
9. Gold Bond Corner Beads, Picture Moulding and Base Screed.

10. Gold Bond Base Coat Plaster, Gold Bond Gauging Plaster and Gold Bond Finish Lime.

Application

1. Two parallel rows of Gold Bond "Z" Ceiling Runner shall he spaced at the proper location to give a wall thickness as indicated on drawings or as specified, and shall be attached to the ceiling with Concrete Stub Nails or Rawl Drives or in other manner approved by architect.

2. Gold Bond Metal Base Clips shall be fastened to the floor with Concrete Stub Nails or Rawl Drives, or in other manner approved by architect. In locating Clips care should be taken to assure a wall that will finish perfectly true both horizontally and vertically.



Since there are no cross members in Gold Bond Hollow Wall Partitions, it is much simpler to install horizontal, vertical or sloping runs of pipes or ducts.

3. Channel Studs shall be inserted through the slots provided in "Z" Ceiling Runner, then dropped into stud prong in Metal Base Clip. Channel studs shall be spaced not to exceed 16 in. on center. If wider spacings are desired Gold Bond Flat Rib or ⅜ in. Rib Lath shall be used. Complete spacing data follows.

CORRECT SPACING OF CHANNEL STUDS

TYPE OF LATH	WEIGHT, LBS. PER SQ. YD.	MAXIMUM SPACINGS OF SUPPORTS
Gold Bond Diamond Mesh Lath	2.5 3.4	16 in. 16 in.
Gold Bond Flat Rib Lath	2.75 3.4	16 in. 24 in.
Gold Bond ⅜ in. Rib Lath	3.4 4.0	32 in. 32 in.

4. Gold Bond Metal Base shall be applied to clips and lever arms closed, locking it into position. All corners and angles shall be formed on the job to meet building conditions.

5. Each row of channel studs shall be permanently braced horizontally with ¾ in. Cold Rolled Channels securely tied to each stud. The horizontal stiffeners shall be spaced not to exceed 4 ft. on centers vertically and should be placed so that there is no contact between opposite sides of partition.

6. Gold Bond Metal Lath shall be applied with the long dimension of the sheets across the Channel Studs. End laps shall be at least 1 in. and shall be made over channels. Long edges of Diamond Mesh Lath shall be lapped at least ½ in. Long edges of Rib Lath shall be lapped by nesting the outer ribs. Lath shall be wired with No. 18 gauge galvannealed wire to all Channel Studs at intervals of not more than 6 in. and laps between channels shall be tied at intervals of not more than 9 in.

7. At all internal angles, metal lath shall be extended around the angle or intersection to continuously reinforce the plaster.

8. Galvanized Corner Beads, Picture Moulding, and Base Screeds, wherever indicated shall be wired to the partition after lath is applied. These shall be shimmed where necessary to bring to true alignment. Ties shall he at intervals not to exceed 12 in.

9. Where exterior walls are to be furred with steel Channel Studs follow the same procedure used in erecting one side of Gold Bond Hollow Wall.
Where plaster is to be applied directly on masonry or where exterior walls are furred with wood the Gold Bond Masonry Wall Clip shall be used to attach metal base to the wall.

Suspended Ceilings

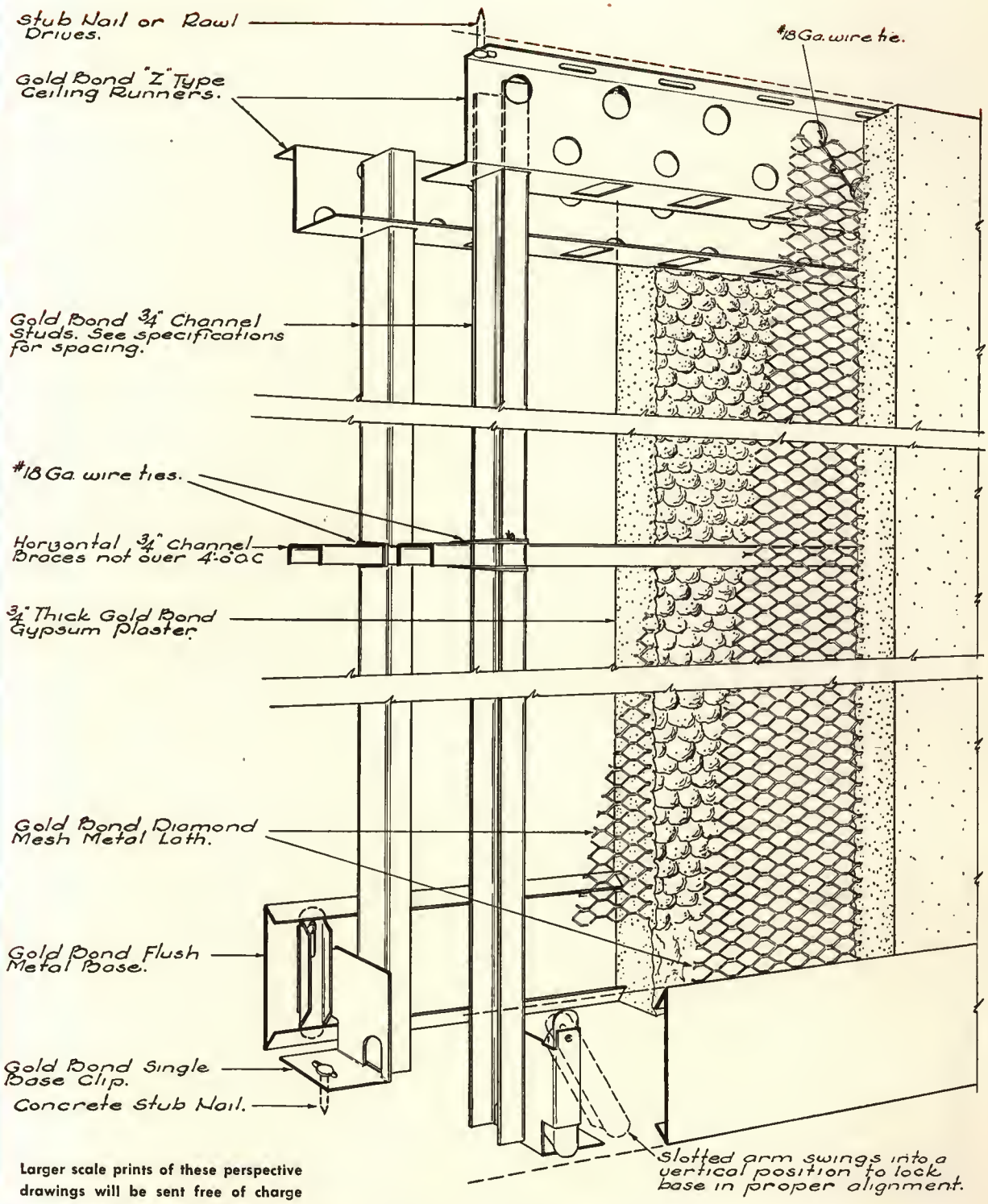
Wherever suspended ceilings are specified, the ceiling shall be lathed completely before erection of partition system. When Gold Bond Hollow Partitions are used in conjunction with suspended ceiling the Gold Bond "Z" Ceiling Runner may be omitted. The ceiling lath shall in this case be cut to receive ends of channels studs which must extend above the ceiling lath. A ¾ in. Cold Rolled Channel used for alignment shall be wired to underside of metal lath ceiling and channel studs wired to alignment channel.

Plastering

Follow specifications for plastering over Metal Lath as outlined in the Plastering Specifications section of this book.

Note: Plaster must be worked down behind metal base to assure full benefit of sound insulating qualities.

GOLD BOND HOLLOW WALL PARTITION SYSTEM

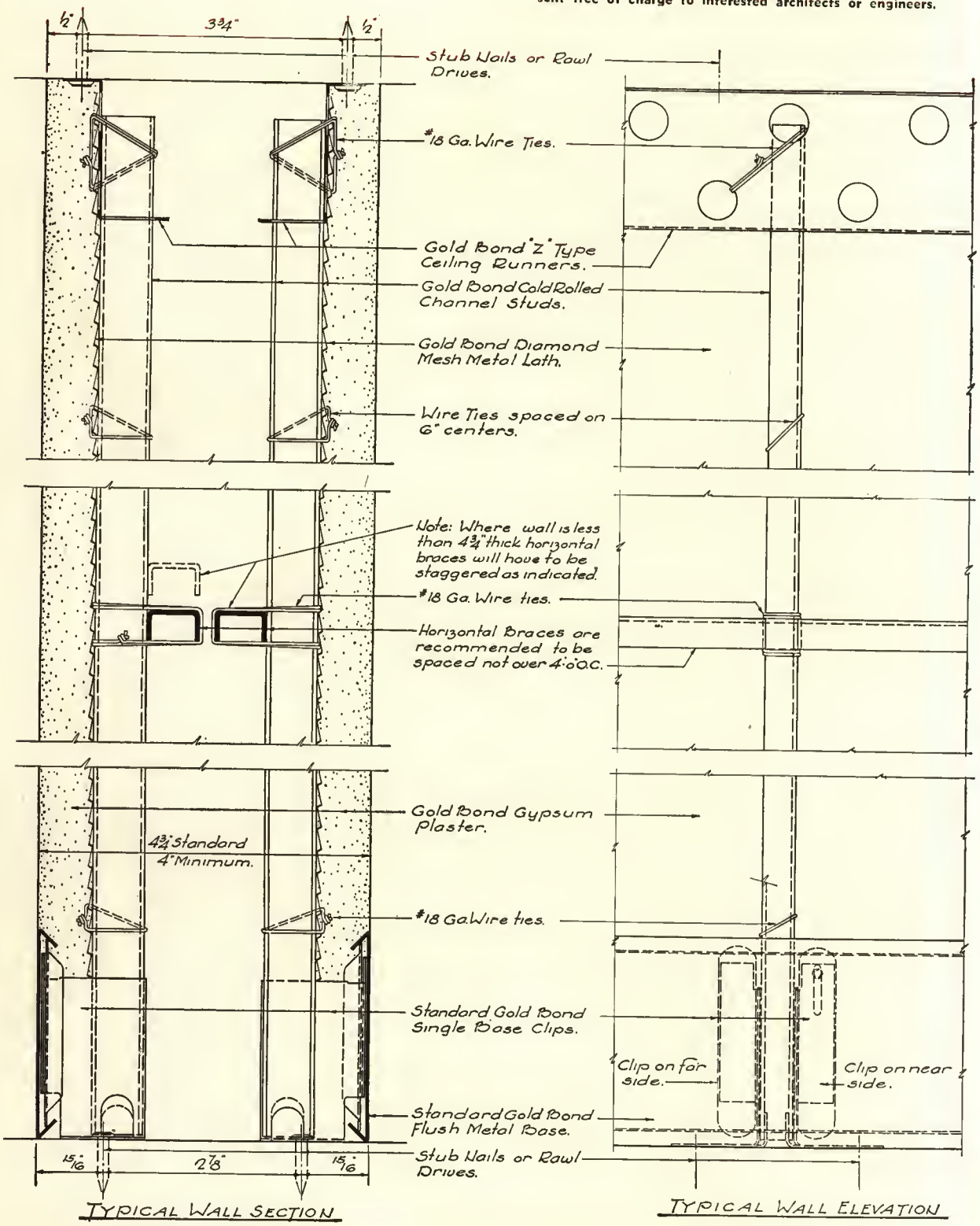


Larger scale prints of these perspective drawings will be sent free of charge to interested architects or engineers.

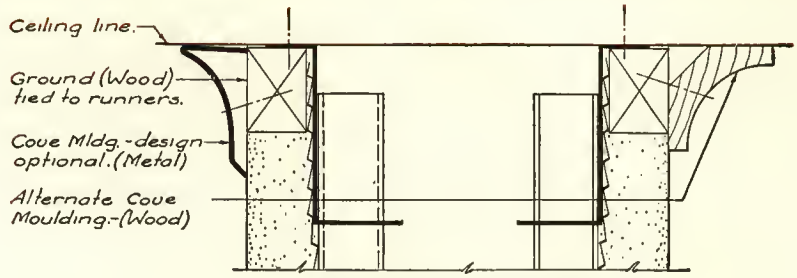
PERSPECTIVE OF HOLLOW WALL ASSEMBLY

GOLD BOND HOLLOW WALL PARTITION SYSTEM

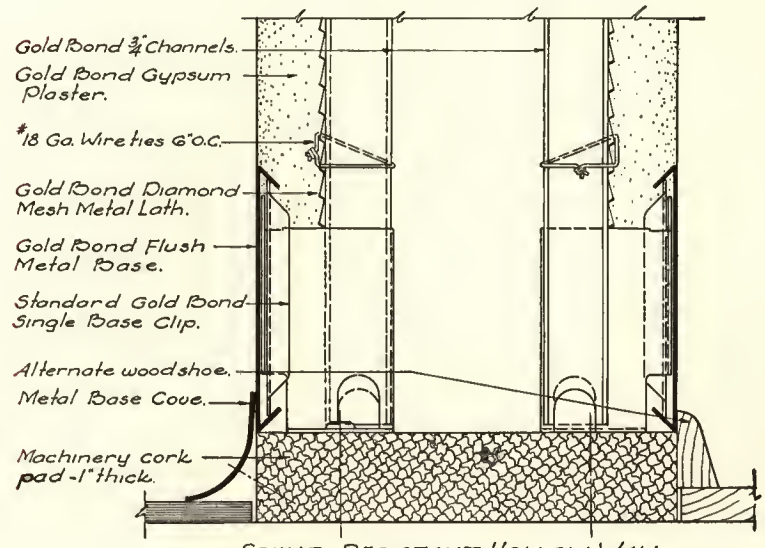
Full scale prints of all these detail drawings will be sent free of charge to interested architects or engineers.



GOLD BOND HOLLOW WALL PARTITION SYSTEM

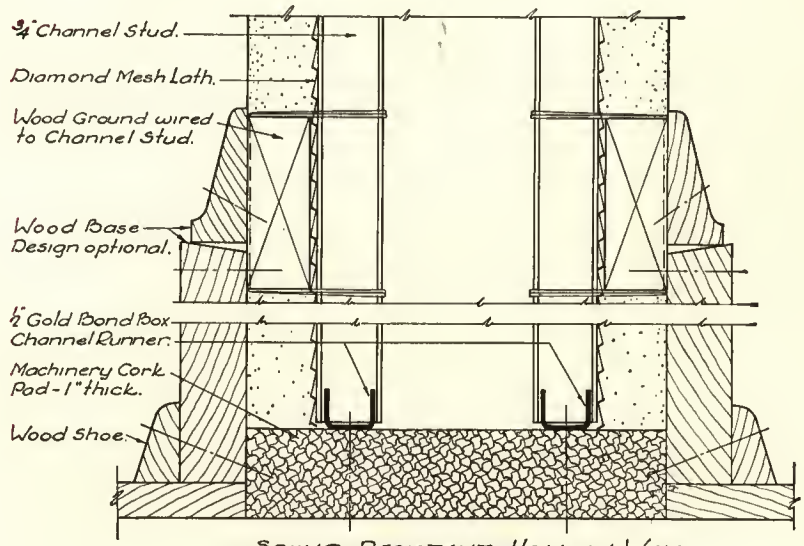


ALTERNATE DETAIL AT CEILING



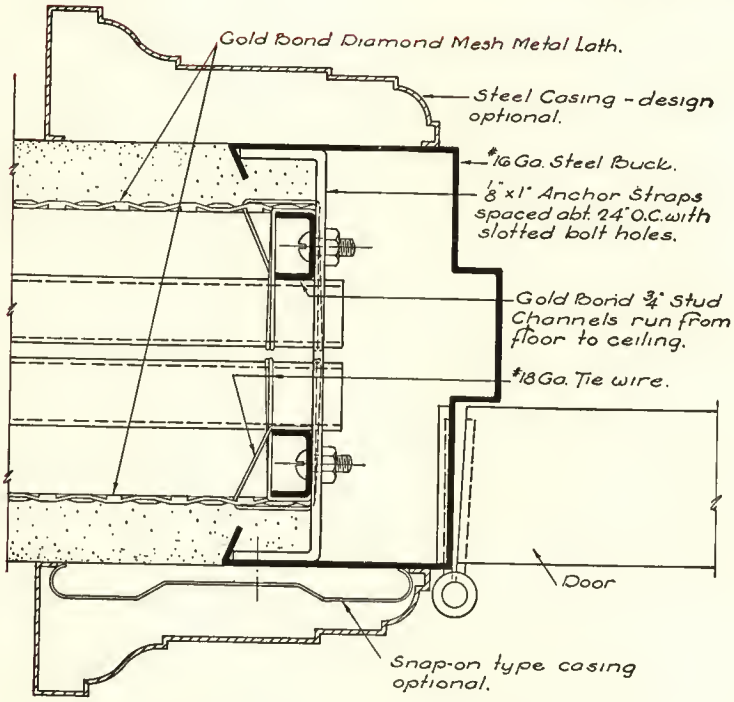
SOUND-RESISTANT HOLLOW WALL
(With Metal Base)

Full scale prints of all of these detail drawings will be sent free of charge to interested architects or engineers.

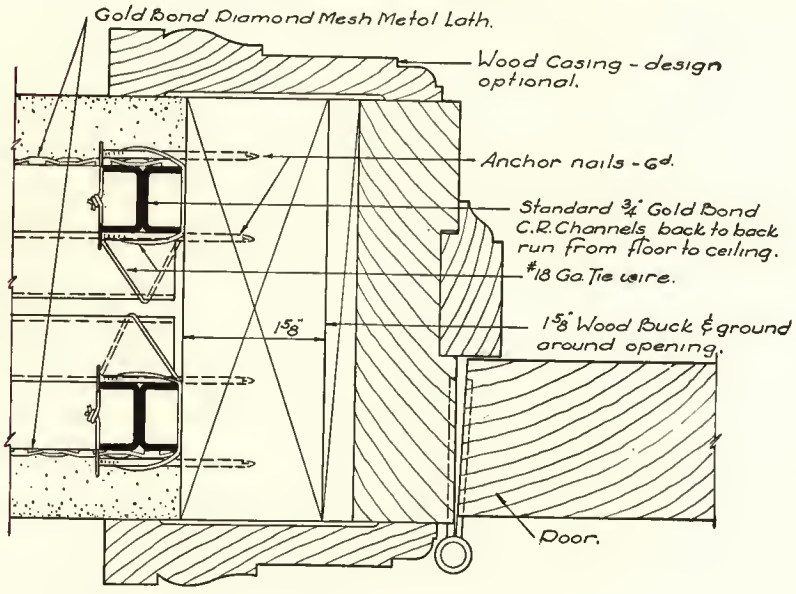


SOUND-RESISTANT HOLLOW WALL
(With Wood Base)

Full scale prints of all of these detail drawings will be sent free of charge to interested architects or engineers.

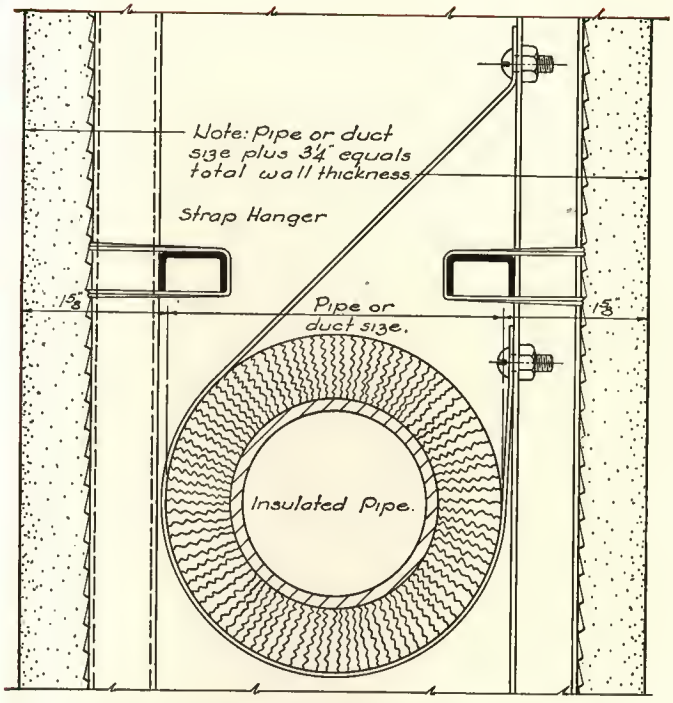


DETAIL OF STEEL DOOR JAMB



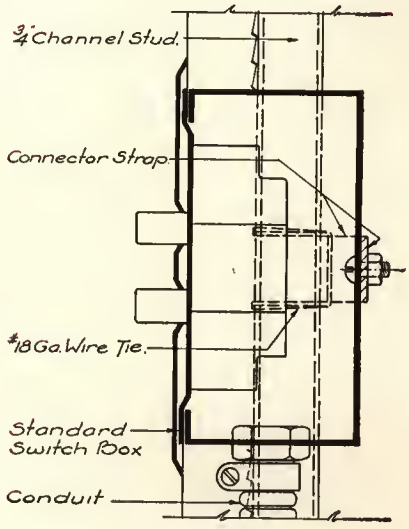
DETAIL OF WOOD DOOR JAMB

GOLD BOND HOLLOW WALL PARTITION SYSTEM

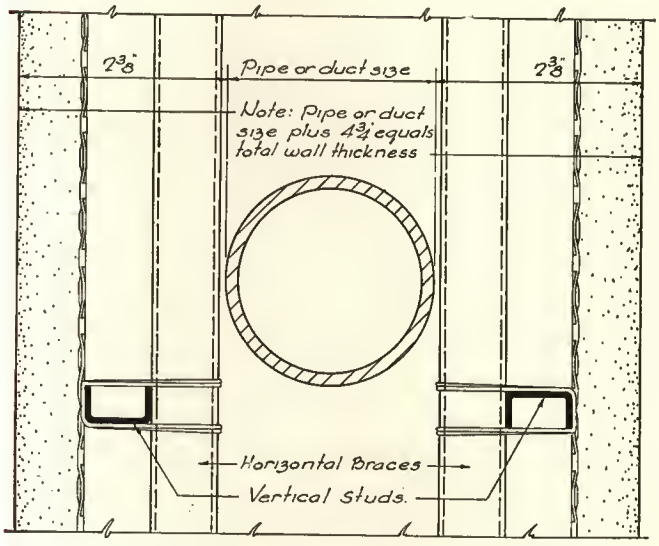


DETAIL FOR HORIZONTAL PIPES & DUCTS.

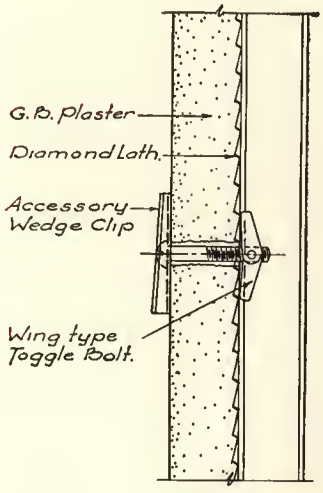
Full scale prints of all of these detail drawings will be sent free of charge to interested architects or engineers.



SWITCH BOX



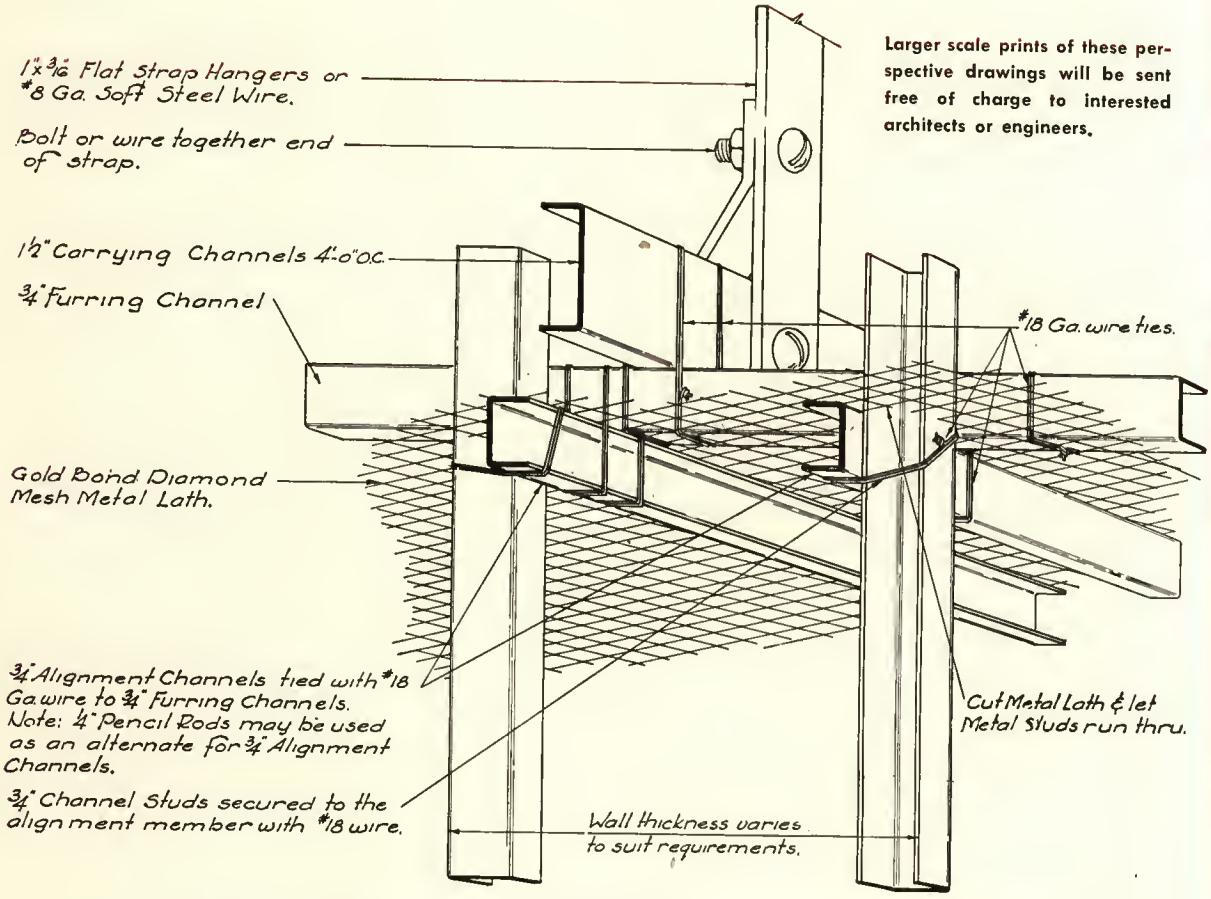
DETAIL FOR VERTICAL PIPES & DUCTS



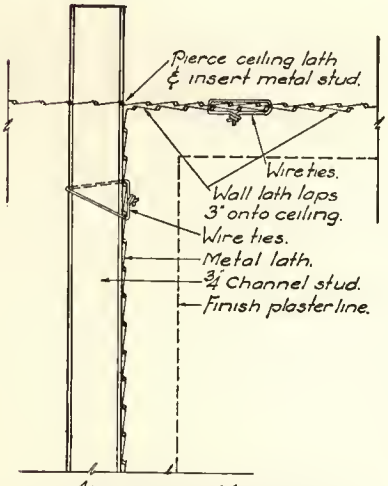
WALL CONNECTOR

GOLD BOND HOLLOW WALL PARTITION SYSTEM

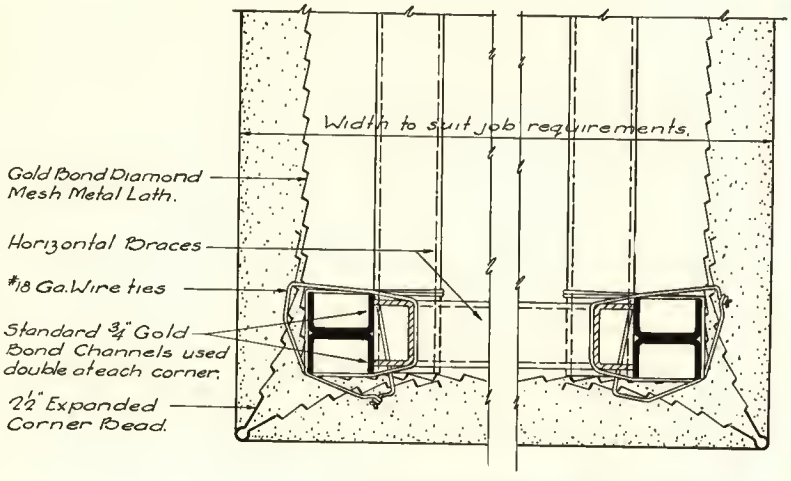
Larger scale prints of these perspective drawings will be sent free of charge to interested architects or engineers.



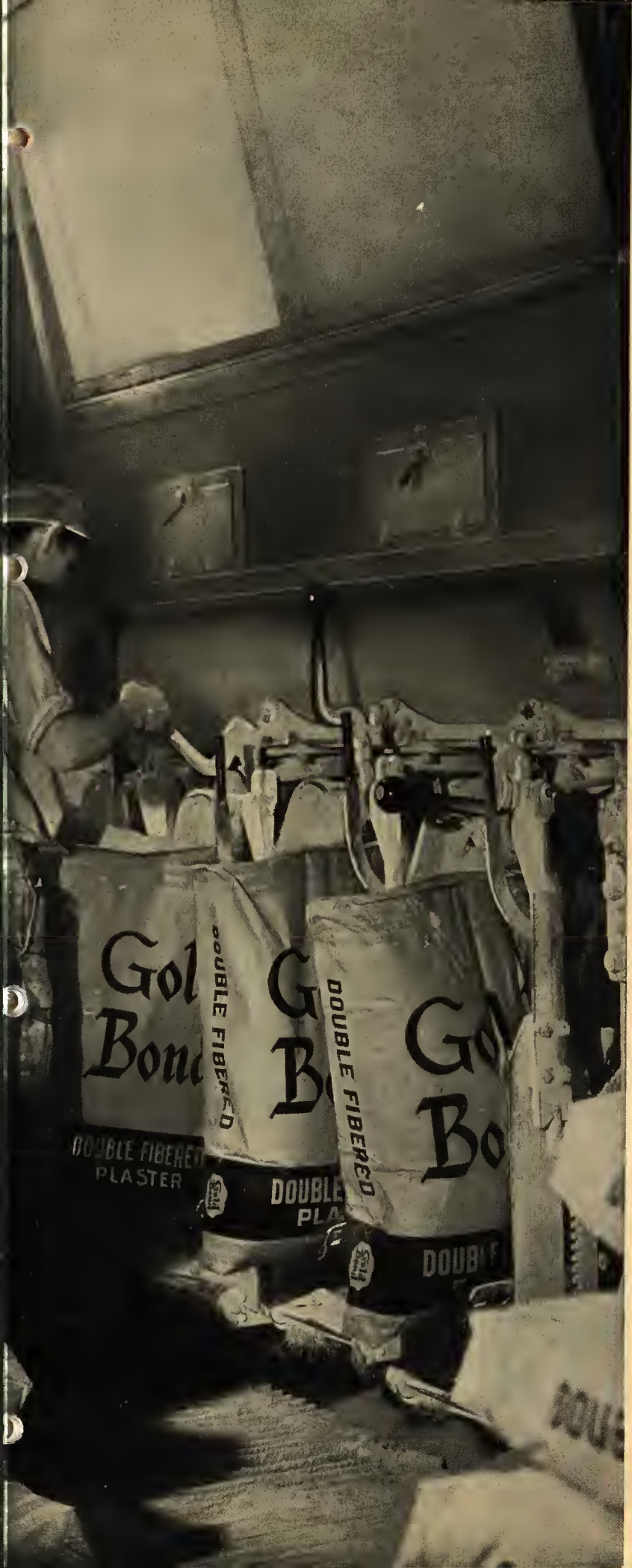
HOLLOW WALL & SUSPENDED CEILING WITH STUD ALIGNMENT CHANNEL



ALTERNATE METHOD WITHOUT ALIGNMENT CHANNEL



PLASTERED ARCH JAMB
Head Similar



SECTION THREE

Gold Bond

GYPSUM PLASTERS AND LIME

Pages 26-27

GYPSUM PLASTERS
CHARACTERISTICS AND ADVANTAGES

Pages 28-29

GLOSSARY - COVERAGE TABLES

Pages 30-31

BASE PLASTERS

Page 32

FINISHING PLASTERS

Page 33

BEST BROS'. KEENE'S CEMENT

Page 34

FINISH AND MASON'S LIME

Pages 35-42

MASTER SPECIFICATIONS

CATALOG 11a/7, Pages 10-11

"MACOUSTIC" ACOUSTICAL PLASTER

At Left:
Mechanically controlled mixing and bagging equipment assures accurate blending and weighing of plaster without possibility of human error.

Gold Bond GYPSUM PLASTERS

Quality-control supervision of every step in manufacturing assures uniform high quality.

NATIONAL GYPSUM owns vast mines and quarries in the richest gypsum sections of the country, insuring approximately a hundred years' supply of exceptionally pure rock used in making famous Gold Bond Plaster.

Purity Assured

Here in these mines and quarries daily tests are made to assure the constant purity of the rock—actual tests proving that the purity of the gypsum has a decided effect upon the strength and hardness of the finished wall. High purity also increases the coverage and smooth working qualities of the finished plaster.

Gold Bond spares no trouble or expense to obtain the purest gypsum rock, and then follows it by laboratory tests through every process of manufacture to the finished job.

Tested for Individual Markets

For this purpose—suiting the plaster to the particular market where it will be used—the Gold Bond laboratories are constantly testing specimens of sand from every part of the country where Gold Bond plaster is sold. Samples are continually being secured to meet changes in local conditions.

Before shipping, every batch of plaster is tested to meet the requirements of the particular sand of the vicinity into which the plaster is to be shipped. A somewhat costly process from the viewpoint of the manufacturer, but well worth the expense as it assures our customers of getting plaster that is particularly suited to their respective territories regardless of any unusual local conditions. Patented processes insure uniformity of performance under normal job variations and weather conditions.

Gold Bond Microplastic Plaster one of the greatest improvements in plaster history

Gold Bond Plasters have long been accepted as "standard" among the leading contractors of the country. Then in 1935, this enviable position was greatly enhanced by the introduction of a brand new plaster—Gold Bond Microplastic Plaster, produced after years of intensive research work.

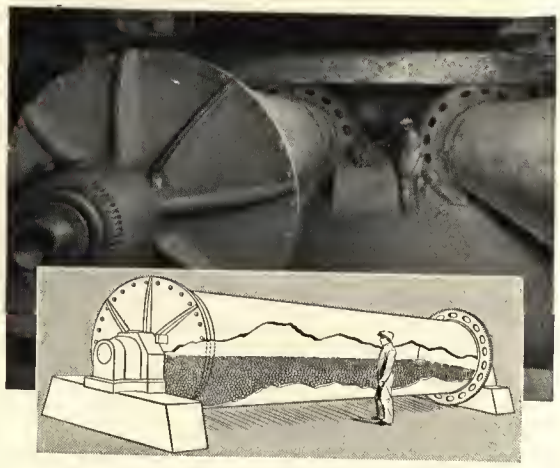
This improved method of processing has resulted in a product that is practically foolproof as far as application is concerned. Plasticity or workability has been increased 100% with far greater coverage. The new Gold Bond Microplastic Plaster met with instant approval and experts considered this to be the greatest forward step in the development of plaster in many years.

What the Micron-Sizing Process Actually Accomplishes

Before After

Note the contrast between these microphotos. At the left the plaster is coarse and flinty, while at the right the plaster after the Micron-Sizing Process has been broken down into millions of tiny particles and then rolled into soft, felted balls.

New Equipment and New Processes Create New High Quality in Plaster



Above: Two of the huge revolving mills which regrind the gypsum particles into micron sizes and roll them into soft felted balls.
Below: An X-ray drawing of interior of mill showing the 100,000 manganese steel balls which do the pulverizing.

Micron Sizing Multiplies Plasticity

It is a well established scientific principle that in the setting of plaster a gelatinous plastic film is produced on the surface of the particles of calcined gypsum. Gold Bond, as one step in manufacture, regrinds the particles to micron sizes (1/25,000 inch). The enormous increase in area resulting greatly multiplies the bulky gelatinous smooth working qualities.

GYPSUM PLASTERS . . . CHARACTERISTICS AND ADVANTAGES

The high grade gypsum rock used in the manufacture of all Gold Bond Plasters is hydrated calcium sulphate, containing approximately 20% of chemically combined water. In the calcination process most of this water is driven off, producing "plaster of Paris" which is the base of all gypsum plasters. On remixing with water on the job, the material takes back the water driven off in calcination and crystallizes or sets to the original gypsum rock.

In making Gold Bond Gypsum Plasters, small amounts of other materials are added to the basic "plaster of Paris" to control the time of set, working qualities, type of use, and particular market conditions of territory to which it is shipped.

May Be Used on All Plastering Bases

One of the many advantages of gypsum plaster is that it may be used on all types of plastering bases in addition to masonry surfaces. It may be used on gypsum, wood or metal lath; clay, concrete or gypsum tile; cement or cinder blocks; brick, concrete or other standard masonry plastering surface.

Adhesion Qualities

The particularly strong adhesive quality of gypsum plaster has been practically demonstrated in tests at the U. S. Bureau of Standards. It was conclusively shown that it does not depend entirely on mechanical keys but bonds on actual suction or adhesive qualities.

Dries Quickly

The advantages of the quick set and rapid drying qualities of gypsum plaster are very important in the completion of a building as well as reducing overhead. The usual time for a hard set is from 2 to 6 hours and complete drying in about 36 hours depending on weather and the season of the year. After drying there is no further sweating or dampness.

Durability

Gypsum plaster forms a hard, tough base for the application of finish coats or decoration. The tough base coats help the plaster wall to withstand rough usage which it may receive during the life of the building.

Low Coefficient of Expansion

After being applied, gypsum plaster remains inert and does not expand or contract materially even when subjected to fire. As it is made of gypsum it is absolutely incombustible.

Packaging

Shipped usually in 100 lb. paper bags; and some specialty products in 250 lb. barrels.

At Left:
Gypsum Quarry at
Fort Dodge, Iowa

At Right:
Gypsum Mine at
Medicine Lodge, Kansas

Gold Bond

GYPSUM PLASTERS

GLOSSARY of common terms and information about types of gypsum wall plasters and their uses.

In view of the use of numerous local or descriptive names for the same type of plaster and widely varying market practices, it is felt that the following classification of plasters as to names and uses will be of considerable value.

BASE COAT PLASTERS

Gypsum Neat Plasters

These plasters constitute the bulk of tonnage of all types of gypsum plasters used. The term "Neat" designates plasters containing no sand, wood fiber or other aggregate. Gypsum Neat Plaster may contain either hair or sisal fiber in which case it is referred to as Fibered Neat Plaster or Fibered Cement Plaster.

Wood Fibered Plaster is never classified as "Neat" or Cement Plaster since the wood fiber is considered as an aggregate.

Gypsum Neat Plaster is called by the following names in many markets:

(a) Hardwall
(b) Patent Plaster
(c) Cement
(d) Compound
(e) Paristone
(f) Base Coat Plaster

Fibered and Unfibered Cement Plaster

Hair Fibered Plaster—

Hair Fibered Plaster may contain either hair or sisal fiber. Sisal fiber is recommended as being more satisfactory than hair in plaster.

Unfibered Plaster—

This designates only neat or cement plaster containing no fiber.

Uses for Gypsum Neat Plaster—

This material is generally used for plaster work where good plaster sand is easily available and it is economically advisable to mix sand on the job rather than use a mill-mixed material. Neat Plaster is formulated for use with sand in amounts covered in directions and *should never be used Neat*—i.e., without addition of sand.

Sanded Plaster

This material is the same as Gypsum Neat Plaster, except that a properly graded sand has been added at the mill in the proper amount for best plastering results. It has been called by many names listed under Gypsum Neat Plaster except with the term Sanded used in addition.

Uses for Sanded Plaster—

This material is used largely where good plastering sand is not easily available, where absolute exactness of proportioning of amount of sand is required, where facilities for mixing are limited, or job is not large enough to justify trouble of mixing sand on the job. Sanded plaster is used solely with addition of water on the job.

Wood Fiber Plaster

This type of plaster contains a finely shredded wood fiber and is made primarily for use with addition of water only on the job. In some cases, however, a small amount of sand (never over one part by weight) is added on the job. In some markets this material is known as Pulp Plaster.

Uses for Wood Fiber Plaster—

This material is used to a large extent for patch jobs, for work where an extremely hard wall is wanted, where base plaster is to be trowel finished, where sand is not easily available, etc.

Sanded Wood Fiber Plaster

This type plaster is on same general order as Wood Fiber Plaster except a small amount of specially graded fine sand is added. Its uses are the same as with Wood Fiber Plaster and it is used in certain markets where trade prefers a sanded wood fiber.

Concrete Bonding Gypsum Plaster

This is a specially formulated Wood Fiber Plaster to provide maximum bond to interior concrete surfaces. Ordinary gypsum or lime plaster does not bond properly to concrete surfaces. Water only is added in mixing on the job.

Bond Plaster

This is the same as Concrete Bonding Gypsum Plaster.

FINISH PLASTERS

Gauging Plaster

This is a specially ground calcined gypsum which may be either pure white or grey in color and quick or slow in set. Other names used to designate this material are as follows:

(a) Plaster of Paris
(b) Calcine
(c) Finish Plaster
(d) White Plaster (For pure white material only)
(e) Stucco

Uses of Gauging Plaster—

This material is always used in connection with lime putty finish and is the essential ingredient which provides an initial set and prevents the slow setting lime from shrinking, checking and peeling before the set of lime itself takes place. The failure to use the proper amount of Gauging Plaster is the cause of most failures on lime putty finish jobs.

The type of Gauging used depends on trade practices in each locality. The following types of material are used:

(1) White Gauging—Quick Set
(2) White Gauging—Slow Set
(3) Grey Gauging—Quick Set
(4) Grey Gauging—Slow Set

GYPSUM PLASTERS . . . GLOSSARY OF TERMS

Moulding Plaster

This is made from selected rock and specially prepared for requirements of its use. This is also sometimes called Plaster of Paris. It is used for plaster moulds, ornamental plaster work of all kinds and can he used as substitute for quick set Gauging Plaster. It is generally made as a pure white plaster hut in a few localities Grey Moulding is used for special purposes.

Prepared Trowel Finishes

These plasters are gypsum finish plasters manufactured to avoid the problems involved in use of ordinary lime putty finish. They contain no lime but various ingredients are added to produce exceptionally easy working and spreading qualities. Water only is added on the job. They are also known as

(a) Smooth Trowel Finishes (b) Gypsum Trowel Finishes

Uses of Prepared Trowel Finishes

These finishes are available as a substitute for lime putty finish whenever desired. They have replaced lime putty finish in some markets. They have the advantage of perfect bond to base, quick setting and freedom from danger of lime burn in decoration. These finishes can be safely decorated in any manner as soon as dry . . . They are available in both grey and white.

Sand Float Finishes

These are also prepared gypsum finish with addition of fine sand. For use over gypsum hase coat. They are used in markets where the semi-rough surface of a sand float finish is desired. As name implies these materials are "floated," not trowel finished. Furnished in grey color.

Keene's Cement

This is an exceptionally dense gypsum finish, fundamentally different from all other types of gypsum plasters. Made at Medicine Lodge, Kansas, by Best Brothers, the original and largest manufacturer of Keene's Cement in the country and now operated as a division of National Gypsum Company.

Keene's Cement is made in two different styles with various setting times as described on page 33.

Uses of Keene's Cement

Keene's Cement is used wherever extremely dense walls are required, such as imitation tile finishes in bathrooms and kitchens or any place where the walls will be subjected to unusual abuse. Also used as a finish coat instead of lime putty, for castings and running moulds, backing up artificial marble, facing artificial marble and for numerous ornamental plastering effects.

APPROXIMATE YARD COVERAGE PER TON ON VARIOUS PLASTERING BASES

TYPE OF PLASTER	GYPSUM LATH	GYPSUM INSULATING LATH	PAINTED METAL LATH	WOOD LATH	GYPSUM TILE	BRICK AND CLAY TILE CINDER BLOCK	CONCRETE SURFACES	BAGS TYPE WEIGHT, LBS.
NEAT*	225-240 Sanded 1-2	225-240 Sanded 1-2	105-135 Sanded 1-2	180-210 Sanded 1-2	235-255 Sanded 1-3	165-200 Sanded 1-3	Use Bond Plaster	Paper 100 lbs.
SANDED	75-80	75-80	35-45	60-70	65-70	45-55	Use Bond Plaster	Paper 100 lbs.
WOOD FIBERED	115-120 Water only no sand	115-120 Water only no sand	55-65 Water only no sand	90-100 Water only no sand	.....	.....	Use Bond Plaster	Paper 100 lbs.
BOND		90 to 120 sq. yds., depending on smoothness of surface of concrete						Paper 100 lbs.
GAUGING PLASTER		1600 sq. yds. with 2 tons of hydrated lime						Paper 100 lbs.
PREPARED SAND FLOAT FINISH		250-275 sq. yds.						Paper 100 lbs.
PREPARED TROWEL FINISH		300-400 sq. yds.						Paper 100 lbs.
KEENE'S CEMENT		400-500 sq. yds.						Paper 100 lbs.

*Sanded 1-2 equals 1 part of plaster 2 parts sand by weight. Sanded 1-3 equals 1 part plaster 3 parts sand by weight.

Gold Bond GYPSUM PLASTERS

BASE PLASTERS . . . . A full line of Fibered and Unfibered, Sanded, Wood Fibered, Bonding Plaster.

WITH regard to A.S.T.M. specifications, NATIONAL GYPSUM COMPANY guarantees any Gold Bond Gypsum Plaster product to have about double the strength requirements and to exceed by a wide margin the purity required for any special plaster product in the A.S.T.M. specifications and also every other detail of these specifications. This also applies to Federal specifications.

GOLD BOND GYPSUM NEAT PLASTER

Unfibered or Fibered with Hair or Sisal

Gold Bond Cement Plaster is "neat," not sanded, the sand being added at the job. Each shipment is prepared especially for the locality to which it is shipped and for the sand used in that locality. Fibered with hair or sisal fiber as ordered.

When mixed with sand it spreads well with a uniform working quality and with satisfactory results on the finished wall. On account of the purity of the gypsum it assures the maximum in sand carrying capacity, bulk and workability.

Note: Cement plaster should never be used neat—i. e., without adding sand.

Proportions of Sand for Various Bases

After thoroughly mixing with sand, hoe plaster into water and bring to a uniform mix of proper consistency.

Scratch Coat on Gypsum, Wood and Metal Lath—Mix 1 part plaster with 2 parts by weight of dry sand.

On Brick and Gypsum or Clay Tile—Use 1 part plaster to 3 parts by weight of sand.

Brown Coat (Second) for All Plaster Bases—Mix 1 part of plaster to 3 parts of sand.

Full ½ in. grounds should be used for best plaster work.

Application on Various Bases

On Gypsum Lath—Do not wet lath. Apply in 2 coats, scratching well in to fill joints between the lathing units. Brown coat to be darbied lightly and water used sparingly.

On Wood Lath—Soak lath 24 hours before and wet again an hour or two before plastering. Apply in 2 coats using sufficient pressure on scratch coat to obtain good key. Brown coat to be darbied lightly and water used sparingly.

On Metal Lath—Apply in 2 coats. Scratch coat to lightly cover lath and fill mesh. Scratch first coat and allow to set. Then apply brown coat, darby lightly and use water sparingly.

On Brick and Gypsum or Clay Tile—Soak brick or clay tile walls and sprinkle gypsum tile lightly before application of plaster. Apply in 2 coats. Darby brown coat lightly and use water sparingly.

APPROXIMATE COVERING CAPACITY AND SANDING

PLASTER BASE	GYPSUM LATH	WOOD LATH	METAL LATH	BRICK AND CLAY TILE	GYPSUM TILE
Coverage	225-240	180-210	105-135	165-200	235-255
Mix	1 plaster 2 sand	1 plaster 2 sand	1 plaster 2 sand	1 plaster 3 of sand	1 plaster 3 of sand

Coverage Figures are in square yards per ton.

GOLD BOND SANDED GYPSUM PLASTER

Factory mixed with specially graded sharp sand

Gold Bond Sanded Plaster is the same as cement plaster but is accurately factory mixed and sanded with especially selected and graded sharp sand. It requires only the addition of water and mixing to be ready for use. It is useful for localities where good local sand is difficult to obtain or where an accurate mix is wanted.

Gold Bond Sanded Plaster is also desirable for use during the winter as it eliminates the need for drying sand which is wet and frozen or for trying to secure unfrozen sand.

Gold Bond Sanded Plaster is also useful for remodeling and repair work as it may be mixed inside the building.

Application on Various Bases—Gold Bond Sanded Plasters are applied to the various plastering bases in the same manner as for Cement Plaster (see description above).

Mixing—Add nothing but water, hoeing plaster into water and mixing thoroughly. First mix thin, then add dry material to bring to proper consistency.

Neat Plaster Bag

APPROXIMATE COVERAGE—GOLD BOND SANDED PLASTER

PLASTER BASE	GYPSUM LATH	WOOD LATH	METAL LATH	BRICK AND CLAY TILE	GYPSUM TILE
Coverage	75-80	60-70	35-40	45-55	65-70

Coverage Figures are in square yards per ton.

Sanded Plaster Bag

GOLD BOND GYPSUM BASE PLASTERS

GOLD BOND WOOD FIBERED GYPSUM PLASTER

Used for Base Coats Except on Brick and Gypsum and Clay Tile

Unsanded or "Neat" Wood Fibered Plaster is a gypsum plaster containing finely shredded wood fiber and requires only the addition of water to be ready for use. It does not require sand but in some localities 1 part, by weight, of sand is added.

The wood fibered plaster when used unsanded avoids dangers of over-sanding and works and spreads freely and easily. The plaster is about two-thirds lighter in weight than sanded plaster. The wood fiber acts as a reinforcing and produces a dense, tough, strong and durable base, especially for troweling. It is superior in fire resisting and sound deadening qualities to sanded plasters and will stand up where strains and vibrations are encountered. It saws like wood. It is especially adapted for winter work and alterations as it is easily handled.

Sanded Wood Fibered Plaster—Same as unsanded but is shipped factory mixed with proper amount finely graded sand.

Mixing for Application on Various Bases

Hoe plaster into water and allow to soak for 10 to 20 minutes, then mix to the proper consistency.

Scratch Coat—Use "Neat" or Sanded for wood, gypsum lath and metal lath.

Brown Coat—Use "Neat" or Sanded for wood and gypsum lath and Sanded for metal lath.

Note: Do not use either on Brick and Gypsum or Clay Tile.

Application on Various Bases

On Gypsum Lath—Do not wet lath. Apply in coats scratching well to fill joints between the lathing units and scratch surface. Allow first coat to set and dry; then apply brown coat and broom surface before it sets.

On Wood Lath—Soak lath. Apply in coats, applying scratch coat with sufficient pressure to obtain proper key and scratch surface. Apply brown coat and broom surface before it sets.

On Metal Lath—Apply in two coats, applying scratch coat, of stiffer consistency, to cover lath and fill mesh. Apply brown coat and broom surface before it sets.

On Brick and Gypsum or Clay Tile—

Note: Wood Fibered Plaster is not recommended for use on these bases.

APPROXIMATE COVERAGE—GOLD BOND WOOD FIBERED PLASTER

PLASTERING BASE	GYPSUM LATH	WOOD LATH	METAL LATH	BRICK AND CLAY TILE	GYPSUM TILE
Coverage Mix	115-120 Unsanded add water only	90-100 Unsanded add water only	55-65 Unsanded add water only	Not recommended on these bases	

Coverage Figures are in square yards per ton.

GOLD BOND CONCRETE BONDING GYPSUM PLASTER

For Base Coats on Interior Concrete Surfaces

This plaster is made especially to bond to concrete surfaces, on which ordinary gypsum or lime plasters will not adhere properly. It is used for scratch and brown coats. Only water should be added on the job. Do not use with sand.

All surfaces of concrete must be dry, absolutely clean, free from oil and efflorescence and should be roughened if the surface is troweled smooth.

The plaster should be applied in two thin coats just thick enough to make a smooth wall and not over ⅛ in. total thickness. Any plaster finish may be used over the bonding plaster. The finished surface should not be decorated for a year in order to allow time for any moisture in concrete to work out.

Mixing—Add nothing but water and hoe plaster into the water, allowing to soak for 10 to 20 minutes, then mix thoroughly to a smooth creamy consistency.

Application—Apply in 2 coats—First coat shall be scratched on as thin as possible, scratched and allowed to dry. Apply second coat just thick enough to level up inequalities, with total thickness of both coats, ⅛ in. minimum, ⅜ in. maximum. Scratch the surface of bond plaster thoroughly to provide mechanical key for finish.

Covering Capacity

Approximately from 90 to 120 sq. yards per ton, depending on roughness of concrete and thickness applied.

Wood Fibered Plaster Bag

Bonding Plaster Bag

Gold Bond GYPSUM PLASTERS

FINISHING PLASTERS . . Gauging, Prepared Trowel and Sand Float finishes . . . . Moulding Plaster.

NATIONAL GYPSUM COMPANY guarantees any Gold Bond Gypsum Plaster product to have about double the strength requirements and to exceed by a wide margin the purity required for any special plaster product in the A.S.T.M. specifications and also every other detail of these specifications. This also applies to Federal specifications.

GOLD BOND GYPSUM GAUGING PLASTER

For Gauging Gold Bond Lime Putty Finish

Gauging plaster is a specially selected, ground, calcined gypsum used with lime putty plasters to quicken the set of the lime putty and prevent checking of lime finish. Is uniformly ground to a fineness to insure easy mixing and working qualities. Also known as Plaster of Paris. Supplied in following types:

Quick Set or Slow Set

Gold Bond Super White (White). Gold Bond Sapphire (Grey).

Directions for Mixing

Use as directed under Gold Bond Finishing Lime, Page 34.

Covering Capacity

Under normal conditions one ton of Gauging Plaster to two tons of hydrated lime by weight will cover approximately 1600 square yards.

GOLD BOND PREPARED GYPSUM TROWEL AND SAND FLOAT FINISHES

For White or Sand Float Gypsum Finishes Over Gypsum Base Coats

These prepared gypsum plasters are for use as finish over gypsum base coats in place of lime putty finish. They make a perfect bond with the gypsum plaster base coats. They have exceptionally easy working and spreading qualities, set quickly and walls may be decorated in any manner as soon as they become dry. There is no danger of lime burns in decorations.

Sand Float Finishes are made with clean sharp silica sand.

Mixing and Application

Mixing—Hoe plaster into water (adding 2 parts of plaster to 1 part of water by volume) and allow to soak for 10 minutes. Mix thoroughly to produce a smooth creamy consistency and add water until very thin.

Trowel Finish—Base coat must be absolutely dry before finish is applied. If suction is too great sprinkle base with water. Apply in three coats, the first coat very thin, well scratched into the surface. Allow to draw for a few minutes, then lay on second coat and level off. Apply third coat very thin, filling in all imperfections and allow to draw for a few minutes. Then trowel to smooth finish, applying water sparingly with brush and complete troweling before plaster sets.

Sand Float Finish—Gypsum base coat must be hard and about half dry before finish is applied. Trowel on and finish with a float to true and even surface, using water sparingly from a damp brush and complete before finish sets.

(Not available in all areas at present time.)

GOLD BOND GYPSUM MOULDING PLASTER

Gold Bond Moulding Plaster (Plaster of Paris) is made for use in ornamental plaster work. It is made from selected gypsum rock of greatest purity and whiteness and undergoes special preparations for the purposes for which it is used. The purity of the gypsum deposits of the company allows the production of moulding plaster of the very finest quality. It makes an especially smooth working plaster of uniform set. It is ground finer than other gypsum plasters and permits a finer surface and greater freedom from pin holes.

On account of its hardness and great strength after setting it is used for plaster moulds and ornamental work of all kinds. The plaster sets with little heat resulting in low expansion and contraction, especially desirable when used in moulds. The low temperature does not affect glue or gelatine moulds. It is used for running mouldings, cornices and ornamental use of a similar type as it can be worked so smoothly and produces a perfect, smooth surface.

Mixing Directions

Mix with water only and bring to proper consistency for use.

Gold Bond

BEST BROS. KEENE'S CEMENT

The finest and whitest gypsum products made. For wall finishes where extra durability is needed.

BEST BROS.' Keene's Cement is the whitest finish plaster obtainable and produces a wall with extreme durability. Because of its density it excels for wainscots in kitchens and baths and for the finish coat in auditoriums, public buildings and wherever walls will be subjected to unusually hard wear or abuse. For running moulds and ornamental plastering effects, BEST BROS.' Keene's Cement is the "old standby" of plasterers because of its unmatched high quality and uniformity. Two products as follows:

Best Bros.' Keene's "Regular"—Standard grade for ordinary plastering. Good color and fairly coarse grind; mixes readily with lime putty; tensile strength of over 600 lbs. per sq. in. in 7 days; an initial set of 2 hours and a final set of 4 hours.

Best Bros.' Keene's "Fast Finish"—A smooth finish coat, and made to set up more quickly than "Regular" grade when mixed with lime putty. Designed to overcome the long interval of time previously necessary between application and final troweling of a Keene's Cement finish. Ground the same as "Regular" grade; has a job set of 2 hours; tensile strength over 500 lbs. per sq. in.

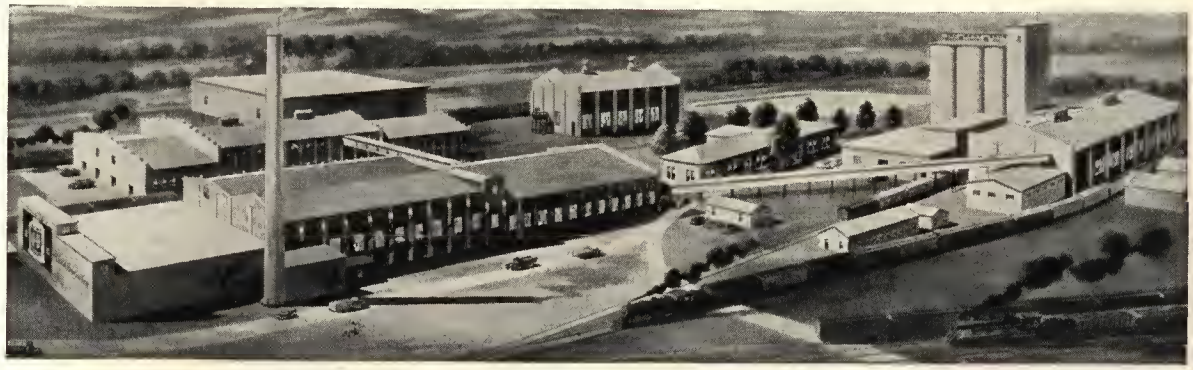
(Not available in all areas at present time.)

Calcined at High Temperature

In making BEST BROS.' Keene's Cement the rock is calcined at a temperature many hundreds of degrees higher than that used in making standard hardwall gypsum plaster. Calcination at this higher temperature drives out the last 5% of the water of crystallization and leaves a stable material which has no affinity for atmospheric moisture. Breaking down and remixing BEST BROS.' Keene's Cement does not interfere with the set since a catalytic agent has been added to act as a nucleus for the process of crystallization.

Department of Commerce, Washington, D. C., Best Bros.' Keene's Cement used for 3¾ miles of corridors in this building because of its greater durability.

Hospital rooms must be able to "take it." Best Bros.' Keene's Cement is invariably the choice of architects and contractors.



Medicine Lodge, Kansas . . . The mammoth plant of Best Bros., oldest and largest manufacturer of Keene's Cement in the country. Operated as a division of National Gypsum Company.

Gold Bond FINISH LIME

The perfect white coat for gypsum plaster. Made from selected quality Ohio Dolomitic Limestone.

Finest Dolomite Deposits

The very finest known dolomite limestone deposit in the world is in the northwestern Ohio fields, a few miles south of Toledo. Most of the finish lime for the entire United States comes from producers located here, within a radius of about five miles.

Gold Bond Finish Lime is produced in National Gypsum Company's Luckey, Ohio plant in this area and in purity it ranks with the finest produced in this top quality field.

Dolomite Limestone Quality

Chemically pure dolomite limestone contains 45.5% magnesium carbonate and 54.5% calcium carbonate. A.S.T.M. specifications require a 95% minimum oxides of the two combined. The Gold Bond deposits average between 98% and 99%, containing 55.56% calcium carbonate and 43.41% magnesium carbonate. It is the magnesium carbonate which, when properly burned, produces the plasticity and easy slip or working qualities of a building lime. It is due to this quality of plasticity that dolomite lime is so favored by the trade. Lime of high calcium content is not so easily worked as Ohio dolomite lime.

Machine Controlled Burning

Of vital importance in the production of good finish lime is the proper burning of the magnesium carbonate. As calcium carbonate and magnesium carbonate require widely different temperatures to convert them into oxides by burning, it requires very precise regulation of heat. National Gypsum Company has patented and installed apparatus which controls the burning automatically so that overburning is practically impossible. Overburned lime is tough and hard working, has no "slip" and will not hold its water against the suction of the wall.

Scientifically Controlled Hydration

The process of hydration is absolutely and automatically controlled by special equipment. A definite percentage of water, added to the lime as it comes from the kiln, combines with the calcium and magnesium oxides to form hydrates. This produces the Gold Bond Standard Finish Lime (called Type N).

E-Z Soak Finish Lime

Gold Bond E-Z Soak Finish Lime (called Type S) is produced by hydrating the burned lime in an autoclave under steam pressure. By this method the lime is 92% hydrated so that, when desired, it may be used immediately after mixing with water and screening. May also be soaked overnight before use. Standard Finish Lime must be soaked overnight before it can be used.

Mixing Gold Bond Finish Lime—Put 6 gallons of water into the box for each 50 lb. sack of lime to be soaked. Sprinkle or screen the lime into the water evenly. Cover and let stand overnight. E-Z Soak Lime may be soaked overnight as above, or it may be mixed and used immediately. In application, mix 3 parts lime putty and 1 part Gold Bond Gypsum Gauging Plaster by volume.

Coverage—Under average conditions, the proportions specified should cover about 500 to 700 sq. yds. per ton of lime.

Standard Finish Lime — E-Z Soak Finish Lime

GOLD BOND MASON'S LIME

High plasticity, easy working lime for use with lime cement and sand, lime and sand mortars and for increasing the workability and watertightness of Portland cement concrete.

Increases the plasticity, adhesive properties and sand-carrying capacity of mortars and the strength and watertightness of the finished structures.

Commonly used in the following proportions:

Lime Mortar—2 parts lime, not more than 1 part Portland cement, not more than 6 parts sand.

Cement-Lime Mortars—(General) 2 parts lime, 1 part Portland cement, not more than 9 parts sand.

Cement-Lime Mortars—(Below Grade) 1 part lime, 1 part Portland cement, not more than 6 parts sand.

Lime in Concrete—Usually 1 part lime to 9 parts Portland cement. (Plus aggregates).

Gold Bond Mason's Lime

Gold Bond

MASTER SPECIFICATIONS

INTERIOR LATHING AND PLASTERING . . Application of plaster bases, mixing and applying plaster coats.

GENERAL NOTES

It is intended that the following specifications will cover practically all conditions which are usually met with in ordinary construction. Only the paragraphs applying to the particular type of job should be selected and used by the architect. Special lathing bases are not included and if these are used the method of application and use of plaster should follow the recommendations of the manufacturer.

Consulting Service on Lathing and Plastering

The National Gypsum Company has over two hundred representatives located throughout its territory who will be glad to consult with architects and lathing and plastering contractors on any lathing or plastering problems which may arise. This is in addition to the technical laboratory and research department located at the Clarence Center, N. Y., plant, which may be called upon at any time for technical information.

New and Old Work

The following specifications are written only for new work. For alteration work the clauses will have to be altered to cover such work especially in regard to where old and new work join.

SECTION 1 — LATHING AND PLASTERING SPECIFICATIONS

Note: (a) Acoustical Plaster—See "Sound Control Products" for specifications on Gold Bond Maconstic Plaster.
(b) If trade practice requires separate specifications for lathing and for plastering, the specification should be written accordingly.

1. General Conditions

The General Conditions of the Contract of the American Institute of Architects (current edition) shall form a part of this specification. (If the A.I.A. Standard Form is not used then refer to the one used.)

2. Scope

2–1. This contractor shall furnish all materials, labor, scaffolding and staging which will be required to satisfactorily complete the lathing and plastering work to be executed as hereinafter described or indicated on the contract drawings or schedules.

3. Extent of Work—Furring, Lathing and Plastering

3–1. All Metal Furred or Suspended Ceilings

Note: Wood-furred or wood-hung ceilings should be specified under carpentry.

3–2. All metal wall furring and miscellaneous metal furring

3–3. All metal stud partitions

3–4. All lathing

3–5. All interior plastering including Keene's Cement as follows:

Note: Here describe exceptions and amplifications in regard to lathing and plastering or refer to schedule of finishes and drawings.

a. Note where plaster is to be omitted.
b. Note where one or two coat plaster is required.
c. Note where white finish is omitted.
d. Note ceiling or beams, cornices, etc., to be furred (Type furring)
e. Note walls to be furred (Type furring)
f. Note if lath or base and scratch coats back of tile work, marble or slate are to be included or omitted from this contract.

4. Relations with Other Trades

4–1. Temporary Enclosures—Temporary cloth enclosures over all window and other exterior openings throughout the portions of the building to be plastered shall be provided during application and drying of plaster.

4–2. Temporary Heat, Light and Water—Shall be supplied by others.

Note: Plastering Contractor or General Contractor may be required to supply salamanders, fuel, heat and maintenance without fire hazard before heating plant is installed, depending on contract agreements. After heating system is installed heat may be supplied by heating system through the General Contractor or Owner.

4–3. Grounds and Furring—All necessary wood grounds for furring and lathing shall be installed by others.

4–4. Inspection of Grounds and Plastering Bases—All grounds and plastering bases shall be inspected by this contractor from time to time and before commencing his work and he shall report to the Architect and General Contractor any defects in such work which may in his opinion affect satisfactory finish, accuracy and stability of the work under his contract.

4–5. Failure to report such defects requiring correction or replacement before commencing his work shall be construed as acceptance of such work by this Contractor and he shall not be relieved of responsibility and obligation under his guaranty.

5. Protection of Work and Building

5–1. All finished work, such as woodwork and glass, shall be adequately protected by Contractor from damage and plaster droppings and he shall make good such damage at his own expense and without cost to the owner.

5–2. Furnish, install and maintain waterproof protection at source of water, under all mixing boxes and gauging barrels.

5–3. Any spill or drip of any kind shall be taken up at once and any sand, sawdust or protection for floor if removed shall be replaced with new material.

5–4. This Contractor shall be responsible for all damage occasioned by the mixing, handling and storing of mortar and materials or through his failure to provide necessary protection.

6. Patching

6–1. All plaster work which is damaged by this Contractor shall be made good by him at his own expense.

6–2. Plastering Contractor shall do all normal patching and trowelling up following installation of plumbing, wiring, etc., by other trades. Excessive damage by other trades shall be repaired by the plastering contractor and paid for by the contractor who caused the damage.

6–3. This Contractor shall cut out, when required, any defect in his work and replaster and leave in perfect condition.

7. Preparation of Surfaces

7–1. This Contractor shall clean the surface to which or against which plaster is to be applied, removing all mortar droppings, etc., as may be necessary, to allow plaster to adhere to same.

7–2. Concrete surfaces and combination tile and concrete surfaces which are too smooth to receive plaster shall be sufficiently roughened by hacking to secure adequate bond. Note: (Hacking will be done by others.) Concrete forms should be made of rough boards and be free from oil.

7–3. Efflorescence shall be removed with a wire brush and washed with muriatic acid and water, one (1) to five (5) solution. Remove acid by thorough washing with clean water.

7–4. Wood Lath shall be wetted down as specified under Wood Lath, Sec. 5, Par. 1-1-2.

7–5. Gypsum lath and fibre insulating lath shall not be wetted down at any time.

7–6. Where necessary for suction, wet brick, concrete and clay tile surfaces before plastering.

8. Wood Grounds

All wood grounds shall be provided and installed by the Carpenter and shall be of such thickness and so set to provide for ½ in. thick plaster over all types of laths and gypsum tile and ⅝ in. thick plaster over all brick, clay tile and other masonry.

Wood Lath	¾ in. grounds
Gypsum Lath ⅜ in. thick	⅞ in. grounds
Insulation Lath ½ in. thick	⅞ in. grounds
Metal Lath—Expanded, Sheet and Wire	1 in. grounds
Gypsum Tile	¾ in. grounds
Brick and Clay Tile, Cinder Block	½ in. grounds
	⅝ in. grounds

Note: Thickness of grounds includes thickness of lath.

9. Sample Finishes

Where special textured finishes are required, this Contractor before proceeding with the work shall prepare and erect, where directed by the Architect, sample panel of each finish required. These samples shall be made to the satisfaction of the Architect. After approval by the Architect, the finished work shall equal the samples in all respects.

10. Workmanship

All work shall be executed by skilled workmen in such a manner as to fulfill the requirements of the drawings and specifications.

11. Cleaning

11–1. After completion of his work, this Contractor shall remove from the building all scaffolding and tools of every sort used by him, taking care not to damage work of the other trades.

11–2. All plaster rubbish, plaster droppings, etc., shall be removed by this Contractor and the building left broom clean.

11–3. This Contractor shall remove all plaster from glass and other finish and leave in first class condition.

12. Guarantee

12–1. This Contractor shall furnish a written guarantee as a part of this contract, warranting all work and materials under this contract against defects for a period of (one year) (specifying time) from the completion and acceptance of the work as shown by date of final payment and he binds himself to repair and replace any defect which may develop within that period, without additional payment beyond the amount of the contract, when ordered to do so by the Owner or the Architect.

12–2. (This shall also include the cost of repairs or replacement of any material, decoration or other finish damaged by the defects.)

SECTION 2 — FURRING AND SUSPENDED CEILINGS

(Specifications for Gold Bond "Clip-on" Systems—Suspended Ceilings and 2-In. Solid Partitions and Hollow Wall Partitions are given in detail in separate books sent gratis upon request)

1. Wood Furring and Suspended Ceilings

Note: Wood furring for suspended ceilings which are to be plastered should be included under Carpentry.

2. Masonry Furring

Masonry furring such as hollow blocks of tile, etc., should be included under Masonry.

3. Materials

3–1. Metal Furring—Shall be Gold Bond Cold Rolled Channels. (See page 8)

3–2. Metal Partition Studs—Shall be Gold Bond Cold Rolled Channels of sizes specified.

4. Metal Furred and Suspended Ceilings

4–1. Location—Ceilings shall be furred or suspended with metal furring where so indicated on plans or on schedules. When the Furring members are *attached* directly to the structural members it shall be considered as a furred ceiling. When the furring members are *suspended* below the structural members of the building it shall be considered as a suspended ceiling.

4–2. Hangers—Hangers shall be placed to support runner channels at spans and spacings shown in Table 4-A. Minimum sizes for hangers shall be as follows:
⅜ in. Mild Steel Rod or No. 8 ga. Galvannealed Wire for

ceiling areas up to 16 sq. ft. and 1 in. x 3/16 in. Flats for ceiling areas up to 25 sq. ft.

The upper ends of hangers of wire, rods or flats shall be of sufficient length to wrap around beams or purlins or to provide a suitable anchorage in concrete or tile. Where the center to center spacing of steel beams or purlins does not exceed the prescribed maximum spans in the table (4-A) of runner channel spans and spacings, the hangers may be attached directly to the beams or purlins. When ceilings are hung from terra cotta floors, hangers may be installed at tile joints during erection. If hangers are installed after tile is in place, holes shall be bored clear through the tile and the hangers secured on the upper side by steel rods or toggle bolts.

Wire or rod hangers shall be saddle tied or wrapped around the runners in a manner that will develop the full strength of the hangers. The lower end of flat steel hangers shall be bolted to the runner channels with bolts not less than 3/8 in. in diameter.

4–3. Runner Channels—Shall be placed on centers not exceeding the maximum spacings prescribed in the following table and shall be supported by hangers so placed that spans will not exceed those prescribed in the following table. Runner channels shall be placed to conform with the contour of the finished ceiling.

Table 4A—Runner Channel C. to C. Spans and Spacings

SIZE OF RUNNER	MAXIMUM SPAN (hanger to hanger)	MAXIMUM SPACING (runner to runner)	FURRING CHANNEL (minimum size)
1½" Cold Rolled Channel	4' 0"	4' 0"	¾" C.R.
1½" (.85 lb.) Hot Rolled Channel	4' 0"	4' 0"	¾" C.R.
2" Hot Rolled Channels	5' 0"	*5' 0"	1" H.R.
1½" x 1½" x 3/16" Angles	5' 0"	*5' 0"	1" H.R.

*Note that 1 in. hot rolled furring channels are required when the spacing between runners exceeds 4 ft.
Other hot or cold rolled shapes of equivalent strength may be substituted for the above.

4–4. Furring Channels—Furring Channels shall be not less than ¾ in. cold rolled channels with a minimum weight of 300 lbs. per 1000 lineal feet for spans up to 4 ft., and not less than 1 in. hot rolled channels for spans up to 5 ft. They shall be erected at right angles to the runner channels and secured at each crossing with not less than two strands of No. 16 ga. galvanized annealed wire or with attachments of equivalent strength and holding power. Furring channels for various types and weights of metal lath shall be placed on centers not exceeding the spacings prescribed in the following table.

Table 4B—Furring Channel Spacing (C. to C.) for various types of lath

TYPE OF LATH	WEIGHT (lbs. per sq. yd.)	MAXIMUM SPACING		
		Ceilings	Walls	Solid Partitions
Flat Expanded Metal Lath	2.5	....	12"	16"
Flat Expanded Metal Lath	3.4	13½"	16"	16"
1/8" Flat Rib Exp'd Metal Lath	2.75	12"	16"	16"
1/8" Flat Rib Exp'd Metal Lath	3.4	19"	19"	24"
3/8" Rib Expanded Metal Lath	3.4	32"	32"	....
3/8" Rib Expanded Metal Lath	4.0	32"	32"	....

4–5. Metal Lath—Minimum weight shall be governed by spacing of furring members as specified in Table 4-B, above. Lath shall be applied with the long dimension across the furring channels and shall be secured every 6 in. along each channel with No. 18 gauge galvanized annealed wire. End laps of at least 1 in. shall be made over furring channels. Sides of Flat Expanded Metal Lath shall be lapped not less than 1 in. Sides of Ribbed Lath shall be lapped by nesting the outer ribs. Side laps between channel shall be wire-tied at intervals of not more than 9 inches.

Where ceilings, cornices or other features formed with metal lath, finish against masonry walls, partitions or arch soffits, the lath shall extend onto the masonry surface at least 6 inches. In the case of 3/8 in. Ribbed Lath the corner shall be made with 3 in. Cornerite.

4–6. Brackets for cornices, etc., shall be formed of 1" x 1/8" band iron or cold rolled channels spaced same as for runner channels and shall be securely fastened to masonry or other structure supports. They shall be cross-furred and lathed same as other ceiling areas.

5. Metal Stud Partitions

5–1. Solid Partitions

(a) Metal studs for solid partitions shall be not less than ¾ in. cold or hot rolled channels weighing not less than 300 lbs. per thousand lineal feet, and spacing of studs shall conform with weight of lath as in Table 4-B, above.

(b) Studs shall be secured in position by inserting ends into holes drilled into masonry floors and ceilings or by inserting the ceiling ends into Gold Bond "Z" Runners or Prong Runners and the floor ends into channel type floor runners or other stud shoes. (See Page 11) These attachments shall be secured to masonry with concrete stub nails or other devices of adequate holding power.

Where solid partitions are erected between wood floors and ceilings the ends of the channels may be bent at right angles and nailed to the wood members. Or, metal floor and ceiling runners may be used.

Where solid partitions are used under metal lath ceilings, the upper ends of the channels shall be inserted into holes punched through the ceiling lath. The vertical channels shall be wired to horizontal alignment channels which shall be removed after the scratch coat on the lath side has set. Angles between metal lathed walls and ceilings shall be reinforced with 3" cornerite or by flat expanded metal lath bent to a right angle.

(c) Splicing of studs shall be made by lapping the channels 8 in. with flanges interlocked and wire-tied.

(d) Erection of metal lath for solid lath and metal stud partitions shall be as specified in Par. 4-5. (Note, however, that the metal lath is applied only on one side of the channel studs. Note also, in Table 4-B, that furring channel spacing for solid partition may be greater because both sides of the lath are plastered.)

(e) Solid Partitions over 6 ft. high shall be temporarily braced horizontally on the channel side at intervals not exceeding 6 ft. vertically. Such bracing shall not be removed until the scratch coat on the lath side has set.

(f) Studs adjacent to openings shall be doubled and securely anchored to the frames or bucks. Heads of all openings shall be securely braced.

5–2. Hollow Metal Lath Partitions—Shall consist of a double row of framework as for solid partitions (5-1), each row to be plastered on the outer or lath side, only. Spacing between rows shall be as shown on plans or as required to accommodate soil pipes, ventilation ducts and other features. For maximum reduction of noise transmission there shall be no ties or other connections between opposite sides of hollow wall partitions.

6. Metal Wall Furring

6–1. Where furring is indicated on plans or in schedules for walls, beams, girders or other vertical surfaces, it shall consist of ¾ inch vertical channels spaced as indicated for "walls" in Table 4-B. Wall furring channels shall extend from floor to ceiling arch, shall be firmly secured top and bottom and shall project a proper distance from the wall to permit ties to be made. Intermediate horizontal braces shall be provided at intervals not exceeding 6 feet. Flanges of the

horizontal braces shall face the masonry and the channels shall be secured thereto with hook nails or other suitable devices.
Other furring devices and methods of attachment may be used provided they are equal in effect to the above specified construction.

6–2. Pipe and Ducts—Pipe and ducts required to be enclosed shall be furred as specified for wall furring. Where required to support plumbing fixtures, additional horizontal members of 1½ x ⅜ in. flats shall be wired to vertical members at proper heights to support fixtures.

6–3. Pipe Chases—Over 12 in. wide shall be furred in same manner as wall furring with metal lath extending at least 3 in. each side of opening.

6–4. Heads and Jambs—Fur and lath heads and jambs of windows and doors, when specified or indicated to be plastered, in same manner as for wall furring.

6–5. Corner Beads—Corner heads shall be installed on all exterior angles in plastered rooms or spaces to run from floor to ceiling or to spring line of arches where arch beads are used and shall be of type and gauge as specified under materials.

6–6. Metal Grounds—Shall consist of galvanized steel and shall be set true to plane of finished wall surface and shall be securely fastened to the masonry, furring or other support.

6–7. Miscellaneous Furring—(List here other miscellaneous furring required as for stair soffits and any special features requiring metal furring and lathing.)

6–8. No furring shall be placed until all pipes, conduits, etc., have been permanently placed, inspected and approved.

6–9. General—All furring and lathing, for all vertical or horizontal surfaces for walls, cornices, beams, arches, carved work, etc., shall be level, plumb true and rigid and accurately formed so that all surfaces to receive plastering shall be generally three-quarters (¾) of an inch back of finished surface.

SECTION 3 — LATHING AND PLASTERING ACCESSORIES

Materials

1–1. Wood Lath—Shall be No. 1 Grade, or better, free from knots, sap and bark, approximately ⅜ in. thick, 1½ in. wide and either 32 in. or 48 in. long.

1–2. Gypsum Lath—Shall be Gold Bond Gypsum Lath ⅜ in. thick—16x48 in.

1–3. Metal Lath—Shall be Gold Bond Metal Lath (National Gypsum Company). Specify type, finish and weight for spacings on both horizontal and vertical installations.

1–4. Minimum Weight of Metal Lath
(Following recommendations of Metal Lath Manufacturers Association and American Standards Association.)

TYPE OF LATH	WEIGHT OF LATH	WIRED TO METAL			NAILED TO WOOD	
		Solid Partitions	Walls	Ceilings	Walls	Ceilings
Flat Expanded	2.5	16″	12″	....	16″	....
Flat Expanded	3.4	16″	16″	13½″	16″	16″
Flat (⅛″) Rib	2.75	24″	16″	12″	16″	16″
Flat (⅛″) Rib	3.4	24″	19″	19″	19″	19″
⅜″ Rib	3.4	*...	24″	24″	24″	24″
⅜″ Rib	4.0	*...	24″	24″	24″	24″

*The extra stiffness of ⅜″ Rib Lath is not needed on Solid Partitions.

1–5. Cornerite—Shall be Gold Bond Cornerite.

1–6. Corner Beads—Shall be Gold Bond Corner Bead (specify type).

1–7. Base Screed—Shall be Gold Bond Base Screed (specify type).

1–8. Picture Mould—Shall be Gold Bond Metal Picture Mould (specify type).

1–9. Metal Plaster Arches—Shall be Gold Bond Metal Plaster Arches (specify type).

2. Application of Wood Lath

2–1. General—Lath with wood lath all (exterior stud walls) (wood furred walls) (stud partition) (ceiling beams or joists) (stair soffits), etc., which are specified to be plastered.
Note: It is recommended that ceiling over furnace and fuel room be lathed with a double layer of gypsum lath or with metal lath for fire protection for a distance of 5 ft. beyond all sides of the furnace. Also stud walls enclosing furnace room.

2–2. All lath shall be spaced ⅜ in. apart, a space of ¼ in. being left between abutting ends and shall be secured at each bearing with 3d 16 ga. blued lathing nails.

2–3. Lath shall be applied at right angles to the supports and joints shall be broken at not more than every seventh lath. No laths shall be carried from room to room. No lathing shall form long vertical joints or be set vertically to fill out at angles or corners.

2–4. Reinforce all re-entrant angles with Gold Bond expanded metal Cornerite and metal corner beads on all exterior angles. All strips shall extend at least 3 in. on each wall and shall butt at ends and not lap and shall be securely nailed or stapled at edges but not in corners.

2–5. Corner Beads—All external corners, both vertical and horizontal, shall be protected with corner beads, of the types or type specified for their full height or length; same to run from top of base to ceiling, heads or beams or to the spring line of arches.

2–6. Where wood lathing on walls, partitions or ceilings abuts masonry work, strips of painted metal lath, extending at least 3 in. on each side of the intersection shall be fastened along the edges to both wall surfaces. Lath shall weigh not less than 2.5 lbs. per sq. yd.

2–7. Where heat pipes are concealed in walls or partitions, they shall be lathed over with strips of Gold Bond Gypsum Lath or Gold Bond Painted Expanded Metal Lath nailed securely to nearest supports.

2–8. Openings or where studs are spaced over 16 in. wide, as back of medicine cabinets, etc., shall be lathed with expanded metal ribbed lath.
Note: Add here any other special condition requiring metal lath, such as back of tile wainscot, etc.

2–9. Grounds for use with wood lathing shall be ¾ in. thick, including thickness of lath and shall be installed as specified under Carpentry.

3. Application of Gold Bond Gypsum Lath

3–1. Lath with Gold Bond Gypsum Lath all (exterior stud walls) (wood furred walls) (stud partitions) (ceiling beams or joists) (stair soffits), etc., which are specified to be plastered. Studs and joists shall be spaced 16 in. on centers.

3–2. Lath panels shall be applied with long dimension at right angles to framing members, with joints broken in each

course. Joints between walls and ceiling shall be staggered. The panels shall not be butted tightly together nor be more than ¼ in. apart.

3–3. Lath shall be nailed at every support with No. 13 gauge, 1⅛ in., ⅜ in. flat head, blued nails to be driven with the underside flush with the face of the lath. First nail ⅜ in. from top of panel, then spaced approximately 4 in. apart—5 nails to each stud—20 nails to a 16 x 48 in. panel. Nails along edges to be ⅜ inch in from edge of panels.

3–4. Fit lath tight together at all re-entrant angles and corners. Fit lath accurately around all electric boxes and similar openings. Cutting shall be done with sharp hatchet or knife and then breaking over a straight edge.

3–5. Where any gypsum lath wall, partition or ceiling abuts masonry, strips of Gold Bond Expanded Metal Lath weighing 2.5 lbs. shall extend at least 6 in. on masonry and 6 in. on gypsum lath, fastening edges to masonry and to gypsum lath.

3–6. All re-entrant angles shall be reinforced over the gypsum lath with Gold Bond Cornerite extending 3 in. each side. Ends shall abut and not overlap.

3–7. All grounds for gypsum lath shall be ⅞ in. thick (including thickness of lath furnished, installed and specified under Carpentry).

4. Application of Gold Bond Perforated Gypsum Lath

Same Specifications as for standard Gold Bond Gypsum Lath. For ceilings of Perforated Gypsum Lath with one hour fire rating, see instructions on page 3.

5. Application of Fibre Insulation Lath

Follow manufacturer's instructions.

6. Application of Gold Bond Metal Lath

6–1. **General**—Lath with expanded metal lath all studs and beams for (interior stud walls) (wood furred walls) (stud partitions) (ceiling beams) (furred or suspended ceilings) (stair soffits).

6–2. **Application to Wood Supports**—Metal lath shall be nailed every six (6) in. along each support, and side laps shall be wired at intervals of not more than nine (9) in. between supports. Nailing to vertical supports shall be with not smaller than 4d or 6d nails driven to a penetration of not less than ⅞ in. and 1 in. respectively or with No. 14 ga. wire staples driven home. Nailing to horizontal supports shall be with not smaller than 1½ in. No. 11 ga. flat head roofing nails driven home.

6-3. All ⅜" rib lath shall be fastened at all ribs to each support and shall be wired at edges between supports at intervals of not more than 9 in.

6–4. All metal lath shall be fastened to masonry with special hardened steel nails, self-clinching nails or other device best suited to type of construction.

6–5. **Attachments to Metal Supports**—Metal lath shall be wired to metal supports at intervals not exceeding 6 in. with not less than No. 18 gauge galvanized soft annealed wire and shall always be tied where sheets lap at channels and at intervals of not more than 9 inches along edges between channels. Rib Lath shall be attached directly to the under side of open web steel joists with not less than two strands of No. 16 ga. or four strands of No. 18 ga. galvanized annealed wire.

6–6. Metal Lath shall be erected with the long dimension of lath across the supports; ⅜ in. Rib Lath with the ribs against the supports.

6–7. Lath shall be first applied to ceilings and the sheets carried down 6 in. on side walls and partitions. If metal lath is not used on the ceilings, the lath shall start at the top of the wall and be bent and carried 6 in. on to the ceiling joists so that no joints shall occur at intersection of ceiling and walls.

6–8. On walls, Flat or ⅛ in. Rib Lath shall be started one stud away from the corner, bent at the corner and carried onto the abutting wall. ⅜" Rib Lath shall be butted into all joints and strips of Flat Expanded Metal Lath not less than 8 in. wide shall be bent at right angles and fitted into the corner. The outer edge of each 4 in. wing shall be wired to the Rib Lath, but there shall be no ties at the corner.

6–9. Where any wall, partition or ceiling abuts masonry, the metal lath shall extend onto masonry at least 6 in. and be well fastened at edges to joints of the masonry.

6–10. Lath shall be so placed that the lower sheet laps over the upper (not vice versa) and shall be securely attached to supports. Nails, staples or wire ties shall be used to secure the sides of the sheets where they lap at supports.

6–11. Expanded metal shall be lapped at sides not less than ½ in. and at ends not less than 1 in. End laps shall occur only over supports.

6–12. Ribbed lath shall be lapped at sides by nesting outside ribs, and at ends, 1 in.

All grounds for metal lath shall be ¾ in. thick including the lath and will be furnished and installed as specified under Carpentry.

Note: The metal lath specifications have been adapted from those of the Metal Lath Manufacturers Association and the American Standards Association.

Note: No attempt has been made to include specifications for woven wire lath and many other forms of lath. For these, see Manufacturers' Specifications.

7. Metal Arches, Base Screeds, Corner Beads, etc.

7–1. **Metal Plaster Arches**—Gold Bond Metal Plastering Arches of the number and shape as noted hereinafter or on the drawings, shall be securely set in position over the lath in accordance with the details. Corner beads at jambs shall join arch beads accurately without break.

7–2. **Corner Beads**—All external corners, both vertical and horizontal, shall be protected with corner beads, of the types or type specified for their full height or length; same to run from top of base to ceiling, heads or beams or to the spring line of arches.

Note: If beveled, chamfered or rounded corners are desired, make note where these will occur and change paragraph above.

7–3. **Metal Picture Moulds**—Gold Bond Metal Picture Moulds shall be installed in the following locations. (*List here, or in schedule of finishes, or on drawings, spaces to have picture mould.*)
Picture moulds shall be accurately set, true and parallel with ceiling line and substantially secured.

7–4. **Metal Base Screeds or Wainscot Cap**—Gold Bond Base Screed shall be installed in the following locations. (*List here, or in schedule of finishes, or on drawings, spaces to have base screed for base, wainscot cap, etc.*)

Note: Where special items such as metal bases, with or without electric wire ways; chair rails; door and window trim, etc., are desired, they should be included in the proper trade specification according to local jurisdiction.

SECTION 4 — PLASTERING MATERIALS — BASE AND FINISH COATS

1. Materials and Mixing

1-1. General—All materials used in plastering shall he stored in a dry place ahove the ground and shall he handled in such a way as to prevent deterioration or intrusion of foreign matter into the plaster.

1-2. Lime, Gypsum and Cement shall be delivered and stored in original packages of the manufacturer. Any materials in containers showing water marks or which have been damaged or materials that have deteriorated shall be immediately removed from the premises.

1-3. Mixing Boxes for base coats shall he clean and tight and shall be cleaned after each mixing.

1-4. Machine mixing shall he permitted in machines made for this purpose if they are cleaned after mixing and kept free of plaster from previous mixings.

1-5. Tools shall be kept clean and shall not he rinsed in mixing water.

1-6. No more material shall he mixed than can be applied in one (1) hour. Do not mix one batch with another. Plaster shall not be retempered after it has commenced to set.

Note: Clean water and proper mixing following the direction of the Manufacturer are of extreme importance to good work.

1-7. Plaster shall be kept from freezing for 24 hours after application and no finish coat shall be applied to base which is frozen.

1-8. In hot, dry weather, all openings shall be enclosed with muslin screens or windows kept closed to prevent plaster from drying before it has set; after that, windows shall be opened to permit wall to dry quickly.

1-9. All materials for plastering, except sand, shall be as manufactured by National Gypsum Company.

2. Water

Water shall be clean and fit to drink, free from oil, acids, alkali or vegetable matter.

3. Sand

3-1. Sand for base coats shall he sharp, clean and free from saline, alkaline, organic or other impurities. It shall be graded from fine to coarse in conformance with the Standard Specifications for Plastering Sand of the American Society for Testing Materials. Should pass through six-mesh screen.

3-2. Sand for finish coats shall all pass a No. 12 screen and shall be white, hard, sharp grains free from soluble salts or injurious amounts of organic matter. Fine sand having rounded particles uniform in size (commonly called quicksand) shall not he used.

4. Plaster

4-1. Base Coat Plaster—Shall be Gold Bond Gypsum Plasters.

4-2. Finish Plaster—Shall he Gold Bond Hydrated Lime Putty with Gold Bond Gauging Plaster or Gold Bond Gypsum Prepared Plaster (specify which).

4-3. Keene's Cement—Shall be Best Bros. Keene's Cement.

SECTION 5 — BASE COAT PLASTER — (SCRATCH AND BROWN)

1. Gypsum Neat Plaster

1-1. ON WOOD LATH—

1-1-1. Scratch Coat—Shall consist of one (1) part of fibered neat plaster to two (2) parts by weight of dry sand.

1-1-2. Soak lath thoroughly 12 to 24 hours before, and again an hour or two before plastering is started.

1-1-3. Apply in two coats, scratch coat to be applied with sufficient pressure to obtain a good key, filling all spaces between the lath and leaving a light coat over lath. Scratch surface thoroughly to secure bond for brown coat.

1-1-4. Brown Coat—Shall consist of one (1) part plaster (fibered or unfibered; specify which) to not more than three (3) parts by weight of dry sand. Second coat shall be applied as soon as scratch coat is set hard and at least ¾ dry, to a true and even surface. Surface of the second brown coat shall be darbied and broomed to provide bond for finish coat.

1-2. ON GYPSUM LATH—

1-2-1. Scratch Coat—Shall consist of one (1) part fibered or unfibered plaster to not more than two (2) parts by weight of dry sand.

1-2-2. The Gypsum Lath shall not he wetted before applying plaster.

1-2-3. Apply with sufficient pressure to work plaster well into the joints. Scratch surface to provide hond for the brown coat.

1-2-4. Brown Coat—Same as above for Wood Lath.

1-3. ON FIBRE INSULATION LATH—

1-3-1. Fibre Insulation Lath shall not he wetted before applying plaster.

1-3-2. Scratch Coat—Shall consist of one (1) part fibered or unfibered plaster (quick setting plaster is preferable) to not more than two (2) parts by weight of dry sand. Apply with sufficient pressure to work plaster well into the joints. Scratch surface to provide bond for the brown coat and let set overnight. The brown coat shall not be applied until the following day.

1-3-3. Brown Coat—Shall consist of one (1) part neat plaster fibered or unfibered to not more than three (3) parts hy weight of dry sand. Apply to thickness to fill out grounds and broom surface.

Note: It is recommended that the scratch coat be a bit thicker than the brown coat—the thickness of both coats to be full ½ inch—no less. To insure uniform thickness of plaster, screeds shall be used particularly on large areas.

1-4. ON WIRE OR METAL LATH—

1-4-1. Scratch Coat—Shall consist of one (1) part of fibered neat plaster to not more than two (2) parts, by weight, of dry sand.

1-4-2. First coat shall be applied with sufficient pressure to obtain good key, lightly covering lath. Scratch surface to secure bond for brown coat.

1-4-3. Brown Coat—Same as for Wood Lath above.

1-5. ON BRICK, CLAY TILE, CINDER BLOCK OR GYPSUM TILE—

1-5-1. Scratch Coat—Shall consist of one (1) part of fibered (or unfibered) neat plaster to not more than three (3) parts, by weight, of dry sand.

1-5-2. Soak brick, cinder block and clay tile and sprinkle gypsum tile before commencing plastering to reduce suction.

1-5-3. Apply plaster to thickness of grounds (⅝ in.) in two (2) coats. Apply first coat in thin layer to obtain hond and double back immediately with second coat, straighten to true surface with darby and broom surface for finish coat.

2. Gypsum Sanded Plaster

2-1. Gypsum Sanded Plaster shall he applied same as above for Gypsum Neat Plaster without the use of sand but with the addition of water.

2-2. **Special Sanded Plaster**—Shall be used for clay and gypsum tile, cinder block and brick.

3. Gypsum Wood Fiber Plaster

Note: Wood Fibered Plaster is used invariably for one (1) and two (2) coat work, never three (3) coat work.

3-1. ON WOOD LATH—

3-1-1. **Scratch Coat**—(Mixed with water.) Soak lath thoroughly 12 to 24 hours before, and again an hour or two before plastering is started.

3-1-2. Apply with sufficient pressure to obtain a good key, filling all spaces between the lath and leaving a light coat over lath. Scratch surface to secure bond for hrown coat.

3-1-3. **Brown Coat**—(Mix cqual parts of plaster and sand.) Apply to thickness to fill out to grounds and broom surface.

3-2. ON GYPSUM LATH—

3-2-1. **Scratch Coat**—(Mixed with water, no sand.) Gypsum Lath shall not be wetted before applying plaster.

3-2-2. Apply with sufficient pressure to work plaster well into joints. Scratch surface to provide bond for brown coat.

3-2-3. **Brown Coat**—Same as for Wood Lath above.

3-3. ON FIBRE INSULATION LATH—

3-3-1. Fibre Insulation Lath shall not be wetted before applying plaster.

3-3-2. **Scratch Coat**—(Mixed with water, no sand.) Apply with sufficient pressure to work plaster well into the joints. Scratch surface to provide bond for the brown coat and let set overnight. The brown coat shall not be applied until the following day.

3-3-3. **Brown Coat**—(Mix cqual parts of plaster and sand.) Apply to thickness to fill out to grounds and broom surface.

Note: It is recommended that the scratch coat be a bit thicker than the brown coat—the thickness of both coats to be full ½ inch—no less.

3-4. ON WIRE OR METAL LATH—

3-4-1. **Scratch Coat**—(Mixed with water, no sand.) Apply with sufficient pressure to obtain good key, lightly covering lath; scratch surface to secure bond for brown coat.

3-4-2. **Brown Coat**—(Mixed with cqual parts of plaster and sand.) Apply to thickness to fill out grounds and broom surface.

3-5. ON BRICK, CLAY TILE, GYPSUM TILE OR CINDER BLOCK

Note: Do not specify wood fibered plaster for these bases.

4. Concrete Bonding Gypsum Plaster

FOR USE ON CONCRETE SURFACES

(See Preparation of Surfaces, Section 1, Par. 7-2.)

4-1. **Scratch Coat**—(Mixed only with water.) Apply in one (1) or two (2) coats with as great pressure as possible, to thickness of not more than ⅜ in. and score heavily for bond of finish coat which shall be applied as thin as possible.

4-2. **Gold Bond Wood Fibered Gypsum Plaster**—May also be used (unsanded) for concrete surfaces in place of Concrete Bonding Plaster.

SECTION 6 — FINISH COAT PLASTER

1. Smooth White Finish

(Lime Putty and Gauging Plaster.)

1-1. **Hydrated Lime**—Allow to soak twenty-four (24) hours.

1-1-a. **E-Z Soak Lime**—May be allowed to soak twenty-four (24) hours same as standard hydrated lime or it may be mixed and screened for immediate use in same manner and same proportions as the standard hydrated lime.

1-2. **Finish Coat**—Shall consist of three (3) parts of lime putty to one part of dry gauging plaster by volume equivalent to two (2) parts of dry, hydrated lime to one (1) part gauging plaster by weight, and shall be thoroughly and uniformly mixed.

1-3. It shall be applied after the hase coat is hard, set and about dry. Sprinkle surface of base coat with water before applying finish coat when nccessary to kill suction.

Note: Do not apply finish on a base coat containing frost.

1-4. Apply in two (2) coats, first light scratch coat and the second time filling in all imperfections and straighten by means of straight edges.

1-5. Trowel surface to desired finish, kecping wet with brush. Bring same to complete troweling before plaster has set. Surfaces shall be perfectly true and even without scratches, ridges, waves, chips, voids, cracks, etc. All angles must be true, sharp, straight and clean.

2. Prepared Gypsum Finish (Using Gold Bond Trowel Finish Plaster)

2-1. **Finish Coat**—Plaster is ready after thoroughly mixing with water, allowing to soak for ten (10) minutes without hocing. Make mix very thin and creamy.

2-2. Basc coats must be set and hard and about ¾ dry. If too dry, cut suction by sprinkling with clean water.

2-3. Apply finish in three coats; first coat applied as thin as possible to handle and scratch thoroughly into base coat. Let draw for a few minutes, then apply second coat, leveling up. Apply third coat as thin as can be handled, filling in cat faces and imperfections. Let draw and then trowel to smooth surface, applying water sparingly with brush, but not enough to kill face of plaster. Avoid joinings by working top and bottom of wall at same time. Finish coat shall not be less than 1/16 in. or more than ⅛ in. thick.

3. Sand Float Finish (Using Gold Bond Sand Float Finish)

3–1. Using prepared Sand Float Finish—add water only.

3–2. Base coats must be set and hard, about ¾ dry, before applying finish coat.

3–3. Finish shall be applied with trowel, scratch in thin coat, then double back with second coat to bring to even, level surface free from surface marks. Use float (wood shingle) (carpet) (felt) or (cork) to bring to final, even, granular finish. Apply water sparingly with brush, being sure to complete floating before plaster has set. Avoid joinings by working top and bottom of wall at same time. Finish coat shall not be less than 1/16 in. or more than ⅛ in. thick.

4. Keene's Cement Lime Trowel Finish

4–1. Finish Coat—Shall be either Medium Hard or Hard. Medium Hard Finish: 100 lbs. Keene's Cement by weight and 50 lbs. of dry hydrated lime. Hard Finish: 100 lbs. Keene's Cement by weight and 25 lbs. of dry hydrated lime. NOTE: 10 lbs. of fine whitewashed sand may be added per 100 lbs. of Keene's Cement if desired.

4–2. Normal scratch and brown gypsum base coats must be set and hard but not thoroughly dry before applying finish coat. If base coat is dry, spray slightly with water but do not soak.

4–3. Apply thin coat well scratched in, then double back and fill out to even surface. Allow to draw for a few minutes, then trowel and brush to a smooth finish, using as little water as possible while troweling. Thickness shall not be less than 1/16 in. or more than ⅛ in.

4–4. Imitation Tile—Marked off for imitation tile, the thickness shall depend on depth of scoring but in no case should be less than 1/16 in. to bottom of scoring.

4–5. Polished Surface—After cement is dry, polish with a cloth to a high polish.

5. Texture Finish (Gold Bond Color Texture)

5–1. Over Gypsum Base Coats—Where used over two-coat gypsum plaster, walls should be floated before application of Color Texture to increase yardage and to insure more uniform thickness. Dry walls may be sized or dampened to increase yardage and give longer time for texturing.

5–2. Over Lime Finish—It is not good practice to apply Color Texture or any other decorative material over fresh lime putty finish, sooner than four months after application of the lime putty. If, however, it is desirable that the walls be decorated at once, Gold Bond Color Texture may be applied as soon as the lime putty is thoroughly set and dry. **The lime must not be sized.**

5–3. Color Texture may be applied over old lime putty walls with or without sizing. Follow detailed instructions packed in every carton.

SECTION 7 — ORNAMENTAL PLASTER WORK

1. Cornices and Mouldings

1–1. Cornices and Mouldings of size or girth required should be specified, shown on drawings or noted in schedule of finishes.

2. Ornamental or Enriched Work

2–1. Ornamental or enriched work should also be shown on details, character desired described in specifications and noted on schedule of finishes.

3. Models

3–1. All ornamental work shall be executed from models approved by the Architect.

3–2. Models shall be furnished under a cash allowance of ( )which shall be included by this Contractor in his contract. Models shall be executed by a modeler (selected by) (satisfactory to) the Architect, and the work shall be executed under the direction of the Architect. Models shall be delivered by the modeler at his studio, ready packed, to this Contractor who shall pay all charges of transportation.

4. Materials

4–1. Materials shall be Gold Bond Moulding Plaster for run mouldings and ornamental work.

4–1–1. *Mixing*—Add water only to Gold Bond Moulding Plaster.

5. Run Work

5–1. Run Work shall be run full, true and even in accordance with Architect's details. All curved work shall be run true to radius.

5–1–1. *Templates*—Shall be of metal, clean cut and accurate with the Architect's full-size details.

6. Cast Work

6–1. All enriched work and ornamental work which cannot be run in place on the job, shall be of best quality, cast from moulds. All work shall be properly backed, cast solid or hollow, and properly reinforced with wood or iron, and shall be securely stuck and wired in place.

6–1–1. Cast ornamental coffered ceilings shall be cast in sections and reinforced so that sections can be secured to hangers or other support from ceiling slabs, etc.

6–1–2. All cast work shall be set true in surface and alignment and any rough spots shall be finished and sand papered and left perfect, ready for decoration.

SECTION FOUR

Gold Bond
GYPSUM BOARDS

Pages 44-46
GYPSUM WALLBOARDS

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SPECIFICATIONS

Page 47
TAPE JOINT SYSTEM

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GRAIN BOARD

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GYPSUM SHEATHING

Page 52
PAINT PRODUCTS

Gold Bond GYPSUM WALLBOARDS

PLAIN, TILE AND WOOD GRAIN FINISHES . . .

Lightweight, fireproof, take any decoration.

NATIONAL GYPSUM manufactures a full line of fireproof Gypsum Wallboards for quick modernizing, for adding new rooms, for low-cost homes where wallboard is specified. As pictured below, the panels are made in three thicknesses and with various edge treatments—a style for every type of job.

Here is a fireproof wallboard, so sturdy it can be used almost anywhere—even for jobs where ordinary wallboard might not be suitable. The big, strong panels are easily nailed in place building permanent walls and ceilings that take any decoration. If smooth walls (not paneled) are desired, the joints may be completely concealed as explained on page 47.

Gold Bond's Patented Gypsum Core

All Gold Bond Gypsum Wallboards have a solid core of processed gypsum, which imparts great strength to the panels and enables them to withstand hard knocks and abuse. To many people, the mention of a gypsum rock center suggests a board that might be very heavy, brittle and hard to handle.

On the contrary, Gold Bond Gypsum Boards are relatively light in weight because of National Gypsum Company's patented method of processing the gypsum core. In addition the panels are resilient. They can be sawed as easily as lumber and nailed close to the edge without splitting.

Fireproof . . . Won't Warp or Buckle

The core of Gold Bond Gypsum Wallboard is incombustible. Because of its rock-like characteristics, expansion or contraction is negligible and the boards cannot warp or buckle under extreme changes of temperature or humidity. Any form of decoration may be used.

Also Tile and Wood Grain Finishes

In addition to standard Gold Bond Gypsum Wallboard, which comes with ivory-colored surface, the panels are made with tile indentations for wainscots in kitchens and baths and are also supplied in three distinctive wood grain finishes—Dark Walnut, Bleached Walnut and Knotty Pine.

Exceeds Federal and ASTM Specifications

National Gypsum Company guarantees its gypsum wallboard products to exceed the strength requirements of federal specification SS-W-51A and ASTM specifications C-36 for gypsum wallboard, and to meet all other requirements of these specifications.

¼" Square Edge ⅜" Square Edge ½" Recessed Edge ⅜" Beveled Edge

GOLD BOND GYPSUM WALLBOARD

Easy to Apply

Sturdy panels of Gold Bond are nailed directly to the studs and joists, or if modernizing, right over present material. For most jobs, panels of standard 3/8 in. thickness are used or panels 1/2 in. thick. In some cases, 3/8 in. thickness is used for ceiling and 1/2 in. thickness for walls. Over old material, panels 1/4 in. thick are often used for the sake of economy.

The 1/4 in. board should be applied vertically as illustrated above. Standard 3/8 in. or 1/2 in. panels may be applied vertically or horizontally. Use headers (extra 2 x 4's) where necessary to provide a firm backing behind all edges. Complete instructions for applying, nailing, etc., are given under the specifications on page 46.

For Paneled or Smooth Walls

Paneled effects are easy with Gold Bond Gypsum Wallboard, as the carpenter simply nails up the panels and covers the intersections with wood or metal decorative strips. To insure a pleasing, balanced effect, it is always well to plan the design in advance, drawn to scale.

For smooth, seamless walls and ceilings, to be subsequently papered or textured, the panel intersections can be completely concealed with Gold Bond Perforated Tape Joint System, described on page 47. On jobs where this system is to be used, order Recessed Edge Gold Bond as the slight recess is just deep enough to take the perforated tape and cement. Applying the recessed edge panels horizontally (across studs) keeps the number of joints to a minimum.

Decoration

Gold Bond Gypsum Wallboard takes any decoration . . . paint, calcimine, texture or wallpaper. When any type of joint treatment is used over the panel intersections or if the nail heads are "filled," the entire surface should be primed with a good varnish primer before decorating. Never use glue size.

This inexpensive preliminary priming coat equalizes suction throughout; helps to prevent a spotty job and greatly increases paint coverage. A coat of varnish size before wallpapering permits easy removal of paper when redecorating.

Sizes and Thicknesses

THICKNESS	WIDTH	LENGTH
1/4 in. Square Edge	48 in.	6, 7, 8, 9, 10, 12 ft.
3/8 in. Square Edge	48 in.	6, 7, 8, 9, 10, 12 ft.
1/2 in. Square Edge	48 in.	6, 7, 8, 9, 10, 12 ft.
3/8 in. Recessed Edge	48 in.	6, 7, 8, 9, 10, 12 ft.
1/2 in. Recessed Edge	48 in.	6, 7, 8, 9, 10, 12 ft.
*3/8 in. Beveled Edge	48 in.	8, 10 ft.

*Only in Bleached Walnut and Dark Walnut Grain Board.

Because Gold Bond Gypsum Wallboard won't expand or contract, the panels can be butted together and the joints concealed with Perforated Tape System. Provides a smooth, perfect base for wallpaper, paint or texture.

1. Scope of Work

List all walls, ceilings and other surfaces which are to be covered with Gold Bond Gypsum Wallboard.

2. Framing

2-1. Framing of all studs and joists shall not exceed 16 in. on center for 3/8" thick wallboard, and 24 in. on center for 1/2" thick wallboard.

2-2. Nailing members shall be provided in both planes at all interior and exterior angles. Headers shall be provided for support of all fixtures and all cut ends of wallboard falling within the field of the wall or ceiling. No headers are required behind horizontal joints reinforced by means of the Gold Bond Perforated Tape System.

2-3. Nail 1 x 2 in. furring strips over old plaster and/or masonry grounds to provide proper nailing for edges, ends and intermediate support of boards, using nails assuring 1 in. penetration into framing members.

3. Material

3-1. Wallboard—Where wallboard is referred to hereinafter, it shall mean Gold Bond Gypsum Wallboard as manufactured by National Gypsum Company, Buffalo, N. Y., and shall comply with ASTM Standard Specifications for Gypsum Wallboard, Serial Designation C 36, and Federal Specification for Gypsum Wallboard, SS-W-51a.

3-2. Gold Bond Gypsum Wallboard shall be (1/4 in.) (3/8 in.) (1/2 in.) thick with (Square Edge) (Recessed Edge) (Beveled Edge). (See preceding page for sizes, thicknesses and edges.) Recessed Edge Wallboard: Joints shall be finished with Gold Bond Perforated Tape System, and added finish may be applied with (Texas Texture). Square Edge Board: Edges and end joints shall be (filled with Gold Bond Finisher) (covered with batten strips or molding) or (left exposed). The wallboard shall be of such lengths as will result in minimum footage of joints.

3-3. Nails for 1/4 in. and 3/8 in. board shall be 4d, 14 gauge, cement coated, flat head nails, 1 3/8 in. long. For 1/2 in. board, 5d, 13 1/2 gauge, cement coated, flat head nails 1 5/8 in. long. Over old plaster use 6d, 13 gauge cement coated, flat head nails 1 7/8 in. long.

4. Handling and Preparation

4-1. Receiving Material—Wallboard shall be piled flat on floors with reverse side up except first board which shall be turned down. Note: Wallboard shall not be delivered on the job until doors and windows are in place.

4-2. Cutting or Sawing—Gold Bond Gypsum Wallboard shall be cut either by scoring or by sawing. Scoring: the face side paper should be cut with a sharp knife run along the side of a straight edge, followed by snapping the board core at this cut by bending down its end while the wallboard is supported below the cut line by a straight edge such as the edge of a table or saw horse; then cutting the back paper at the crease formed by the core break. Sawing: use a regular hand saw and cut the wallboard with face side up. Ends and all cut edges shall be sand-papered, if necessary, to provide smooth, neat joining.

5. Application

5-1. Inspection—Before applying wallboard see that all edges and ends are perfect and all ends and cut edges are face beveled and that faces of boards are undamaged.

5-2. Wallboard shall be applied with back toward studs and nailed directly to studs and joists. All boards shall be in moderate contact. No board shall be forced into place. The cut edges on all interior and exterior corners shall be hidden by overlapping them with the abutting board. Vertical joints shall be staggered and shall not occur on the same stud on both sides of a partition. Except where reinforced joints are used, avoid vertical and horizontal joints running into corners of framing for windows, doors or other openings.

5-3-1. Nailing—Nails shall be not less than 3/8 in. from edges and ends of panels and shall be spaced 5 to 7 in. apart on ceilings and 6 to 8 in. apart on walls.

5-3-2. Drive nails "home" with the heads in a "dimple" (formed by round-faced hammer) slightly below the surface of the board, without using a nail set and without breaking the paper face. Do not stagger nails on adjoining edges or ends.

5-4. Ceilings—Ceiling panels shall be erected first. Apply panels at right angles to joists. Panels shall be in one piece as far as possible, but if joints are necessary, they should be staggered except when joints are to be covered with panel strips.

5-5. Walls—Wallboard shall be applied as follows:

5-5-1. *Vertically*—Where possible, use full lengths from floor to ceiling. Panels shall be nailed first at edge adjoining panel last applied; next on the first intermediate stud; next on the second intermediate stud, and finally, the far edge and the ends. All vertical joints of the wallboard shall be centered over the framing members. Vertical joints on opposite sides of partitions shall not come opposite each other on same stud.

5-5-2. *Horizontally*—Use full length panels that will keep the number of end joints to a minimum. Where possible, full length panels shall extend above and below openings instead of "piecing." The upper course of the wallboard shall be erected before applying the lower course.

A folder, "How to Apply and Decorate Gypsum Wallboard" will be mailed upon request

Gold Bond

TAPE JOINT SYSTEM

Approved method of concealing wallboard joints to provide a smooth wall ready for decoration.

GOLD BOND PERFORATED TAPE SYSTEM is primarily for use with *Recessed Edge* Gold Bond Gypsum Wallboard but may also be used with square edge board. It comprises the use of a fibre perforated tape in conjunction with a smooth-working cementing plaster.

This system works particularly well with recessed edge board because the recess along the edge provides a perfect channel for the tape and cement. The pictures at the right show the easy steps in applying. If normal care is used, the panel intersections can be completely concealed prior to painting, papering or texturing.

Instructions for Use

Preparing the Cement—A special cement in powder form is supplied with each package of perforated tape. Sift the powder into clean water and mix to a stiff, putty-like consistency. Allow the mixture to stand for about one-half hour before using. If it becomes thinner during use, add more powder.

Application—Fill the hollow or channel with the cement as illustrated in Step No. 1, using a Gold Bond Finishing Knife or any 4-in. putty knife. The cement should extend ½ in. beyond the edge of the channel. Apply the perforated tape immediately, directly over the cement and press it into place with the putty knife. This forces some of the cement through the perforations, as shown in Step No. 2.

In Step No. 3, the cement forced through the perforations should be smoothed over with putty knife and allowed to dry. In Step No. 4, apply another thin coating of cement so that the tape will be completely hidden. Feather out edges as smoothly as possible and let dry thoroughly. Intermediate nail heads should also be carefully filled with cement and brought flush with the surface of the board. Step No. 5, the last operation, is sanding the treated joints and the filled nail heads with coarse and then fine sandpaper.

Inside and outside wall corners and joints between cut ends of boards should be covered with perforated tape cemented into place and finished like regular recessed edge joints. Detailed instructions are supplied with each package.

Decoration—Apply a good varnish size over the cemented joints and preferably over the entire wallboard surface. Then apply paint or paper according to manufacturer's instructions. Varnish size applied before wallpaper permits easy removal of the paper before redecorating.

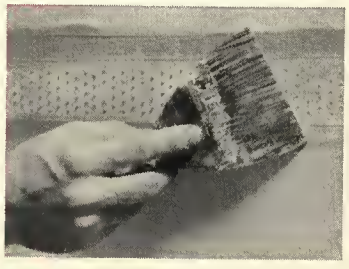
Sizes and Coverage

Regular carton contains one 250-ft. roll of Perforated Tape and cementing plaster—enough for about 550 to 650 sq. ft. of gypsum wallboard.

Small carton contains one 60-ft. roll of Perforated Tape and cementing plaster—enough for about 150 to 200 sq. ft. of gypsum wallboard.

1. Fill each channel with Tape Joint Cement. Apply perforated tape.

2. Press tape into cement with putty knife, forcing cement through perforations.



3. Cement is then smoothed down with a gentle stroke of knife and allowed to dry.

4. Apply another thin coat of cement over the tape and feather out smoothly.

5. After 24 hours, sand smooth and level with surface of the wallboard.

Gold Bond GYPSUM WALLBOARDS

GRAIN BOARD . . The richness of expensive wood paneling at a much lower cost. Three finishes.

GOLD BOND GRAIN BOARD is standard gypsum board with an imitation wood grain surface that defies detection upon casual inspection. Supplied in Dark Walnut, Bleached Walnut and Knotty Pine finishes.

In addition to its rich-looking grain surface, Gold Bond offers these important advantages over real wood: The solid gypsum core is fireproof and unaffected by dampness. Won't expand, contract, warp or peel. Saws like lumber and may be nailed without splitting. Installations made years ago, show not the slightest tendency toward fading.

The low cost of Gold Bond Grain Board plus the fact that no decoration is needed, makes it an economical and beautiful finish for homes, offices, stores, restaurants, etc.

Supplied with Lacquer Finish

Made with a protective lacquer finish which can easily be cleaned with a damp cloth. No further decorative treatment is necessary.

Thicknesses and Sizes

Standard thickness 3/8 in. (Special thicknesses, 1/2 in. and 1/4 in. on special volume orders.) Dark Walnut and Bleached Walnut panels are made with Beveled Edges; Knotty Pine with Square Edges. Panels are 48 in. wide and 8, 9 and 10 ft. long.

Sturdy panels of Gold Bond Grain Board are nailed to the wood framing or right over the old material.

The walls of this "Early American" room are of Gold Bond Bleached Walnut Grain Board.

GOLD BOND GRAIN BOARD

Application Instructions

Plan—If decorative mouldings are to be used over the joints, prepare a paneling design in advance so that studs and headers can be located to provide a firm nailing surface behind the trim.

One of the simplest and most satisfactory ways of paneling a room is the horizontal method used in the Early American room pictured on the opposite page. In this instance a full width panel was lined with the top of the door and window frames. A second panel was cut lengthwise to provide the narrow section above the door and the wainscot section below. The only new trim required was the cove moulding at the ceiling line. Door and window frames, baseboard and cove moulding were bleached and stained to harmonize with the color of the Bleached Walnut board.

Framework—In new frame construction, place studs on 16-in. centers and install extra studs and headers where necessary to provide a firm, even nailing surface behind all panel edges.

Over old walls, apply 1 x 2-in. furring strips to provide a level nailing surface behind all panel edges and at 16-in. intervals across the width of the panels. If the old plaster surface is level, furring strips will not be required; but the location of the studs should be marked on the wall surface for guidance in nailing the panels.

Nailing—Nail along edges and to intermediate studs and joists using 5d cement coated nails with ¼" flat heads. Use 6d nails when applying Grain Board over old plaster walls. Nails colored to match the boards are available, or the nail heads may be spotted with a matching color after the boards are applied. Nails should be driven flush but not set below the surface of the cover paper. (Alternate: Use 5d finished nails driven at 45 degree angle, counter sunk and puttied with spackling putty or plastic wood colored to match finish board. Note: use padded or plastic-headed hammer to drive colored nails.)

On the edges that are to be covered with mouldings, use cement coated flat head nails. Use 5d nails (1⅝ in. long) when nailing directly to the wood framing and 6d nails (1⅞ in. long) when working over old plaster.

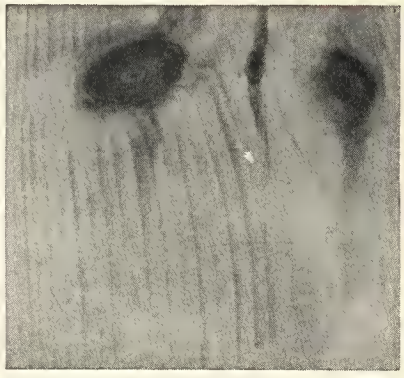
Paneling—Decorative trim may be applied if desired, but it is not necessary. The beveled edges of the Dark Walnut and Bleached Walnut panels form pleasing V-grooves at the joints, while the square edges of the Knotty Pine panels can be butted together to make the seams unnoticeable.

Decoration—As Gold Bond Grain Board comes already lacquered, no further decoration is needed. Like real wood, additional finishing will, of course, improve the richness. Always apply a priming coat of clear white shellac and then a coat of flat varnish. Gold Bond Grain Board may be cleaned by going over it lightly with a damp cloth. It is advisable to install chair rails where table and chairs frequently would otherwise touch a wall finished with wood grained gypsum wallboard.

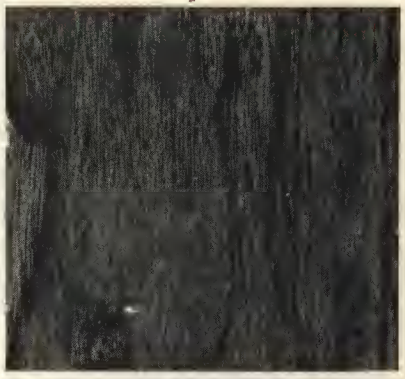
The Gold Bond Knotty Pine Grain Board in this distinctive dining room can scarcely be distinguished from the Knotty Pine millwork and trim.

Gold Bond Grain Boards bring The Beauty of Fine Woods—The Economy of Wallboard—The Fire Safety of Gypsum Rock

Bleached Walnut



Knotty Pine



Dark Walnut

Gold Bond GYPSUM SHEATHING

Big, husky panels full ½″ thick add structural strength . . . . Fireproof . . . . Asphalt-treated core.

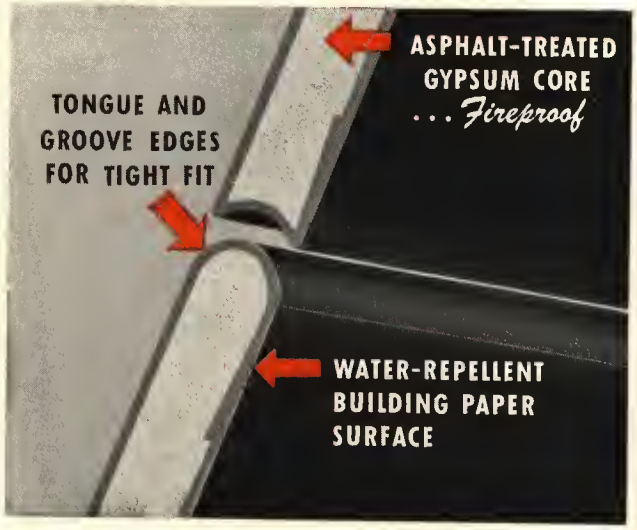
GOLD Bond Gypsum Sheathing is a sturdy, knotless, fireproof and water-repellent sheathing material. It is made in big panels, ½ in. thick, 2 ft. wide and 8 ft. long.

Fireproof — Water-repellent

The core of fireproof, asphalt-treated, processed gypsum rock is protected by a tough, moisture resistant casing. Both surfaces and all edges receive a thorough waterproofing treatment. So effective is the water-repellent finish of Gold Bond Gypsum Sheathing that it has been approved for use without building paper or asphalt felt under all exterior finishes except stucco and brick veneer.

Costs Less — Applies Faster

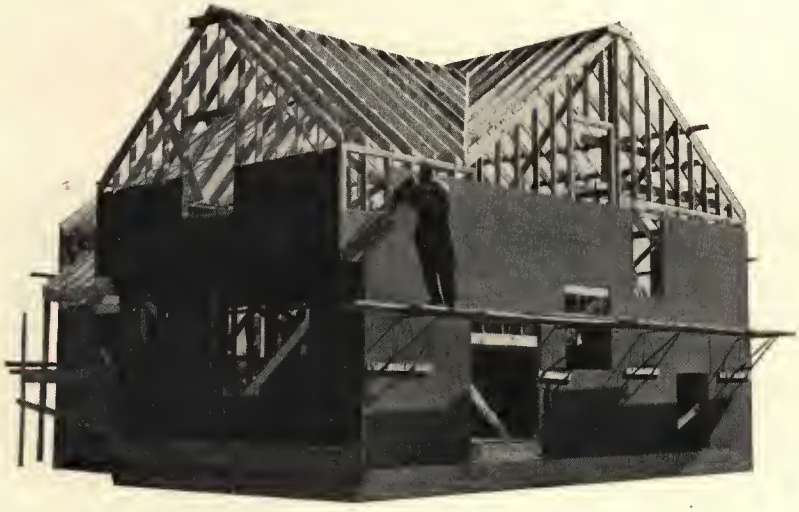
Gold Bond Gypsum Sheathing costs less per square foot than most other sheathing materials. Because the big panels are accurately sized to fit standard stud spacing, there is practically no waste and almost no cutting to fit. This results in a saving of one third or more in the cost of application as compared with that of old-style wood sheathing.



Gold Bond Gypsum Sheathing is water-repellent. Core of processed asphalt-gypsum is fireproof. Tongue and groove edges make wind-tight joints. Big panels add structural strength.

Adds Structural Strength

Tests made by independent testing laboratories show that Gold Bond Gypsum Sheathing, applied as specified, gives any frame building great resistance to racking strains.



Big, easy-to-handle panels of Gold Bond Gypsum Sheathing go up quickly. One man can do an average-size small home in a single day.

Builds Wind-tight Walls

The large size of Gold Bond Gypsum Sheathing panels (2 ft. wide by 8 ft. long) reduces the number of joints to a minimum. Since end joints fall on framing members and long edges are tongued and grooved, the wall is practically proof against wind infiltration.

Size and Thicknesses

Gold Bond Sheathing is made in only one size, 2 ft. wide x 8 ft. long x ½ in. thick.

Short edges are square cut; long edges tongued and grooved.

Both surfaces and all edges are protected by a water-proofing treatment.

GOLD BOND GYPSUM SHEATHING

Specifications

1. **Scope of Work**
   All exterior walls shall be covered with Gold Bond Gypsum Sheathing.

2. **Framing**
   Framing members shall be erected in the manner of approved standard practice and spaced 16 in. on centers.

3. **Materials**
   3-1. Sheathing shall be Water Repellent Gold Bond Gypsum Sheathing as manufactured by National Gypsum Company, ½ in. thick, 2 ft. wide, 8 ft. long.

   3-2. Nails shall be 11 gauge, galvanized flat head roofing nails 1¾ in. long, 7/16" head.

4. **Application**
   4-1. Apply panels horizontally with long edges at right angles to studding and groove edge down. All vertical joints shall be staggered and all end joints shall center over framing members. T and G edges shall be fitted tightly together.

   Nails shall be ⅜ in. in from edges and ends and spaced 4 in. apart, 7 nails to the board on each support back of *shingles, asbestos siding and brick veneer;* and 8 in. apart, 4 nails to the board on each support back of *wood siding and stucco.*

5. **Exterior Finishes**
   Note: Building paper is not required over Gold Bond Gypsum Sheathing but in some sections it must be used to meet F.H.A. regulations.

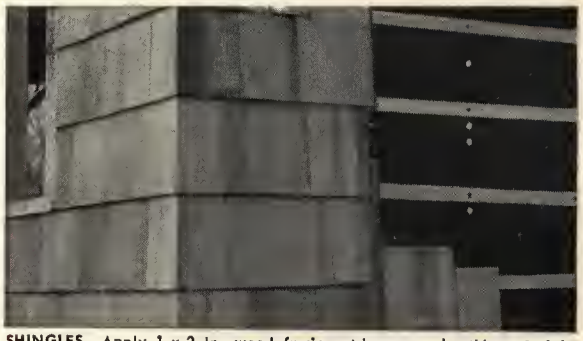
   5-1. Wood Siding—Apply directly over gypsum sheathing; the nails to go through the sheathing and well into the wood framing. All siding joints shall butt over wood framing members.

   5-2. Shingles—Apply 1 x 2 in. wood furring strips over sheathing at right angles to studding, to take shingle weathering specified. Furring strips to be securely nailed through the sheathing to the wood framing.

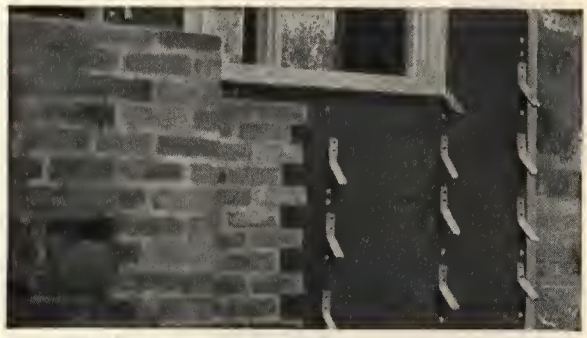
   5-3. Stucco—Apply building paper or asphalt felt over the gypsum sheathing. Use 3.4 Gold Bond Corrugated Diamond Mesh Lath over the sheathing to be securely nailed through the sheathing to the wood framing. Apply stucco according to manufacturer's instructions.

   5-4. Stone or Brick Veneer—Apply building paper or asphalt felt over the gypsum sheathing. Wall ties for masonry veneer shall be nailed securely through the sheathing to the wood framing. Air space of 1 in. shall be left between sheathing and veneer.

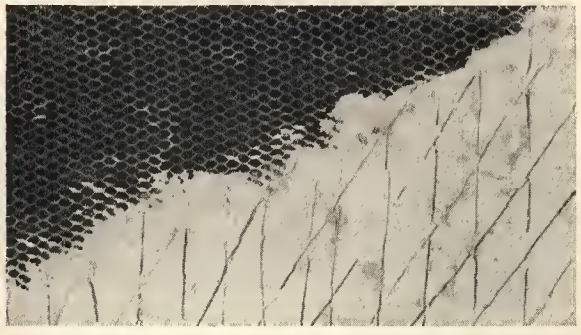
WOOD SIDING—Apply directly over gypsum sheathing; the nails to go through the sheathing and well into the wood framing. All siding joints shall butt over wood framing members.



SHINGLES—Apply 1 x 2 in. wood furring strips over sheathing at right angles to studding, to take shingle weathering specified. Furring strips to be securely nailed through the sheathing to the wood framing.



STONE OR BRICK — Apply building paper or asphalt felt over the gypsum sheathing and install wall ties. Air space of 1 in. shall be left between sheathing and back of veneer.



STUCCO—Apply building paper or asphalt felt over the gypsum sheathing. Use 3.4 Gold Bond Corrugated Diamond Mesh Lath. Nail it securely through furring strips and sheathing to the wood framing. Apply stucco according to manufacturers specifications.

Gold Bond PAINT PRODUCTS

Resin emulsion and casein paints for interiors.

Precolored plastic paint for textured effects.

SUNFLEX DELUXE

Resin-emulsion Paint

Gold Bond Sunflex Deluxe is a new type resin-emulsion paint with washability far exceeding Federal Specification TT-P-88.

Gold Bond Sunflex Deluxe, for interior walls and ceilings comes in the form of a resin emulsion paste which is thinned to painting consistency with half its volume of water. It spreads easily, covering from 400 to 800 square feet per gallon, depending upon the surface. It gives better one-coat coverage over brick, concrete, cinder block, painted wood or metal, or even wallpaper. It should not be applied over whitewash, calcimine or loose paint or paper.

Dries in one hour to a beautiful suede-like finish free of gloss or glare. Washable after two weeks on the wall.

The twelve standard colors of Sunflex Deluxe were selected by leading color stylists. Any special colors can be had by intermixing or by toning with Gold Bond Crafcolors.

Non-Inflammable Non-Toxic

Because they are non-inflammable, Standard Sunflex and Sunflex Deluxe are ideal for decorating walls and ceilings of hotels, apartment and office buildings, and other public structures. Non-toxic, they also may be sprayed without risk.

SUNFLEX

Casein Paste Paint

Gold Bond Sunflex Casein Paint is the original casein paste paint. It ranks highest in light reflection, lowest in cost on the wall.

Sunflex is the original 1-hour wall paint. It brings new beauty to modern interiors at remarkable savings in time and money. Painting with Sunflex is cheaper, usually, than washing soiled walls.

Sunflex Casein Paste Paint thins with water, dries to the same beautiful suede-like finish as Sunflex Deluxe and gives even higher light reflection. It applies fast with brush, spray or roller.

Eleven choice wall colors and white.

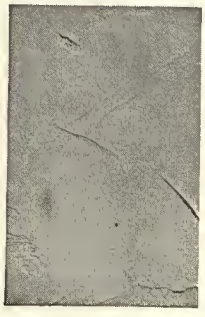
COLOR TEXTURE

Pre-colored Plastic Plaster

Color Texture is a casein-base product with outstanding texturing qualities. The powder is mixed with water, applied in a thin coat and then textured with a stipple brush, sponge, whisk broom or crumpled paper. Complete instructions in each package. It's washable.

Pre-colored in 6 popular wall tints. Needs no decoration but may be glazed with Gold Bond Craftcoat or painted with Sunflex or Sunflex Deluxe.

Highlight Texture



English Trowel Finish

Fine Stipple

SECTION FIVE

Gold Bond INSULATION PRODUCTS

Pages 54-57
ROCK WOOL PRODUCTS

Pages 54-55
HOME INSULATION

Page 56
COMMERCIAL BUILDING INSULATION

Page 57
INDUSTRIAL INSULATION

Page 58
INSULATION BOARD AND TILE

Pages 59-60
INSULATION SHEATHING

Gold Bond INSULATION PRODUCTS

ROCK WOOL BATTS with VAPOR BARRIER . . . .

Cuts winter heating costs . . Permanently fireproof.

THE advantages of home insulation are now so well known that prospective home builders, almost without exception, want it in their homes. Year 'round comfort, smaller heating plant investment, lower operating costs and greater fire protection are just a few of insulation's recognized contributions to better modern living.

An Ideal Home Insulation

Gold Bond Rock Wool is an all-mineral product. That means it is *permanently* fireproof. It contains nothing to attract rodents, termites or other vermin. It is waterproof and will not support fungus or bacteria growth and so will not decay. Its light weight places no strain on structural members and, once installed, it requires no further attention, yet will outlast the building it insulates.

Its insulating efficiency is very high due to its low conductivity factor of only .27 Btu per hr., per sq. ft., per in. thickness, per degree Fahrenheit temperature difference. Above all, it pays a big dividend every year in the form of fuel savings, even where winters are only moderately cold.

A Barrier to Sound, Cold, Heat

Gold Bond Rock Wool is recommended for exterior and party walls, under attic floors (or between roof rafters) and under floors over unheated areas. This forms a blanket of insulation around the house that blocks the passage of sound and heat. Furnace warmth is held inside, making room temperatures more uniform throughout the house and saving up to 40% in fuel.

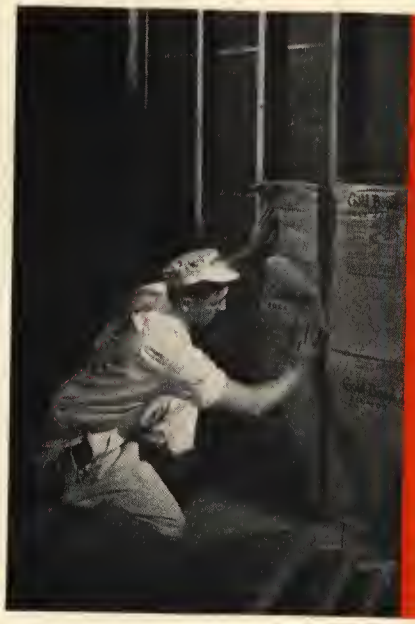
In summer, the same barrier of insulation keeps out the stifling heat of the sun. No stored-up attic heat seeps into living quarters below, to keep rooms unbearably warm and stuffy until long after nightfall. Instead the entire house is 8° to 15° cooler; comfortable bedrooms offer a good night's rest.

A Style For Every Need

There is a form of Gold Bond Rock Wool for every type of application. Illustrations below show Gold Bond Rock Wool Batts with Vapor Barrier, being installed in sidewall and attic. The handling quality and convenient sizes of these Batts make them easier to install. They quickly go into place, saving time and labor cost.

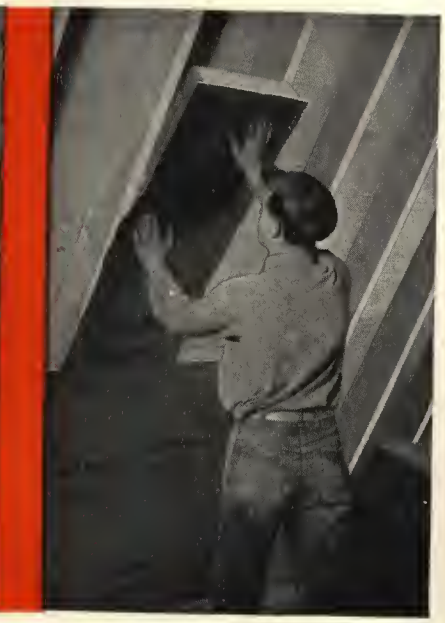
Gold Bond Loose Wool is available for hand-packing around doors and window frames, in corners, etc. It is not recommended for any other application.

Gold Bond Type A Blowing Wool is supplied only for pneumatic application (usually in existing buildings).



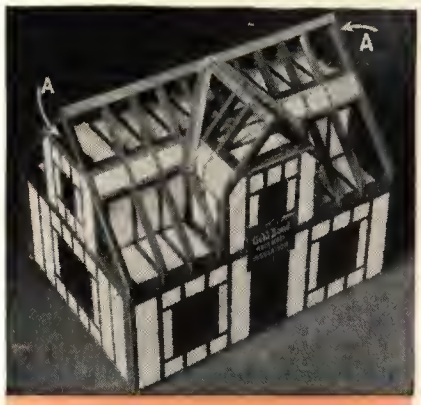
SIDEWALL insulation, because it offers such a large area in which to stop the passage of heat, adds a big share to the enjoyment of the *completely* insulated home.

UNFLOORED-ATTIC insulation is quickly installed between floor joists. Vapor Barrier always faces house interior. Directions are printed on back of each batt.



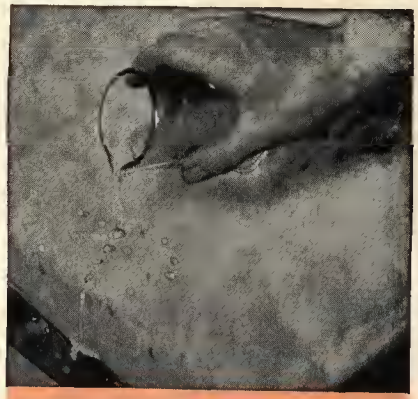
FLOORED ATTIC can be insulated easily by placing Gold Bond Rock Wool Batts between rafters and collar joists. Ventilation should be provided above collar joists.

NATIONAL GYPSUM COMPANY • Buffalo 2, N. Y.



MODEL showing rock wool treatment. Louvers for ventilation should be provided at points "A" in the peaks of the opposite main gables.

FIREPROOF. Even the piercing flame of a blow torch can't harm Gold Bond Rock Wool! Provides an effective fire stop between wall studs.



WATERPROOF. Sheds water effectively because the fibres are waterproofed. Even when saturated, will be as effective as ever upon drying.

Vapor Barrier Protects Against Moisture

Gold Bond Rock Wool Batts are supplied with vapor barrier on one side—a tough, waterproofed membrane that provides protection against passage of moisture through wall and ceiling areas. An overlap along its edges provides a handy nailing surface to speed application and to complete the vapor barrier.

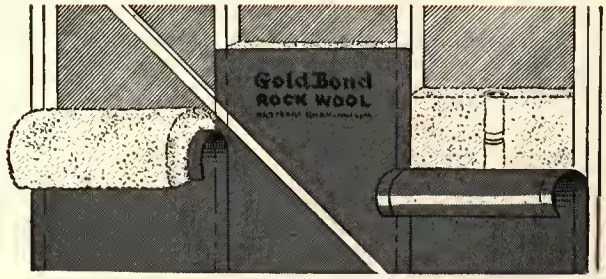
Styles, Sizes and Thicknesses

STANDARD BATTS (With Vapor Barrier)
Full Thick 15 x 24 in. (2½ sq. ft.) and 15 x 48 in. (5 sq. ft.)
Semi-Thick 15 x 24 in. (2½ sq. ft.) and 15 x 48 in. (5 sq. ft.)

POURING WOOL
Pours freely from bag for application between joints of non-standard spacing in unfloored attics. Bulk-shipped in bags.

LOOSE ROCK WOOL
For hand-packing small spaces only. Bulk-shipped in bags.

TYPE "A" BLOWING WOOL
For pneumatic application only. Bulk-shipped in bags.



Correct wall application of rock wool batts. Note that the rock wool is placed on cold side of pipes, leaving only the vapor barrier on the warm (or room) side.

SPECIFICATIONS

1. Scope

1-1. Gold Bond Rock Wool shall be installed between studs of exterior walls, between all attic floor joists, between studs of attic stairwell and in soffit of attic stairs.

If instead of application between attic floor joists, batts are installed between attic collar joists and in rafter slopes from collar joists to eaves, (or in knee walls and floor joists to eaves) batts may be omitted from attic stairway.

1-2. Louvers or similar protected openings shall be provided in attic above highest level of Gold Bond Rock Wool installed, and located as to permit cross ventilation. Their total free vent area of intake and exhaust shall each equal 1 sq. in. per 4 sq. ft. of insulated horizontal attic-area.

2. Materials

2-1. Insulation shall be Gold Bond Rock Wool Insulation (specify type and thickness) manufactured by NATIONAL GYPSUM COMPANY, Buffalo, N. Y. and delivered to job in original containers.

3. Application

3-1. Directions on Vapor Barrier of Batts shall be followed.

3-2. Walls and Pitched Roofs—Gold Bond Rock Wool (specify type and thickness) shall be installed in exterior walls and roof where noted on plans and shaped as necessary to fit snugly all irregular spaces and with vapor barrier facing building interior. Start batts below floor line for fire-stopping and work up, butting batts snugly against each other. In no case shall insulation in attic be installed to peak of pitched roof, but shall be extended across collar joists at least 24" below peak of roof to permit provision of adequate ventilation above insulation as instructed in manufacturer's directions printed on the Vapor Barrier. The Vapor Barrier shall be continuous and shall be cut only when necessary. When cutting, trim wool back from edge to allow overlap of Barrier. Wool shall be placed on cold side of pipes, leaving only Vapor Barrier on warm side (see diagram above.) Overlap of Vapor Barrier shall be nailed or stapled to 2 in. face of studs at not over 6 in. on centers if no covering material is to be added. On rafter slopes and collar joists, Batts shall be covered with supporting gypsum wallboard of (specify type and thickness) or held in place by wire lacing across face of studs or joists.

3-3. Ceilings and Floors—Gold Bond Rock Wool (state type and thickness) shall be applied between joists with Vapor Barrier facing house interior. Where application is over an unheated area, Batts shall be held snugly against subflooring by poultry wire stretched across joist space and tacked to joist sides with wood cleats. Ventilation in such areas shall be provided in a ratio of 1 sq. ft. of free vent area for each 15 lineal feet of wall enclosing the insulated area.

INSULATING EXISTING BUILDINGS. Attic areas can be insulated as illustrated on the opposite page. For maximum fuel savings and year 'round comfort, sidewalls should be insulated as well. This can be done by the blowing method. Your local Gold Bond Applicator's name is in the classified section of your phone book under "Insulation". Call him for an estimate without charge or obligation.

Gold Bond

INSULATION PRODUCTS

Commercial buildings insulated with Gold Bond Rock Wool enjoy much lower operating costs.

TODAY operating costs are all-important in the planning of any commercial or institutional building. That is why Gold Bond Rock Wool insulation offers so much to both the architect and building operator. Actual "before-and-after" experiences amply demonstrate that this modern construction feature substantially reduces heating and redecorating costs.

Desired temperatures are more easily maintained even in severe winter weather. In summer, top floors are much cooler. In apartment buildings, hotels, office buildings and similar rented properties, this increased comfort means satisfied tenants and fewer vacancies. So, in addition to lower operating costs, Gold Bond Rock Wool Insulation offers increased revenue. These advantages, in fact, soon repay in actual dollars and cents the cost of the insulation. And, of course, insulation is essential to the efficient operation of air-conditioning systems.

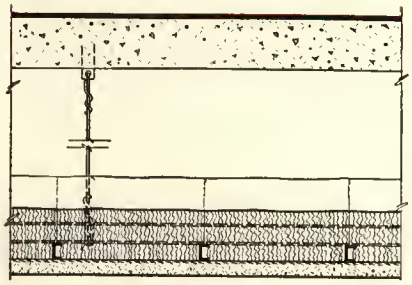
Sidewall Insulation in masonry wall buildings may be installed by placing rock wool batts horizontally behind free-standing or attached furring channels spaced 3 in. from the outer wall The Hollow Wall Partition System (Pages 17 to 24) shows an excellent method of erecting furring channels.

Top Ceiling Application can also be made in batt form, whether the ceiling is of wood, steel, or concrete construction.

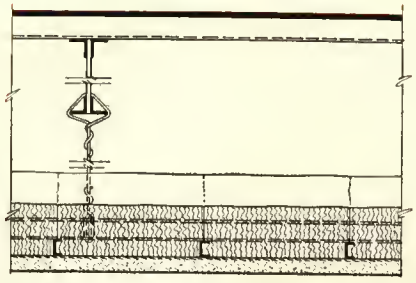
All batts should be placed with vapor barrier facing building interior and each one snugly butted against all adjoining batts.

Adequate ventilation is necessary for condensation control. Two or more vents should be installed above the insulation to provide one square inch each of free intake and exhaust area for every four square feet of insulated flat ceiling. Write us for detailed application specifications.

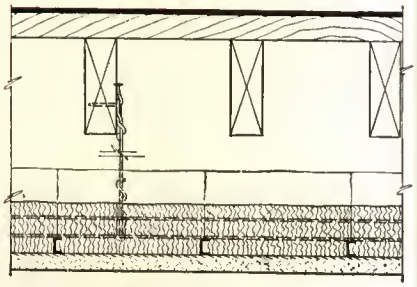
SUSPENDED CEILING APPLICATION under three types of flat roof:



REINFORCED CONCRETE ROOF—U Values: Uninsulated .40; 3″ Gold Bond Rock Wool .0735. Annual Fuel Savings: 4¼ tons coal, or equivalent, per M Sq. Ft. insulated area, in climate equal to that of Milwaukee, Wisc.



STEEL ROOF DECK—U Values: Uninsulated .46; 3″ Gold Bond Rock Wool .075. Annual Fuel Savings: 5¼ tons coal, or equivalent, per M Sq. Ft. insulated area, in climate equal to that of Milwaukee, Wisc.

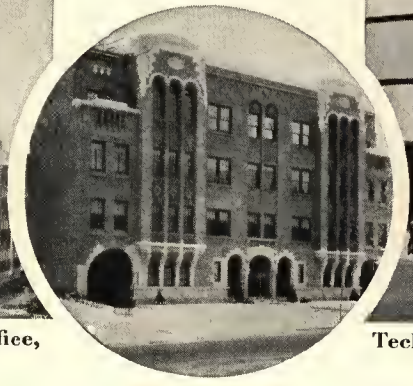


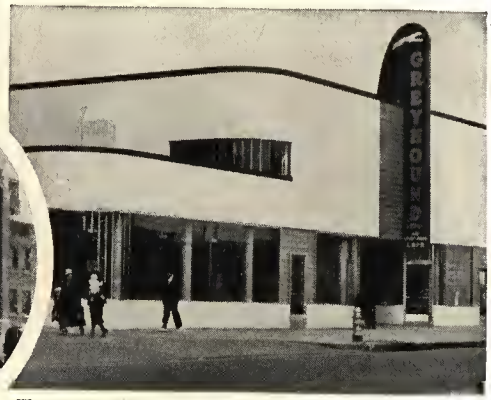
1⅝″ WOOD PLANK ROOF—U Values: Uninsulated .26; 3″ Gold Bond Rock Wool .067. Annual Fuel Savings: 2½ tons coal, or equivalent, per M Sq. Ft. insulated area, in climate equal to that of Milwaukee, Wisc.

A Few Representative Buildings Insulated With Gold Bond Rock Wool

United States Government Post Office, St. Paul, Minn.

Traybird Apartments, Cleveland, Ohio.





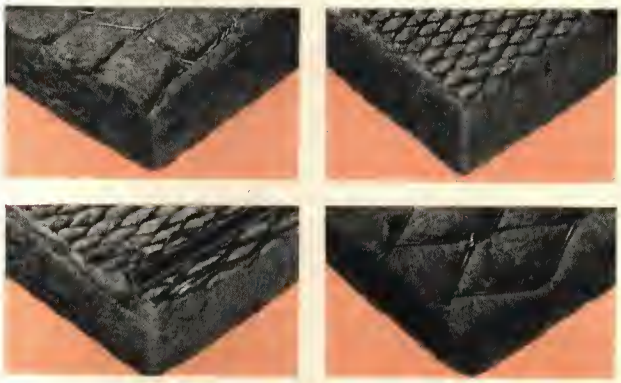
Teche Greyhound Bus Terminal Building, New Orleans, La.

Gold Bond

INDUSTRIAL INSULATION

ZEROCEL, FLEXFELT and INSULATING CEMENT for low and high-temperature application.

Installing Zerocel on typical cold storage jobs. Left, steel channel studs; right, wood stud construction.



Four typical styles of Gold Bond Flexfelt Blankets.

Troweling Insulating Cement over Flexfelt Blanket.

ZEROCEL

GOLD BOND ZEROCEL was introduced in 1933. It is now used for practically every type of low temperature installation . . . walk-in refrigerators; food locker plants; commercial and industrial cold storage plants; marine and land food-transport units. It is a semi-rigid Felt, easy to handle and install. About 95% of its bulk consists of trapped air-cells of high insulating value.

Thermal Conductivity: .24 at 60°F mean temperature. It is water-repellent, non-capillary, will not absorb moisture from the air. Fireproof, rotproof, does not attract rodents or vermin. Not only odorless but will not absorb odors. Physically and chemically stable. Stock sizes: 24″ x 30″ and 15″ x 48″ in thicknesses from 1″ to 6″. Special sizes on order. Write for folder.

FLEXFELT

GOLD BOND FLEXFELT METAL MESH BLANKETS consist of a pad of special mineral wool, felted and reinforced on both sides by metal mesh bound together by tie-wires through the mineral wool. They are available in various combinations of metal mesh to form an extremely rugged, fireproof material for insulation up to 1200°F. They are used in the industrial field wherever it is desired to conserve heat . . . on boilers, breechings, heat exchangers, fractionating towers, stills and many other industrial and commercial applications.

After application, Flexfelt Blankets are covered with a coat of Gold Bond Insulating Cement.

Stock sizes: 24″ x 48″ and 24″ x 96″ in thicknesses from 1″ to 6″. Literature and application details on request.

INSULATING CEMENT

GOLD BOND INSULATING CEMENT is composed of mineral wool, asbestos and special clays. Its fibrous, pelleted structure gives it high insulating efficiency. It is simply mixed with water and applied with trowel or hands on hot or cold, rough or smooth surfaces. Has strong adhesion and will not develop shrinkage cracks upon drying.

Used as a scratch or finish coat over insulating blankets or as a monolithic primary insulating coat on irregular surfaces such as valves and fittings. Fully efficient up to 1800°F; reclaimable from installations up to 1200°F; simply break it up, remix and re-apply. Fireproof, non-corrosive. One pound covers about one square foot ½″ thick *after drying.*

Write for technical data on specific applications.

Gold Bond INSULATION PRODUCTS

FIBRE INSULATION BOARD, PLANK and TILE

for insulation, noise reduction, decoration.

Southern Wood Fibre

SOUTHERN woods exclusively are used in Gold Bond Fibre Insulation Boards—"live" woods that give the finished product beauty, strength and permanence. To make this all-wood product, logs are cut into short lengths, then mechanically ground into fibres and fabricated into big structural boards. National Gypsum Company's Multi-seal process of treating the fibres builds strength and moisture-resistance into every panel.

New "Automatic" Application

Gold Bond Fibre Insulation Tile and Plank now feature a concealed fastening edge for nailing or stapling. Fastening the material with a trigger-type hand stapler can be done in a fraction of the time required with nailing or other methods.

High Insulating Value

Innumerable air cells, trapped in the meshes of the finely ground wood fibres, retard the passage of heat. This is what gives Gold Bond Fibre Insulation Boards their valuable insulation properties. (They comply with Federal Specifications LLL-F-321-b.)

Photograph shows the fine mat surface of Gold Bond Insulation Board. Thickness of Board, Tile and Plank is full ½ inch.

Decorative Qualities

Gold Bond Fibre Insulation Boards and Tiles make pleasing walls and ceilings in their standard color or they may be painted with any good interior wall paint. For a beautiful suede-like finish in the choicest modern colors we particularly recommend Gold Bond Sunflex or Sunflex Deluxe. The boards may be beveled as in the room shown below to give the effect of random width planks.

"Quietation"

Lining a room with Gold Bond Insulation Board or Tile brings effective reduction of noise, whether the sounds originate in the insulated room, in adjoining rooms or outside the house. This makes for added comfort in homes, added efficiency in offices or workrooms and added profits in restaurants and clubs where increased patronage almost invariably follows this noise-reducing treatment.

Colors and Sizes

Normally, Gold Bond Fibre Insulation Board is made in a variety of textures, colors and sizes in panels, planks and tiles, but until the urgency of the housing shortage is eased, the following sizes only will be supplied:

Wallboard—½ in. thick; 4 ft. wide; 6, 7, 8, 9, 10 ft. long. Fine Mat Surface in Ivory Coated only.

Tiles—½ in. thick; 12 in. x 12 in., 12 in. x 24 in., 16 in. x 16 in. and 16 in. x 32 in. Fine Mat Surface in Ivory Coated only.

Planks—½ in. thick; 8, 10, 12 or 16 in. wide x 7, 8 or 9 ft. long, with decorative bead. Fine Mat Surface in Ivory Coated only.

Gold Bond Insulation Board was beveled in random widths and stenciled with Mexican motif designs to give this basement playroom its distinctive appearance.

Commercial buildings of all kinds prove that heat-saving, light-reflecting noise-reducing ceilings of Gold Bond Insulation Tiles are sound investments.

Gold Bond

INSULATION PRODUCTS

FIBRE INSULATION SHEATHING . . . . "Weather-conditions" homes against heat, cold and moisture.

WEATHER-CONDITIONED housing, quickly and at reasonable cost, is needed now as never before. No single type of building material does more to meet this need than Gold Bond Fibre Insulation Sheathing.

Quickly Erected

The big, lightweight panels go up so fast that one man can sheath the average small house in a day. The asphalt-coated panels provide immediate protection against driving rains so the interior work can proceed regardless of the weather. The big panels add greatly to the structural strength of the building and provide a permanently wind-tight enclosure which is also a good insulator. The "k" value is .33 b.t.u.'s.

Made of Sturdy Wood Fibre

Gold Bond Insulation Sheathing is made from specially selected Southern woods. Their tough fibres are rendered moisture-resistant by National's Multi-Seal process and then fabricated into big, sturdy panels. A heavy asphalt coating on both surfaces and all edges gives the panels additional protection against dampness.

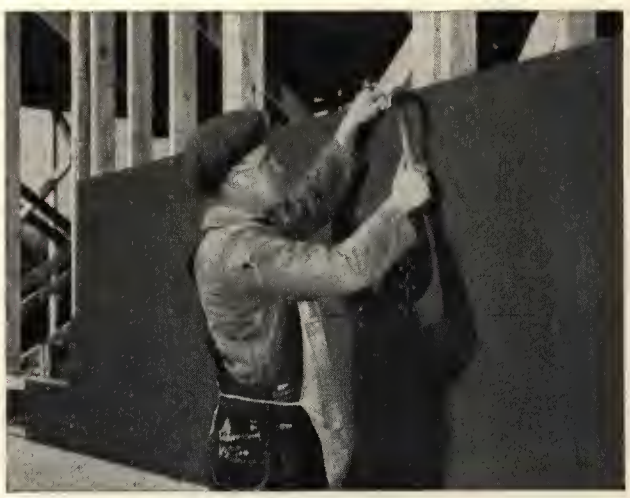
Convenient Sizes

Gold Bond Fibre Insulation Sheathing is supplied in panels $^{25}/_{32}$ in. thick, 2 ft. wide and 8 ft. long with ship-lap edges, and 4 ft. wide and 8 ft. long with square edges. Panels ½ in. thick, 4 ft. wide and 8 ft. long also are available.

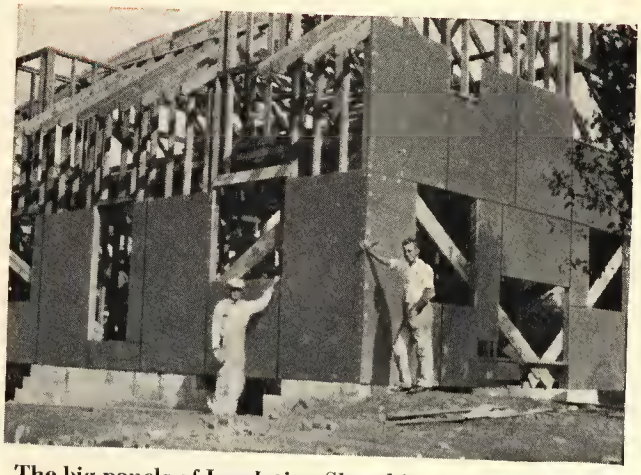
EXTRA MOISTURE PROTECTION

Both surfaces and all edges of Gold Bond Insulation Sheathing are protected against moisture by a heavy coating of asphalt. This is in addition to the moisture-resistant treatment of the wood fibres by National Gypsum Company's famous Multi-seal process.

The big panels of Gold Bond Fibre Insulation Sheathing add structural strength and fuel-saving insulation.



4'x8' panels are handled easily by one man. Each panel spans space between seven studs.



The big panels of Insulation Sheathing go up so fast that two men can sheath average small home in a half-day.

Gold Bond Fibre Insulation Sheathing gives a home effective "weather-conditioning" at reasonable cost.

SPECIFICATIONS

1. Scope of Work

Gold Bond Insulation Sheathing shall be used for all exterior wall surfaces which are to be covered by wood siding, shingles, stucco, masonry veneer or other exterior finish.

2. Framing

2–1. Framing members shall be creeted in the manner of approved standard practice and accurately spaced 12 in. or 16 in. on centers.

2–2. Extra headers (not smaller than 2 x 4's) shall be installed where necessary to provide a firm backing behind side and end edges of all full or trimmed panels of insulation sheathing.

3. Material

3–1. Sheathing—Shall be Gold Bond Fibre Insulation Sheathing as manufactured by National Gypsum Company and shall be delivered to the job in original wrappings. Boards shall be $\frac{25}{32}$ in. thick, 2 ft. wide and 8 ft. long with ship-lap edges; or 4 ft. wide and 8 ft. long with square edges; or ½ in. thick, 4 ft. wide and 8 ft. long only.

3–2. Nails—Shall be 1½ in. or 1¾ in. galvanized roofing nails with ½ in. heads. Nails shall be long enough to penetrate the wood framing at least 1 in.

4. Application

4–1. Ship-lap edge. Panels shall be applied horizontally, or at right angles to the studding. Center all end joints over framing members, except at corners, openings, etc. Break all joints in alternate courses. Panels shall be spaced approximately $\frac{3}{16}$ in. apart at the end joints but shall fit snugly at door and window frames. Panels shall not be forced into place.

4–2. Square edge. Panels shall be applied vertically, with the long sides running parallel to the studding. All joints shall center over framing members. Panels shall be spaced approximately $\frac{3}{16}$ in. apart at the end joints but shall fit snugly at door and window frames. Panels shall not be forced into place.

4–3. Nailing—Sheathing panels shall be nailed to each framing member, nailing first to the intermediate framing members with nails spaced about 6 in. apart. Nails at the edge shall be 3 in. to 4 in. apart and shall be placed not less than $\frac{3}{8}$ in. in from the edge of the panels. The nail heads shall be driven flush with the surface of the panels but not countersunk.

5. Exterior Finishes

Note 1—Gold Bond Insulation Sheathing shall not be used as a nailing base for any other material. Furring strips, stucco bases, siding, etc. shall be nailed *through the sheathing* to the wood framing.

Note 2—Building paper is not required over Gold Bond Insulation Sheathing except under exterior stucco. In some sections, however, F.H.A. regulations call for the use of building paper on all types of jobs.

5–1. Wood siding shall be applied directly over the sheathing and shall be nailed to each framing member with nails long enough to penetrate the wood at least 1 in. All joints of wood siding shall butt on the center of framing members.

5–2. Shingles—Furring strips, at least 1 in. x 2 in. shall be applied horizontally over the sheathing and secured with nails long enough to penetrate at least one inch into the wood framing. The furring strips shall be spaced the same distance, center to center, as the weather exposure of the shingles. Shingles shall be nailed to the furring strips in accordance with the shingle manufacturer's specifications.

5–3. Stucco—The entire sheathed surface shall be covered with a continuous layer of asphalt saturated waterproof paper weighing at least 10 lbs. per 100 square feet. It shall be lapped at least 4 in. at all joints and around all openings. Self-furring stucco bases such as Gold Bond Diamond Mesh Self-furring Lath may be applied directly over the building paper. If necessary, strips of wood lath shall be used to make certain that there is at least ⅜ in. of clear space between the stucco base and the sheathing. Non-furring stucco bases such as standard Gold Bond Diamond-Mesh Lath shall be nailed to 1 in. x 2 in. wood furring strips applied vertically over the studs. All nailing of both furring strips and stucco base shall be done with nails or staples that are long enough to extend through the sheathing and at least 1 in. into the wood framing.

5–4. Masonry Veneer—Metal ties for masonry veneer shall be attached over the sheathing with nails that penetrate 1 in. or more into the wood framing members. At least ½ in. of clear space shall be left between the sheathing and the back of the veneer.

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BIRMINGHAM 3, ALA.
1411 First National Building (17 No. 20th Street)
Telephone 4-7554

BOSTON 16, MASS.
250 Stuart Street, Back Bay
Telephone Hubbard 1766

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National Gypsum Building (325 Delaware Avenue)
Telephone Cleveland 5880

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1727 Chicago Title & Trust Building
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TECHNICAL INFORMATION

WALL & CEILING CONSTRUCTIONS

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UNITED STATES GYPSUM

PERFORATED ROCKLATH*

DESCRIPTION

Perforated ROCKLATH plaster base is a gypsum lath made in sheet form. The core, fibered gypsum, is faced on sides and longitudinal edges with paper specially manufactured for this purpose. The perforations are ¾" round holes 4" on centers.

Standard size is ⅜" x 16" x 48".

Complies with ASTM Designation C37-42 and Federal Specification SS-P-431a.

FUNCTION AND UTILITY

FIREPROOF—ROCKLATH plaster base, having a gypsum core, is incombustible and will not transmit temperatures much over 212°F. until completely calcined, a slow process. For economy perforated lath is especially useful where one hour fire ratings are required. Refer to Technical Data on next page.

RESISTANCE TO SOUND TRANSMISSION—BMS report No. 17, published by National Bureau of Standards, assigns a sound-transmission loss rating of 41.1 db. to a wood stud partition with gypsum lath and plaster both sides. See Technical Data on next page for higher ratings.

STRENGTH OF BOND—Tests indicate gypsum plaster bonds to ROCKLATH with a factor of safety of 144. This unusual bonding strength, plus the "riveting" of plaster through the lath, helps account for the high fire rating of Perforated ROCKLATH and plaster.

STRUCTURAL STRENGTH—The large sheets add appreciable resistance to lateral distortion of the frame. When plastered to standard ⅞" grounds, the construction offers high transverse strength between framing members.

PERFORMANCE—Gypsum is a mineral, not affected by time, decay, dry rot, or normal humidity conditions; does not attract vermin.

LOW IN COST—Its low cost and outstanding performance have made perforated ROCKLATH plaster base and plaster the standard of excellence throughout the country because:

a. Material is low in cost.

b. Large units (5⅓ square feet) are quickly erected, affording low labor cost.

c. Requires approximately 20 per cent less plaster than other key-type laths.

LIMITATIONS OF USE

1. ROCKLATH, ⅜" thick, is designed for supports not to exceed 16" on centers. For centerings greater than 16" and not more than 24", ½" thickness of ROCKLATH should be used.

2. For use with gypsum plaster only. Bond between lime or portland cement plaster and ROCKLATH is inadequate.

3. Gypsum lath and plaster, painted with 3 coats lead and oil, has a vapor permeability of about 7½ grains of water per square foot per hour per psi difference in vapor pressure. For higher resistance to vapor transmission, use Insulating ROCKLATH plaster base described on page 4.

4. ROCKLATH plaster base should not be used where exposed to excessive moisture or humidity. Use galvanized metal lath (or galvanized metal fabric), and portland cement-lime plaster.

5. Perforated ROCKLATH should not be used on ceilings with Resilient ROCKLATH Clips or similar suspensions. Use plain ROCKLATH with full scratch coat, raked and allowed to set. Follow with brown coat to total thickness of 7/16" over the lath before the application of any type of finish.

SPECIFICATIONS

For Nail-on Construction

SCOPE: Unless otherwise shown on plans, all exterior walls, all interior stud partitions and all ceilings are included. (*For clip attachment details, see pages 7, 8 and 9.*)

MATERIALS: *Gypsum lath* shall be (Perforated) (Plain) ROCKLATH, ⅜" thick x 16" x 48", manufactured by the United States Gypsum Company. (*For Insulating ROCKLATH, see page 4.*)

Accessories, including cornerite and corner bead, shall be manufactured by the United States Gypsum Company.

Nails shall be 1⅛" 13 gauge, blued ⅜" flat head, smooth diamond point. (For attachment to wood.)

APPLICATION: ROCKLATH plaster base shall be applied face out with the long dimension at right angles to the framing members with staggered vertical joints. Also stagger joints between walls and ceilings where practical so that vertical joints on wall will not meet ceiling joints. Space nails approximately 4" apart, using 5 nails per lath, per support. ROCKLATH shall not be butted tightly together at all joints, re-entrant angles shall be reinforced over the ROCKLATH with Cornerite. Cornerite shall be fastened only sufficiently to retain position during plastering. Cornerbead shall be applied to all exterior angles by nailing through to framing.

**Trademark Reg. U. S. Pat. Off.*

"RED TOP," "BRIDJOINT," "CHESHIRE," "BONDCRETE," "PYROBAR," "ROCKLATH," "ORIENTAL," "SABINITE," "IVORY," "GRAND PRIZE," "CHAMPION," "STAR," "USG," "TRUSSTEEL," "SHEETROCK," AND "PERF-A-TAPE," are registered trademarks, "BRACE-TITE" is a trademark owned by United States Gypsum and are used by it to distinguish its products.

"RED TOP" identifies the particular plasters and finishes;

"BRIDJOINT" identifies the particular lathing system;

"BONDCRETE" identifies the particular plaster for concrete surfaces;

"PYROBAR" identifies the particular gypsum partition tile;

"ROCKLATH" identifies the particular gypsum lath or plaster base;

"ORIENTAL" identifies the particular colored finishes;

"SABINITE" identifies the particular acoustical plaster;

"IVORY," "GRAND PRIZE" and "CHESHIRE" identify the particular hydrated limes;

"CHAMPION" and "STAR" identify the particular white gauging plasters;

"TRUSSTEEL" identifies the particular truss designed stud;

"SHEETROCK" identifies the particular gypsum wallboard;

"PERF-A-TAPE" identifies the particular joint sealing tape;

"BRACE-TITE" identifies the particular lathing system;

all manufactured by United States Gypsum.

PLAIN ROCKLATH

DESCRIPTION

Plain ROCKLATH plaster base is a gypsum lath made in sheet form. The core, fibered gypsum, is faced on sides and edges with paper specially manufactured for this purpose.

Standard size is 3/8" x 16" x 48".

FUNCTION AND UTILITY

To provide a fireproof plaster base for steel or wood supports as indicated by tests. Plain ROCKLATH provides a bond with gypsum plaster having a factor of safety of 144 and is the equal of Perforated ROCKLATH with respect to:

1. Resistance to sound transmission.
2. Structural strength.
3. Durability.
4. Low cost.
5. Complies with ASTM and Federal Specifications.

LIMITATIONS OF USE

Same as Perforated ROCKLATH plaster base except that where a one hour fire protection is required, then Perforated ROCKLATH should be used. (See Technical Data Chart.)

TECHNICAL DATA

PARTITIONS

Construction	Total Weight Per Sq. Ft.	Fire Rating	Reference	Sound Trans. Loss	Reference
3/8" Plain or Insulating ROCKLATH, nail-on, 2"x4" studs. Plastered with gypsum plaster 1:2—1:2	15.0 lbs.	45 Min.	National Bureau of Standards	41.1	National Bureau of Standards
3/8" Plain or Insulating ROCKLATH, nail-on, 2"x4" studs. Plastered with wood fiber plaster.	13.7 lbs.	1 Hr.	National Bureau of Standards	41.1 (1)	
3/8" Perforated ROCKLATH, nail-on, 2"x4" studs. Plastered with gypsum plaster 1:2—1:2.	15.0 lbs.	1 Hr.	National Bureau of Standards	41.1 (1)	
3/8" Perforated ROCKLATH—Resilient clips. Plastered with gypsum plaster 1:2—1:2.	15.0 lbs.	45 Min.	A Nationally Recognized Fire Testing Laboratory (2)	47.0	National Bureau of Standards
3/8" Perforated ROCKLATH—Resilient clips. Plastered with wood fiber plaster.	13.7 lbs.	45 Min. (1)		47.0 (1)	

CEILINGS

3/8" Perforated ROCKLATH nailed to 2"x 10" wood joists with 5/16" headed nails. 3/4" sub floor—diaphragm of asbestos paper—T&G finished floor. Ceiling plastered with gypsum plaster 1:2—1/2" thick.	6.0 lbs.	30 Min.	National Bureau of Standards	No Test	
Same as above except nails had 3/8" head.	6.0 lbs.	45 Min.	National Bureau of Standards	No Test	
3/8" Perforated ROCKLATH nailed to 2"x 10" wood joists with 3/8" headed nails. Striplath applied to joints with 3/4" nails having 1/2" head. Plastered with gypsum plaster 1:2—1/2" thick.	6.0 lbs.	1 Hr.	National Bureau of Standards	No Test	
Plain ROCKLATH—Resilient Clips. Plastered with wood fiber plaster.	5.3 lbs.	20 Min. (1)		50.0 (1)	
Plain ROCKLATH nailed to 2"x10" joists and Striplath joints. Plastered with wood fiber plaster and finished with SABINITE* "M" Acoustical plaster.	5.0 lbs.	1 Hr. 15 Min. (1)		42.0 (1)	

(1) Estimated from available data. (2) Name on request.

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INSULATING ROCKLATH

DESCRIPTION

Insulating ROCKLATH plaster base is plain ROCKLATH plaster base with a sheet of bright aluminum foil on the reverse side.

FUNCTION AND UTILITY

Similar to those listed for Plain ROCKLATH plus:

Vapor Barrier—Aluminum foil is the most effective vapor barrier known and used commercially. See rating table below. On Insulating ROCKLATH the aluminum foil is attached to the back of the lath and is properly located in the exterior wall and ceiling construction.

Insulating Value. When accompanied by not less than ¾" air space next to the foil, it provides insulation equivalent in value to ½" fiber insulation board.

Cost—One cent to one and one-half cents per sq. ft. more than Plain or Perforated ROCKLATH.

LIMITATIONS OF USE

Same as Plain ROCKLATH, except for vapor transmission.

SPECIFICATIONS

Use specifications given for Plain or Perforated ROCKLATH, *adding the following paragraph:*

MATERIALS

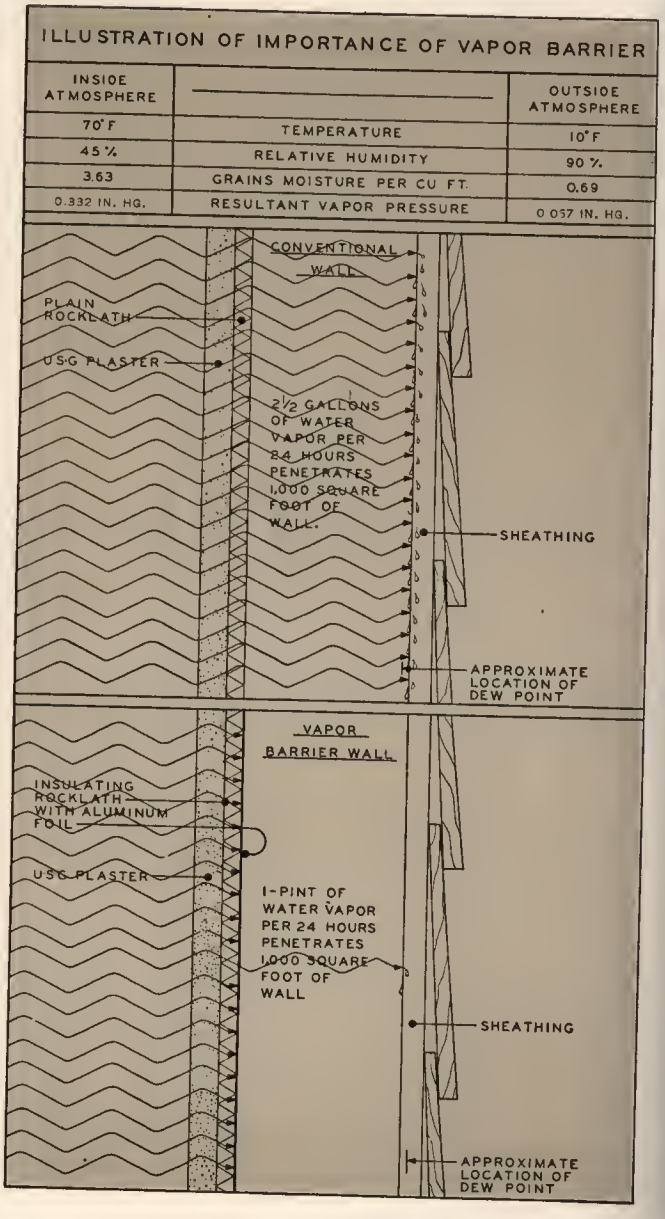
Gypsum lath for exterior walls and top floor ceilings shall be Insulating ROCKLATH plaster base ⅜" x 16" x 48", manufactured by United States Gypsum Company.

EFFECT OF VAPOR BARRIERS ON CONDENSATION

Atmospheric air always contains moisture in the form of an invisible gas, water vapor. Like all gases, this water vapor exerts pressure, the greater the quantity of it present in the air at a given temperature, the higher the pressure. Consequently, just as water at a higher level will flow to a lower point unless a barrier is interposed, so water vapor at a higher pressure will flow to an area of lower pressure unless a suitable barrier intervenes.

In the typical example shown, the higher water vapor on the inside exerts a higher pressure than exists outside. It, therefore, flows toward the outside, progressively meeting colder and colder temperatures. As the temperature decreases, the air can hold less and less water vapor without becoming saturated with it. So, at a point near the back of the sheathing in both walls, temperatures are reached where the air can no longer hold the water vapor moving into it, and the excess water vapor condenses out within the constructions. However, the rate of vapor flow toward the outside in the "Conventional Wall" is about 20 times as great as it is in the "Vapor Barrier Wall," because the vapor permeability of the plaster and lath in the former is about 20 times that of the plaster lath and *foil* in the "Vapor Barrier Wall." As a result, the condensation in the "Conventional Wall" is about 2½ gallons per one thousand square feet of wall per day, whereas only about 1 pint condensed out in the same area of "Vapor Barrier Wall."

When the atmospheric conditions indicated are of considerable duration, the amount of condensation in the "Conventional Wall" is sufficient to damage the interior decoration, exterior paint, or any of the other wall components. In the "Vapor Barrier Wall," however, the quantity of condensate is so minor as to be readily dissipated.



Recommendations

1. An efficient vapor barrier should be installed in all exterior walls and ceilings in locations where below freezing weather occurs for extended periods of time.

2. Vapor barrier should be on the warm side of the wall.

3. Vapor barrier should have a vapor permeability of not more than 1.00 grain per square foot, per hour, per inch of mercury vapor pressure difference.

4. Aluminum foil is one of the most efficient vapor barriers known and used commercially. When applied at our factory to the back of ROCKLATH plaster base or SHEETROCK* gypsum wallboard, the resultant products are known as Insulating ROCKLATH and Insulating SHEETROCK. Permeabilities to vapor transmission of these and other materials are shown below.

Material	Permeability in Grains Per Sq. Ft. Per Hr. Per Inch Hg.
Insulating ROCKLATH and Insulating SHEETROCK	0.085 to 0.385
Duplex Papers	0.515 to 2.56
Insulation Back-up Paper	0.860 to 3.40
Fir Sheathing	2.94
½" Plywood	2.66 to 3.35
Paint Film	3.43
Plaster with 3 coats lead and oil paint	3.68 to 3.84
Pine lap siding	4.90
Slaters Felt	5.15 to 25.60
Plaster on wood, fiber board or plain gypsum lath	11.0 to 20.5
Fiber board sheathing	25.7 to 34.2
Still air	34.7

For other permeability ratings see BSM-63—Bureau of Standards.

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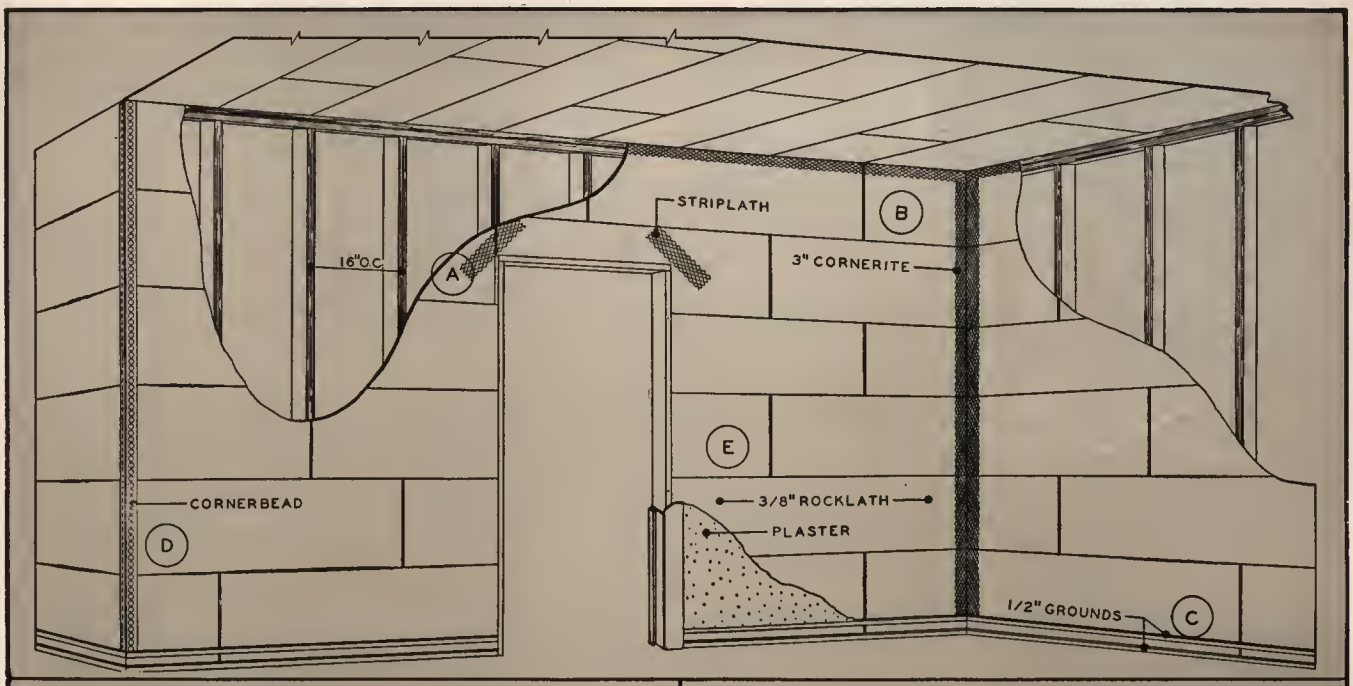
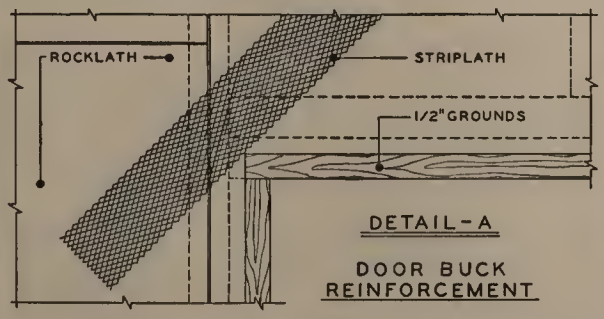
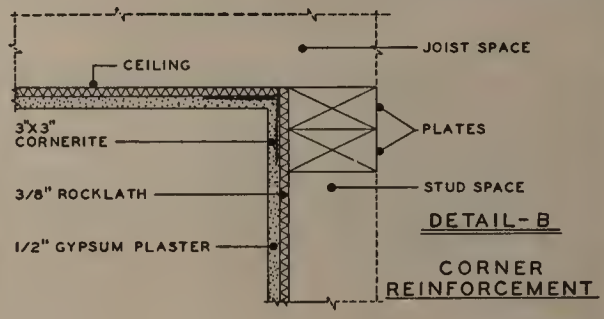
ROCKLATH PLASTER BASES — Details





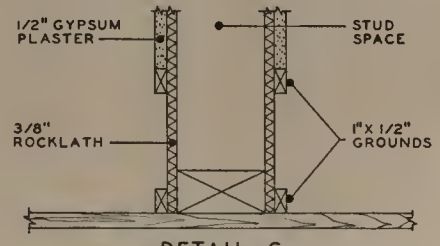
DETAIL-A

DOOR BUCK REINFORCEMENT



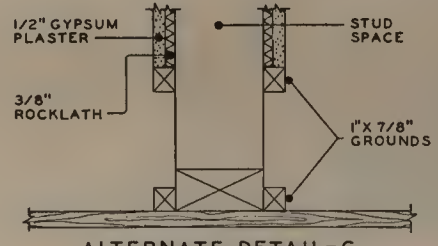
DETAIL-B

CORNER REINFORCEMENT



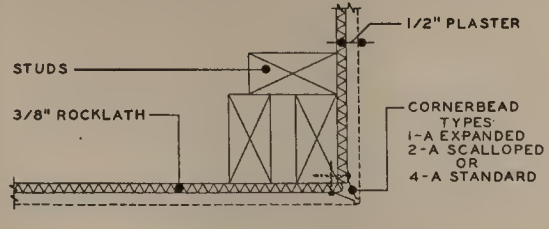
DETAIL-C

1/2" GROUNDS OVER ROCKLATH

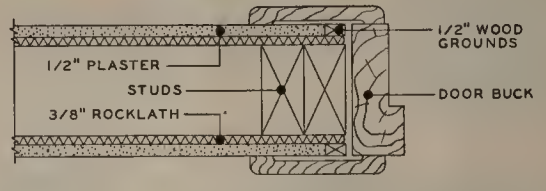


ALTERNATE DETAIL-C

7/8" GROUNDS ON WOOD STUDS



DETAIL-D



DETAIL-E

DOOR BUCK

SCALE: 1½"=1'-0"

ROCKLATH RESILIENT LATHING SYSTEM

DESCRIPTION

The ROCKLATH Resilient Lathing System is a method for attachment of ROCKLATH plaster base, "floating" it free from the framing by means of resilient spring clips.

FUNCTION AND UTILITY

EXCELLENT RESISTANCE TO SOUND TRANSMISSION. National Bureau of Standards assigns a sound transmission loss rating of 47.0 db. to a wood stud partition with resilient clips, gypsum lath and plaster both sides. See Technical Data Page 3.

MAXIMUM CRACK RESISTANCE. Spring clips permit limited movement of framing members, their resilience reducing the strain on the plaster coat.

REDECORATION ECONOMY. Minimizes possibility of streaking of decoration due to unequal temperatures where plaster base normally contacts framing members.

FLEXIBLE. Is applied to wood, steel or masonry construction.

COST. The increase in cost is only nominal and represents principally the addition of cost of clips over the nail-on system of application.

LIMITATIONS OF USE

Same as for Plain ROCKLATH plaster base. Plain or Perforated ROCKLATH plaster base is recommended for side walls. Only plain ROCKLATH with 3 coats of plastering is recommended for ceilings.

SPECIFICATIONS

(*Include the following paragraphs in the basic* ROCKLATH *plaster base Specification.*)

SCOPE

Designated areas shall be lathed and plastered with the United States Gypsum Company ROCKLATH Resilient System.

CARPENTRY WORK

(*For inclusion in the Carpentry Specifications.*) Grounds for Resilient Lathing System shall be 1¼". Furnish bucks of sizes detailed at all door openings.

MATERIALS

Lath shall be (Plain) (Perforated) (Insulating) ⅜" x 16" x 48" ROCKLATH plaster base, made by the United States Gypsum Company. Clips for attachments shall be USG Resilient ROCKLATH Clips of type required made and recommended by United States Gypsum Company. Cornerbeads shall be (1A Expanded) (4A Standard) manufactured by United States Gypsum Company.

APPLICATION

ROCKLATH plaster base shall be applied face out with the long dimension at right angles to the framing members with staggered end joints. Also stagger joints between walls and ceilings so that vertical joints on wall will not meet ceiling joints. All ROCKLATH corners shall occur over framing members and be secured with clips. Also, a clip shall be placed at every intersection of ROCKLATH edges and framing members. ROCKLATH shall be attached to framing members by means of USG Resilient ROCKLATH Clips spaced 16" on center in both directions. Attachment clips shall be used per following schedule:

R-1 Clip

R-2 Clip

For field	R-1
Corners and angles	R-2
Ceiling channels	R-3
Wood furring	R-4
Solid masonry	R-5

All cornerbeads shall be attached to ROCKLATH with staples or tie wires. Under no circumstances shall ROCKLATH or accessories be attached to framing. (*See construction details on next page.*)

R-3 Clip

R-4 Clip

R-5 Clip

REDUCTION OF SOUND TRANSMISSION

With the advent of lightweight construction during recent years, the problem of sound transmission has become increasingly acute. Industry and the Bureau of Standards have expended large sums in research, and we now have a fairly comprehensive knowledge of sound transmission and methods of reducing this annoyance.

Types of Sound Travel

Impact Sound, as the name implies, is created by physical impact. A machinery installation is a typical example and requires individual study to provide proper isolation. Impact sounds are the least annoying and they are not considered in this discussion. *Air-borne Sound* travels in all directions through the air from its source. It is the more common annoyance and the principal subject of this discussion.

Discussion

Sound is energy which travels in waves very much like those a pebble makes when thrown into a pool of placid water. Instead of traveling in a plane, as do the pebble-caused waves, air-borne sounds travel in all directions. These sound waves are so constituted that for half the duration of each wave the sound energy *pushes* against walls and ceilings because the air is in *compression.* For the remaining half of the cycle, the energy exerts a *pulling* force because the air is *rarified.* As these waves or cycles follow each other in rapid succession, they cause a vibration of the partition or ceiling. In other words, a construction acts as a diaphragm similar to that in a telephone receiver. The side opposite the source of sound is forced to vibrate, thus actually recreating sound in the adjacent room. Thus sound does not generally permeate from particle to particle through a construction to be emitted to the opposite side, but is recreated by diaphragmatic action.

Reduction of Sound Transmission

There are two well-known methods of reducing sound transmission:

1. The use of heavy construction which will remain relatively immovable against sound energy. Sound transmission decreases with increasing weight of homogenous construction. A 12" masonry partition is considered quite resistant to sound transmission, but it is uneconomical.

2. The use of a "Shock Absorbing" system between the source of sound and the structural elements of the partition. This is a generally accepted means of decreasing sound transmission, and is the principle employed in *resilient lath and plaster construction.* This simply, but effectively, separates the structural part of the wall (stud or masonry), from the lath and plaster by means of steel springs which permit the lath and plaster to vibrate independently, thus decreasing the energy transmitted to the structural part of the wall. If the vibration of the structural section of the wall is considerably reduced, then the vibration of the lath and plaster surface on the side opposite the source of sound is similarly reduced; hence, the amount of sound recreated on that side is correspondingly lessened. The steel used in the manufacture of clips is specially chosen for its ability to provide both the required resiliency and durability.

How Sound Is Measured

Sound is measured according to its intensity or loudness. The unit of measure of this loudness is the decibel, generally abbreviated as "db". A change in intensity of one decibel is approximately the smallest change in loudness that the average ear can detect.

Soft radio music has a loudness of about 35 db.

A stenographic room has a loudness of about 70 db.

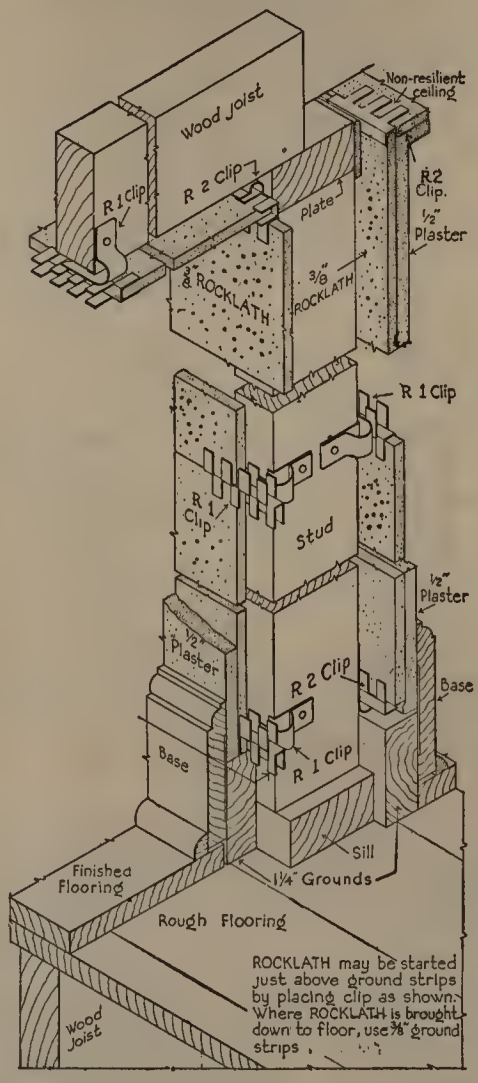
The effectiveness of ceilings or partitions in preventing sound travel is expressed as a *sound transmission loss rating.* If an office is separated from a stenographic room (70 db. loudness) by a partition having a sound transmission loss rating of 40 db, then a loudness of 30 db. (70 db. less 40 db.), will be detected in the office *if its noise level is zero.* If, however, the loudness in the office is 25 db., then only 5 db. of the stenographic room loudness will be detected. If the office noise level is 30 db., then no noise transmission will be detected.

The National Bureau of Standards has evaluated many constructions for their resistance to sound transmission. While these are accurate laboratory tests, it cannot be assumed that their values will be duplicated in the field. For example, air and ventilating ducts or pipes often decrease the value of sound insulation methods. Sound travel over and under partitions may reduce the overall efficiency. Therefore, rated values of *sound transmission loss* are only relative and not always duplicated on the job.

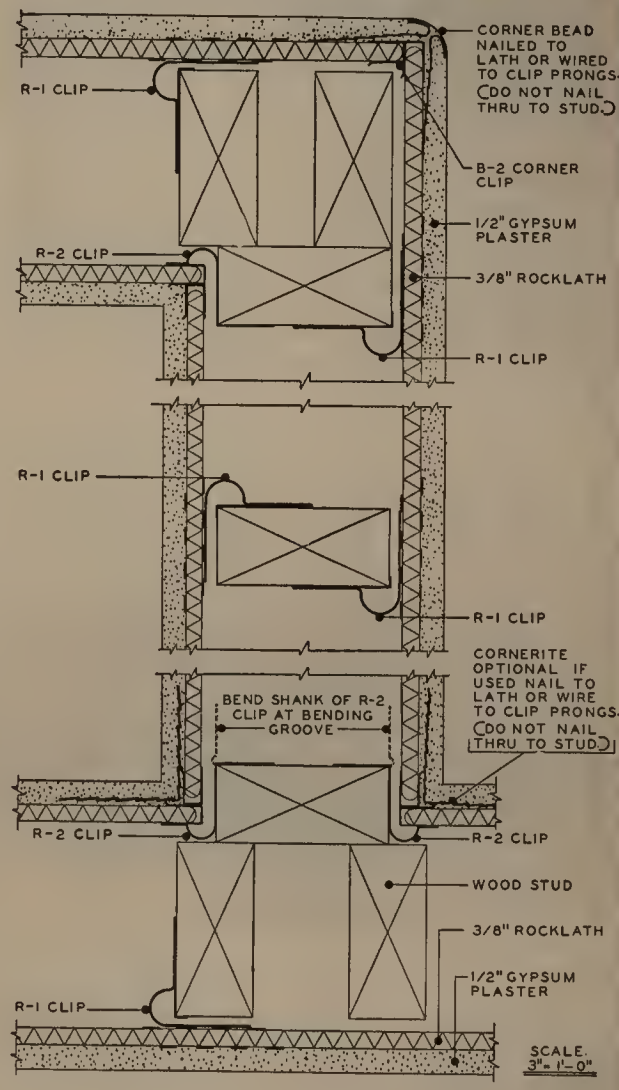
See Technical Data Table Page 3 for sound transmission loss ratings.

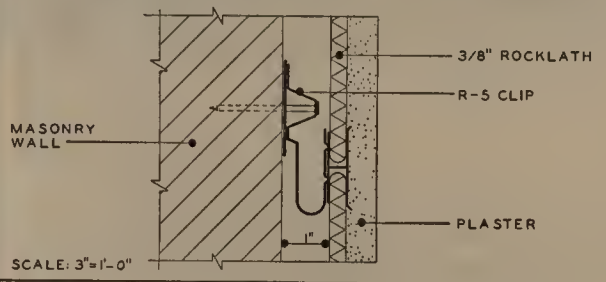
ROCKLATH RESILIENT LATHING SYSTEM

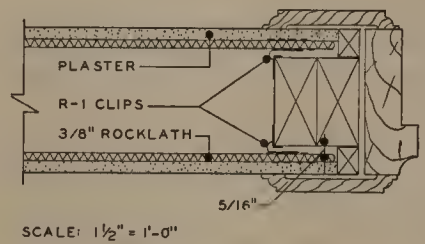
WALL AND CEILING



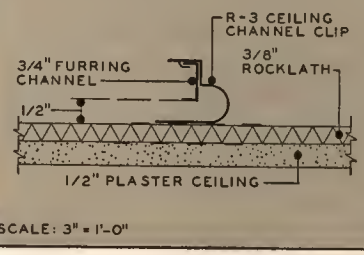
WALL CORNER CONSTRUCTION

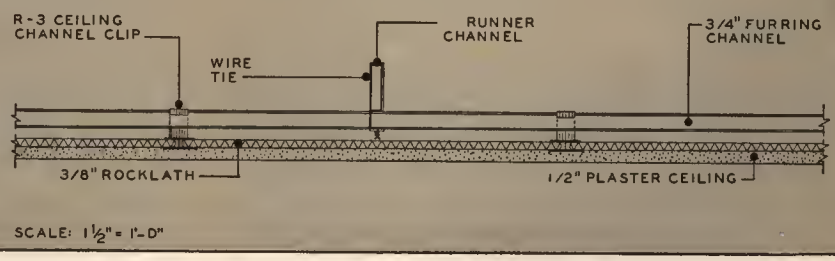






DOOR BUCK DETAIL





BRIDJOINT LATHING SYSTEM

DESCRIPTION

The BRIDJOINT Lathing System is a clip application of ROCKLATH plaster base on walls and ceilings so designed that ends (16″ dimension) of the lath fall between (not on) framing members.

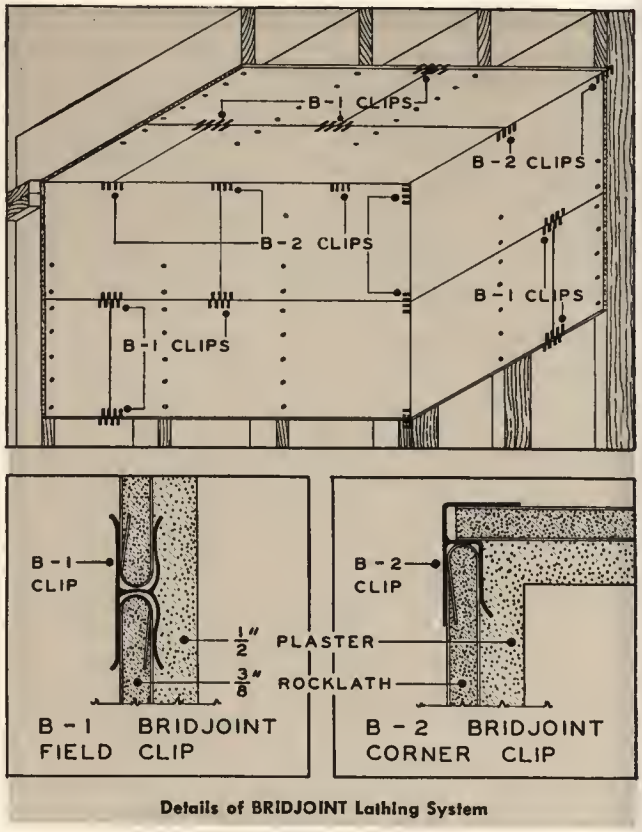
FUNCTION AND UTILITY

RESISTANCE TO CRACKING. Removal of gypsum lath ends from framing members increases resistance to cracking at the most vulnerable points.

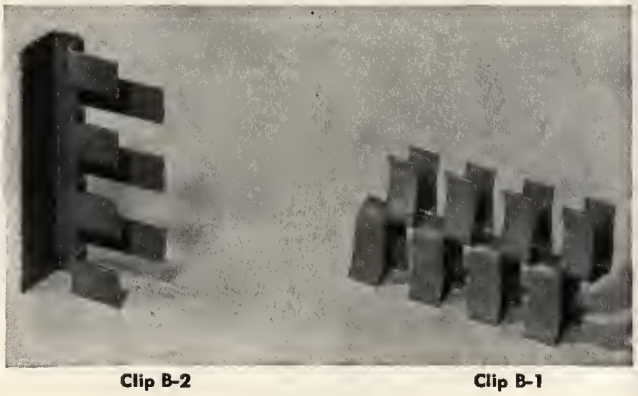
FRAMING MEMBERS need not be exactly 16″ on centers, as ends of the lath may occur at random except at corners.

ADAPTABLE OVER NAILABLE STEEL FRAMING, if framing members are spaced not more than 24″ on center, and provided that ½″ thick, plain ROCKLATH is used in lieu of the ⅜″. Nails of not less than ⅜″ head shall be used and must be of sufficient length to extend beyond the nail retention curve of the member, or of special design to lock in member as recommended by manufacturers of framing.

COST. Twenty-five percent less nailing of the lath is required. Cornerite and nailing are eliminated in corners, making for speed and economy. This results in only a slight increase over the cost of nail-on construction.



Details of BRIDJOINT Lathing System



Clip B-2 Clip B-1

BRIDJOINT Clips

SPECIFICATIONS

SCOPE

Designated areas shall be lathed with United States Gypsum Company BRIDJOINT Lathing System. Grounds shall be ⅞″.

MATERIALS

Lath shall be (Plain) (Perforated) (Insulating) ⅜″ x 16″ x 48″ ROCKLATH, made by United States Gypsum Company. Clips for attachment shall be BRIDJOINT* Clips, manufactured by United States Gypsum Company. Cornerbeads shall be manufactured by United States Gypsum Company. Nails shall be 1⅛″ x 13 gauge blued ⅜″ flat head smooth diamond point.

APPLICATION

ROCKLATH shall be applied with the long dimensions at right angles to the framing members with staggered end joints. Also stagger joints between walls and ceilings so the vertical joints on walls will not meet ceiling joints. Space nails approximately 4″ apart, using 5 nails per lath, per support where nails are called for. ROCKLATH units forming the ceiling angles should be nailed only from the center of the lath to the edge, away from the ceiling angle. ROCKLATH plaster base shall be applied to framing members in such a manner that ends (16″ dimension) of lath do not fall on framing members. Secure end joints to adjacent laths by the use of B-1 Field Clips at each corner of each lath. The internal corners of lath and external angles are to be secured to each other by the use of B-2 Corner Clips. Do not nail ROCKLATH in corners. For external angles, cornerbead shall be stapled or tie-wired to ROCKLATH. It shall not be secured to framing.

Trademarks Reg. U. S. Pat. Off.

BRACE-TITE LATHING SYSTEM

DESCRIPTION

The BRACE-TITE Lathing System is a mechanical suspension of ROCKLATH plaster base to standard metal grillage (¾" channels not over 16" o.c.).

FUNCTION AND UTILITY

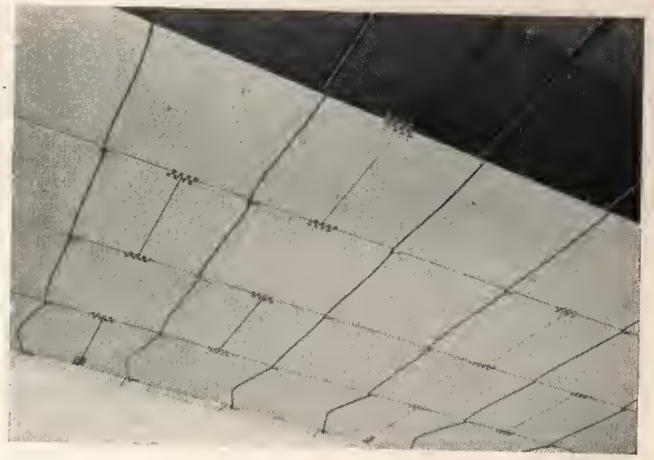
RIGIDITY SIMILAR TO NAIL-ON. The field clips, spaced 16 inches o.c., support the ROCKLATH across the full width of the board. The spring action of the field clip increases rigidity.

EASY TO APPLY. The loop of the BRACE-TITE field clip is dropped over the channel and hooked into the eye of the preceding clip.

RAPID ERECTION. Only three clips are required for each sheet of ROCKLATH plaster base plus two USG BRIDJOINT* B-1 clips at the end joint.

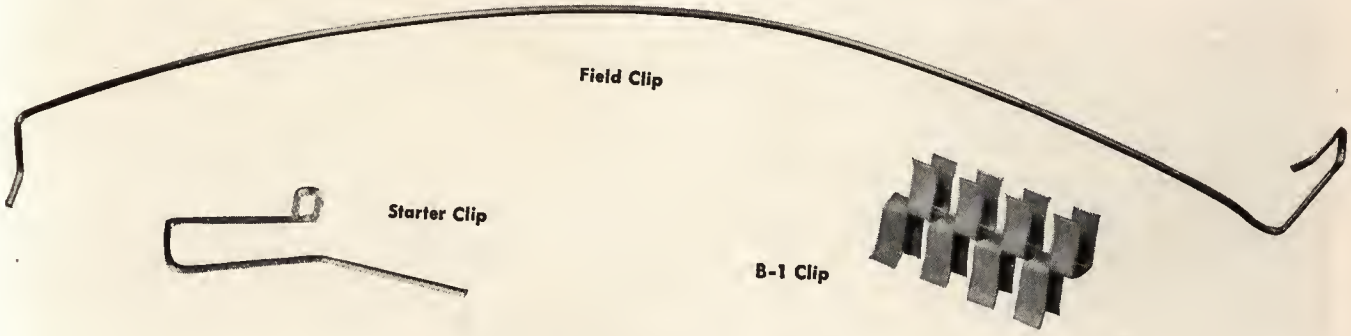
NO SPECIAL MATERIALS. Any standard ¾" channels, hot or cold rolled, may be used on conventional 16-inch or 12-inch spacing. Plain, Perforated or Insulating ROCKLATH plaster base may be used.

ADAPTABLE. The BRACE-TITE system may be used with any type of suspension having ¾-inch channels not over 16 inches on center.



REINFORCES PLASTER. The wire clip embedded in the plaster increases crack resistance.

COST. As the BRACE-TITE system requires only ½-inch of plaster in two coats, its use results in economy of application. The cost under normal conditions will approximate that of other types of mechanical suspension.



SPECIFICATIONS

SCOPE

Unless otherwise shown on plans, all ceilings are to be lathed with the BRACE-TITE Lathing System.

MATERIALS

CHANNELS—Channels shall be USG ¾" cold rolled channels, painted.

LATH—Gypsum lath shall be ⅜" x 16" x 48" ROCKLATH Plaster Base (Plain, Perforated or Insulating).

CLIPS—Attachment clips shall be BRACE-TITE Field and Starter Clips. End joint clips shall be USG B-1 BRIDJOINT* Field Clips.

CORNERITE—Cornerite shall be USG cornerite.

All of the above materials manufactured by United States Gypsum Company.

APPLICATION

¾" channels shall be applied to supporting 1½" channels or framing members, spaced 2" from parallel walls or beams and not over 16" on centers and securely wire-tied or clipped. The channel ends must extend beyond the plane of the abutting side wall. Place a BRACE-TITE starter clip over the end of the ¾" channel at the point where it meets the starting wall. ROCKLATH Plaster Base shall be applied with the long dimension at right angles to the ¾" channel. ROCKLATH shall rest on top of the starter clip loops, and shall be fastened to each channel with a BRACE-TITE field clip. ROCKLATH end joints shall fall midway between channels and shall be secured with USG B-1 BRIDJOINT field clips on both sides. Succeeding courses of ROCKLATH Plaster Base shall be attached with BRACE-TITE field clips hooked over the channel and fastened into the eyes of the preceding clips. End joints of ROCKLATH shall be staggered, and shall not coincide with the end joints of previous courses. All end joints shall be secured with B-1 BRIDJOINT Clips on both sides.

The last course of ROCKLATH shall be cut to the width required to fill the remaining space. The BRACE-TITE field clip used for this final course shall be inserted over preceding clip, pulled tight into eye and excess length cut off.

Where ¾" channel runs are interrupted by light troffers, grills, etc., BRACE-TITE starter clips shall be used to start a new course of ROCKLATH. For these locations, the extended leg of the starter clip shall be cut off so as not to protrude below the brown coat of plaster.

Angles between the ceiling and all vertical planes shall be reinforced over the ROCKLATH Plaster Base with USG Cornerite. The Cornerite shall be secured sufficiently to retain its position during plastering.

NOTE—Plaster shall be RED TOP* Gypsum Plaster manufactured by United States Gypsum Company, and shall be applied in accordance with the manufacturer's specifications for application over ROCKLATH Plaster Base.

**Trademarks Reg. U. S. Pat. Off.*

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2" SOLID ROCKLATH AND PLASTER PARTITION

DESCRIPTION

The 2" Solid ROCKLATH and Plaster Partition is a studless, non-loadbearing partition consisting of long length ROCKLATH plaster base, held vertically in floor and ceiling runners, and plastered on both sides.

Size of ROCKLATH—½" thick, 24" wide by ceiling-high lengths with longitudinal "V" edges.

FUNCTION AND UTILITY

Fireproof—Composed essentially of gypsum, the partition is incombustible and will not transmit temperatures greatly in excess of 212° until completely calcined—a slow process. See Technical Data for one hour fire rating.

Lightweight—Only 16 lbs. per sq. ft. of finished partition.

Space Saving—Saves 40 to 60 per cent of space occupied by conventional partitions. In every five lineal feet, a 2" partition creates one extra square foot of usable space over a 4½" partition.

Lateral Strength—The records of an official impact test show that a 60-lb. weight, traveling through a 4-foot fall, failed to produce a discernible crack on a full sized partition after three successive impacts.

Cost—Without consideration to space saving, the actual cost is comparable and competitive with conventional wood or metal studs with ROCKLATH plaster base and plaster, both sides.

Complies with FHA requirements for rental housing.

LIMITATIONS OF USE

1. For non-bearing partitions only.
2. Limiting height twelve feet.
3. For 1 hour fire rating, RED TOP* plaster sanded 1:1 scratch coat and sanded 1:2 brown coat must be used.

"ROCKLATH" and "RED TOP" are registered trademarks owned by United States Gypsum Company, used by it to distinguish its products. "ROCKLATH" identifies the particular gypsum lath or plaster base. "RED TOP" identifies the particular plaster manufactured only by United States Gypsum Company.

TECHNICAL DATA

Construction	Limiting Height	Weight Per Square Foot	Fire Rating	Reference	Sound Transmission Loss	Reference
½" Long-length ROCKLATH plastered both sides with ¾" RED TOP Plaster, sanded 1:1, 1:2	12 Ft.	16 Lbs.	1 Hr.	A Nationally Recognized Fire Testing Laboratory (1)	36.1	Bureau of Standards
Same, but plastered 1:2 scratch —1:3 brown	12 Ft.	16 Lbs.	45 Min.	USG Lab.	37.3	Bureau of Standards

(1) Name on request.

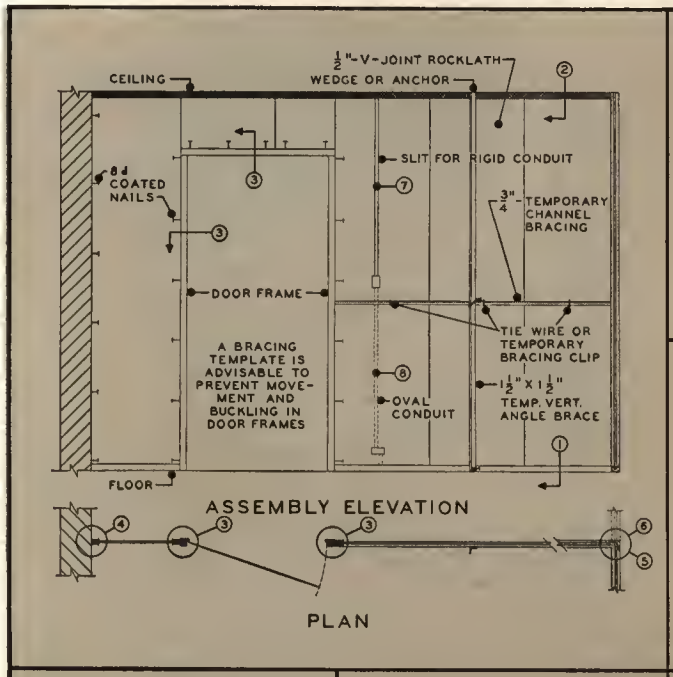
Setting Floor Runner

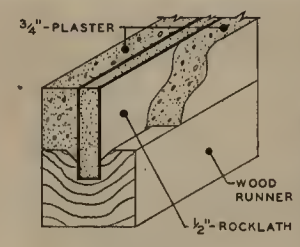
Erecting ROCKLATH—Alternate Methods

Attaching Temporary Brace

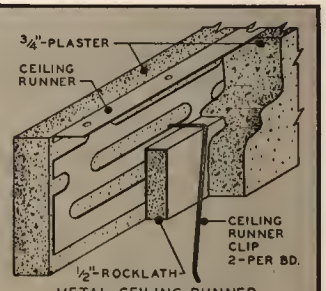
*Trademark Reg. U. S. Pat. Off.

2" SOLID ROCKLATH AND PLASTER PARTITION

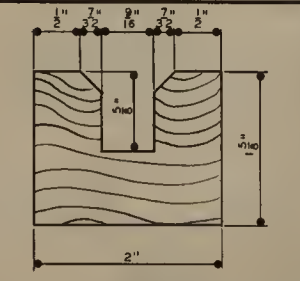




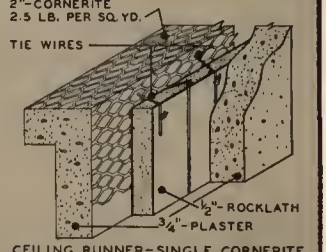
FLOOR RUNNER
DETAIL-1



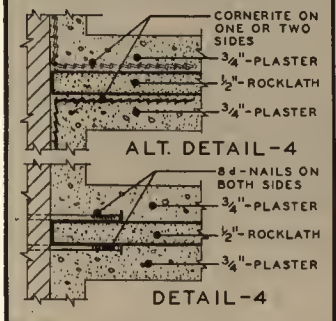
METAL CEILING RUNNER
DETAIL-2



WOOD
FLOOR RUNNER DETAIL

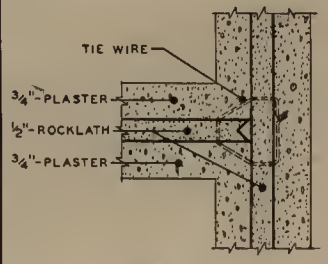


CEILING RUNNER-SINGLE CORNERITE
DETAIL-2

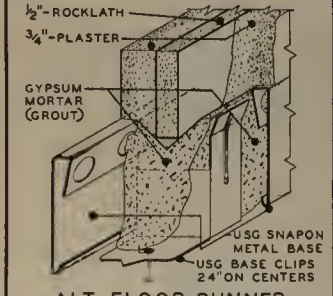


ALT. DETAIL-4

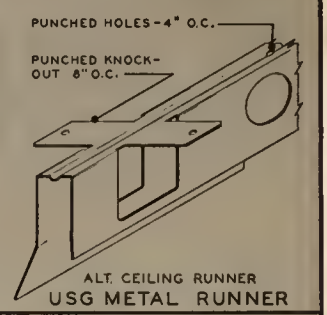
DETAIL-4



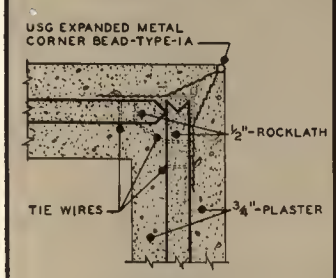
DETAIL-6



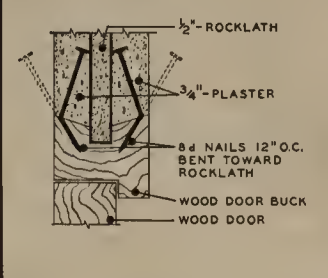
ALT. FLOOR RUNNER



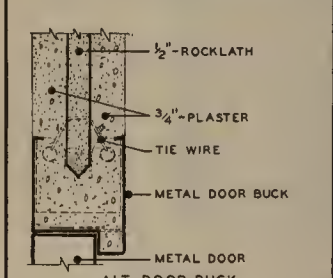
ALT. CEILING RUNNER
USG METAL RUNNER



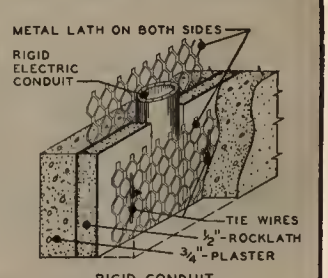
DETAIL-5



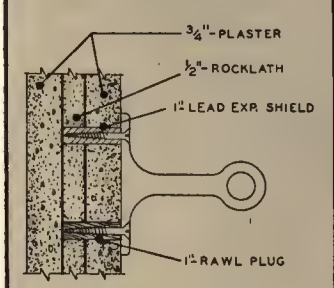
DETAIL-3



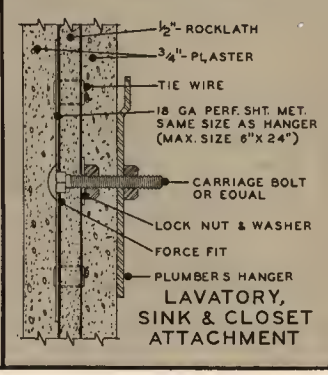
ALT. DOOR BUCK
DETAIL-3



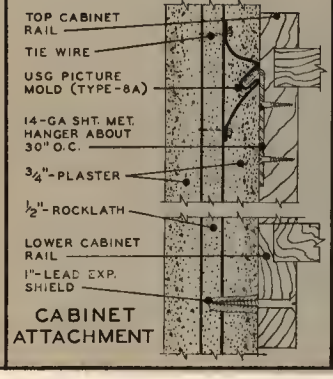
RIGID CONDUIT
DETAIL-7



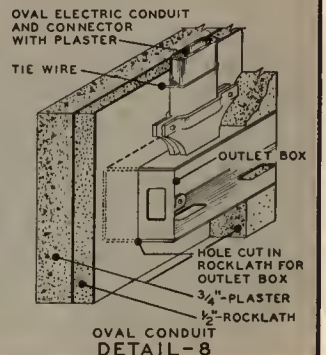
LIGHTWEIGHT
FIXTURE ATTACHMENT



LAVATORY,
SINK & CLOSET
ATTACHMENT



CABINET
ATTACHMENT



OVAL CONDUIT
DETAIL-8

2" SOLID ROCKLATH AND PLASTER PARTITION

SPECIFICATIONS

SCOPE

Unless otherwise shown on plans, all interior, non-load bearing partitions (*and exterior wall furring*) are included.

MATERIALS

Lath—Gypsum long-length lath shall be V-Joint plain ROCKLATH ½" thick, 24" wide by ceiling-high length manufactured by the United States Gypsum Company. (Lath for furring of exterior walls shall be ⅜" square edge Insulating long-length ROCKLATH.)

Plaster—Shall be RED TOP Gypsum Cement Plaster manufactured by the United States Gypsum Company.

Sand—Shall conform to the ASTM Specification designated as C 35-39.

Wood Runners—Shall be 1⅝" x 2" wooden floor runners milled according to USG details, with one prime coat of paint or varnish. Wood to be of select stock and resistant to splitting. Alternate: Floor runners shall be USG Metal base.

Metal Runners—Shall be USG cornerite or USG metal ceiling runner.

Priming—Wood and Metal Runners and Bucks—to be prime-coated before plastering.

Plaster Finish—As selected by the architect. (See specifications under Gypsum Plaster Base Coats and Finishes. Pages 31 to 42.)

APPLICATION

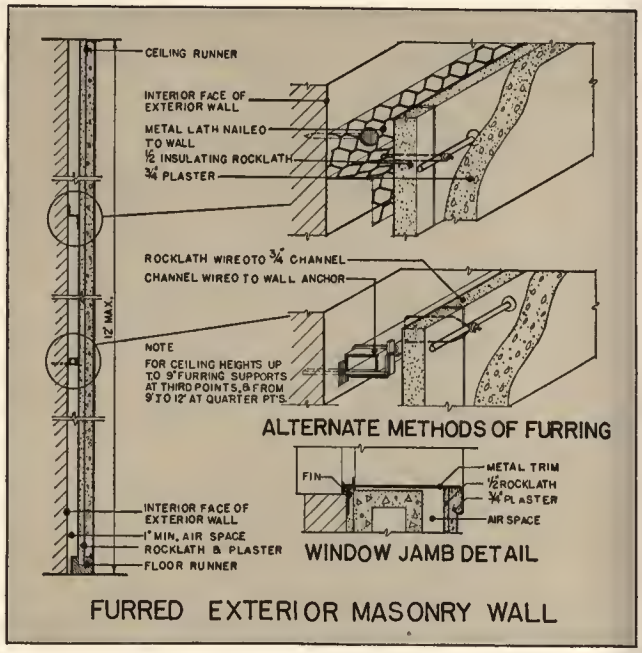
Lathing—Floor and ceiling runners shall be attached to rough floor and ceiling construction according to partition layout. ROCKLATH plaster base shall be cut in lengths to allow ¼" top clearance in the ceiling runner. The ROCKLATH shall be erected vertically, engaging the bottom in the slot of floor runner and either tying or clipping top to ceiling runner or engaging it in slot of ceiling runner, as required. Vertical edges of ROCKLATH shall be kept as plumb as possible and V-Joint edges be brought into intimate contact one with the other. No vertical cut edges of lath shall be used in central portion of partition. That is, the use of lath having cut edges shall be confined to such points as at the ends of the partition or at door bucks.

Bracing—For partitions not over 9′ in height, bracing shall consist of a ¾-inch steel channel erected horizontally just below mid-point of height. The bracing member shall extend the full length of the partition and shall be fastened to the lath by the use of tie wires looped over the channel or USG wire bracing clip at center of the lath in such a manner as to keep the lath joints together at that point as well as securing the channels to the lath. It shall be similarly wire-tied or clipped to the lath at their ends and fastened to abutting construction.

For partitions over 6 feet in length, the horizontal braces shall be reinforced by vertical struts every 6 feet or fraction thereof formed from 1½" x 1½" angles (or heavier materials) fastened securely at the bottom and wedged firmly against the construction at the head. Vertical struts shall be securely wire-tied to horizontal braces.

For partitions over 9 feet in height, two horizontal braces at third points shall be used. Attach lath in a similar manner.

Alternate Bracing—Bracing members shall consist of 2" x 4" wood braces erected horizontally just below mid-point of height and attached to lath with USG wire bracing clips. For partitions over 9′ high, two horizontal braces and two bracing clips per lath are required. The bracing members shall extend the full length of the partition and be anchored rigidly at the ends. Where partitions are longer than 10′, the temporary braces shall be reinforced by vertical 2" and 4" wood members, spaced not to exceed 9′ o.c., rigidly wedged at top and bottom and securely fastened to the horizontal braces.



Plastering—Plaster shall be sanded in proportion of 1 part plaster to 2 parts sand, by weight, for the scratch coats and 1 part of plaster to 3 parts of sand, by weight, for the brown coats. Procedure shall be as follows: (*See Note 4 under Optional Inclusions.*)

First, apply a scratch coat of plaster, about ⅜" thick, to each side of the lath. *In no case, shall application of scratch coat to second side of lath be delayed longer than the setting time of the scratch coat applied to the first side. Preferably such scratch coats should be applied simultaneously.*

After the scratch coats have set firmly and have partially dried (but not less than 16 hours), the brown coat shall be applied to the unbraced side, bringing it out to within 1/16" of ground dimension for finish coat to bring over-all partition thickness to 2 inches.

When brown coat has set firmly (but not less than 3 hours), braces shall be *carefully* removed from opposite side and brown coat applied to that side in a manner similar to that described for the other brown coat.

Finish Coat—As specified elsewhere.

OPTIONAL INCLUSIONS

1. All exterior walls shall be horizontally furred with Z-bent strip lath or ¾" channels at third points for ceiling heights of 9′ or less and quarter points for ceilings not exceeding 12′ in height. Floor and ceiling runner tracks shall be secured in the same manner as for 2" solid ROCKLATH and Plaster Partitions.

2. Insulating ROCKLATH plaster base shall be placed in floor and ceiling runners with the bright aluminum foil toward the structural wall. Secure the Insulating ROCKLATH to Z-bent strip lath or to furring channels with tie wire. (See Details.) Adjacent sheets shall be butted snugly.

3. *Door Bucks*—Shall be as specified elsewhere. They shall be secured to the partition according to the printed instructions of manufacturer.

4. Where one (1) hour fire rating is required, change proportions to "1 part plaster to 1 part sand by weight for scratch coat and 1 part plaster to 2 parts sand by weight for brown coat." Also, wood runners should be "Fireproofed," or metal runner used.

USG METAL LATH

DESCRIPTION

Metal lath is sheet steel that has been slit and expanded to form a multitude of small mesh openings.

It is made from rust-resisting copper alloy steel and is further protected by dipping the expanded sheet into black asphaltum paint. (Exception: 3.4 lb. diamond mesh when made from galvanized sheets.) For sizes and weights—See Technical Data page 18.

FUNCTION AND UTILITY

Metal lath is used as a plaster base and as centering for concrete.

FIRE RESISTANT—Metal lath and gypsum plaster provide the fire ratings shown on page 18.

STRENGTH AND REINFORCING—Metal lath embedded within the plaster thickness provides tensile strength in a similar manner to steel reinforcement in concrete slabs, thus providing unusually high resistance to transverse impact. It decreases the hazards of cracks and failures due to structural movement of the frame.

FLEXIBLE—Metal lath is readily shaped to ornamental contours to a degree not possible with other plaster bases.

QUALITY PLASTERING—The use of metal lath as a plaster base is conducive to good plastering because it makes the use of oversanded plaster in the scratch coat impractical.

LONG RANGE ECONOMY—Metal lath is intended for highest quality, fire resistant, durable plastering with low maintenance costs.

Limitations of Use

1. The minimum weights of lath for spacing of supports listed in Technical Data must be observed.
2. The securing of metal lath to supports should be according to the specifications printed herein.
3. Only clean sand should be used for plastering. Unwashed salt water sand should not be used.
4. When abnormally high humidity, moisture or acid fumes are anticipated, our nearest sales office should be consulted.

CAUTION—Failure to observe these limitations may result in failure

USG METAL LATH TYPES

USG DIAMOND MESH LATH

A small mesh (approximately 11,000 meshes per yard) diamond pattern metal plastering base.

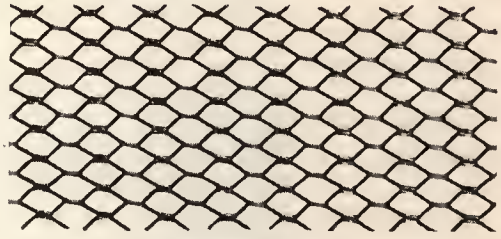
Size: 27″ x 96″.

Weights: 2.5 lbs. and 3.4 lbs. per square yard.

A general all-purpose lath. Best for ornamental, contour plastering. The small meshes conserve plaster and reduce droppings. Nationally available.

Limitations of Use

USG Expanded Metal Stuccomesh is preferred as a stucco base.



USG Diamond Mesh Lath

USG 1/8″ RIBLATH (Flat Riblath)

A herringbone mesh pattern, with 1/8″ deep Z-shaped ribs running lengthwise of the sheet at 1½″ intervals.

Size: 24″ x 96″, 27″ x 96″.

Weights: 2.75 lbs. and 3.4 lbs. per square yard.

Stiffening ribs and herringbone pattern increase rigidity, thus permitting a wider spacing of supports or a saving in the weight of lath required. Particularly suitable for attachment by nailing. Its unusual rigidity permits the application of basecoat plaster, scratch and brown coats, in a "double-up" operation. Small meshes conserve plaster materials.

Limitations of Use

Its rigidity makes it unsuitable for contour plastering. Use Diamond Mesh.

USG 1/8″ Riblath

USG 3/8″ RIBLATH

A herringbone pattern mesh with 3/8″ deep V-shaped ribs running lengthwise of the sheet at 8″ intervals, with inverted intermediate 1/8″ ribs.

Size: 24″ x 96″.

Weights: 3.4 lbs. and 4.0 lbs. per square yard.

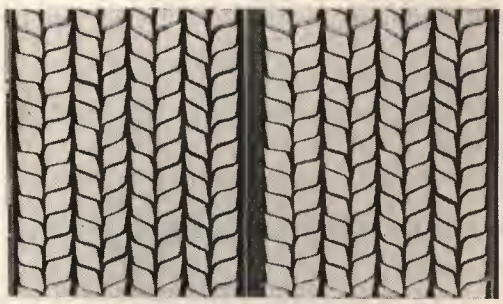
The heavy ribs provide exceptional rigidity. Used when supports are spaced more than 16″ o.c. and not more than 24″ o.c.

Desirable as a plaster base for heavy duty plastering.

Used as centering and reinforcement for concrete floor and roof slabs. See Technical Data, page 27.

Limitations of Use

Its extreme rigidity makes 3/8″ Riblath unsuitable for contour plastering. Use Diamond Mesh Lath.



USG 3/8″ Riblath

USG METAL LATH TYPES (Cont'd)

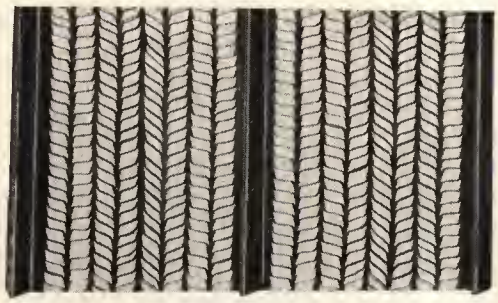
USG ¾" RIBLATH

A herringbone pattern mesh with ¾" deep V-shaped ribs lengthwise of the lath at 4" intervals.

Sizes: 2' x 8', 2' x 10' and 2' x 12'.

Weights: .60 lb. and .75 lb. per square foot.

A structural lath, providing the dual functions of centering and reinforcement for concrete floor and roof slabs. (See Data on page 6.)



USG ¾" Riblath

Limitations of Use

Not recommended as a plastering lath.

USG EXPANDED METAL STUCCOMESH*

A 1⅜" x 3⅛" diamond pattern mesh made of copper bearing steel, asphaltum painted. USG Stucco Furring nails are 1½" long and galvanized. They are equipped with a device which supports the mesh and spaces it ⅜" from the sheathing.

Special Functions

Designed as a base for exterior stucco, hand or pneumatically applied. The furring nails, equipped with ⅜" sliding spacers, provide for rapid erection of rigid furring and position the mesh for positive reinforcement of the stucco.

Limitations of Use

Should not be applied without using Stuccomesh furring nails.

When used over sheathing other than wood, longer nails, providing a minimum penetration of 1⅛" into studs, should be substituted for the 1½" nails specified.

USG Expanded Metal Stuccomesh

Specification

USG Stuccomesh shall be applied with USG Stucco Furring nails spaced not to exceed 16" horizontally and 6" vertically. Adjacent sheets shall be lapped at sides and ends by at least one diamond mesh. End laps shall be made over supports and staggered. All laps between supports shall be tied every 6" with 18 gauge galvanized annealed tie wire.

USG LATHING ACCESSORIES

USG CORNER BEADS

USG corner beads should be used on all external plaster angles to provide: (1) plaster protection, (2) true and straight lines at angles and (3) grounds for plastering.

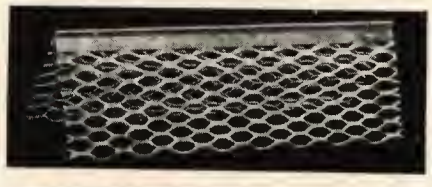
Lengths: 8', 9', 10' and 12'. *Gauge of Steel:* 26 gauge galvanized steel.

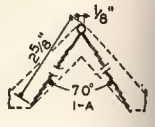
4-A FLEXIBLE CORNER BEAD

The general purpose corner bead. Economical and most generally used. By snipping flanges, this bead may be bent to any curved design (for archways, telephone niches, etc.). Made from 26 gauge galvanized steel.

1-A EXPANDED CORNER BEAD

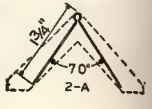
Its wide expanded flanges are easily flexed. Preferred for irregular corners. Provides increased reinforcement close to nose of bead. Made from 26 gauge galvanized steel.





2-A SCALLOPED FLANGE CORNER BEAD

A perforated flange, rigid type bead with projecting scallops that provide good nailing for irregular corners. Made from 26 gauge galvanized steel.



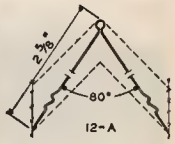
(See next page)

*Trademark Reg. U. S. Pat. Off.

USG LATHING ACCESSORIES (Cont'd)

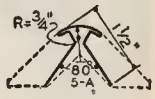
12-A WIDE FLANGE CORNER BEAD

Similar in size and shape to No. 1-A, but with perforated 2½" flanges. An exceptionally rigid bead. Made from 26 gauge galvanized steel.



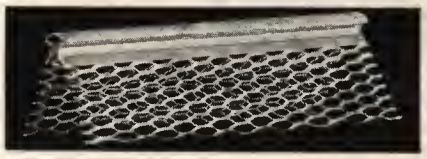
5-A BULL NOSE CORNER BEAD

A ¾" radius bull nose bead with short flange. Used for rounded corners. It is secured to corners with No. 9-A Clips attached to flanges. Made from 26 gauge galvanized steel.



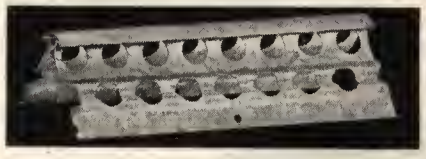
10-A EXPANDED BULL NOSE CORNER BEAD

A bull nose bead similar to above, but with 2½" wide expanded flanges. Especially suitable on irregular corners. Made from 26 gauge galvanized steel. (24 gauge on special order.)



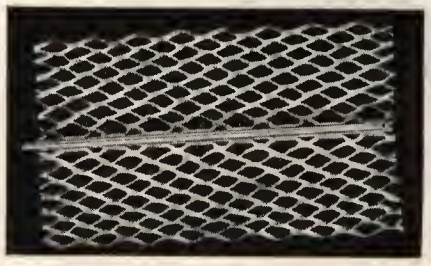
14-A BULL NOSE CORNER BEAD

Similar to the No. 10-A above for the nose design, but with 2½" wide perforated flanges. Made from 26 gauge galvanized steel. (24 gauge on special order.)



9-A CORNER BEAD CLIPS

A 3" clip for attachment of short flange beads where nailing or tieing the flange to the corner construction is impractical. The "cut-outs" of the clip securely engage the flange of the bead with punched holes provided for nailing purposes. (not shown)

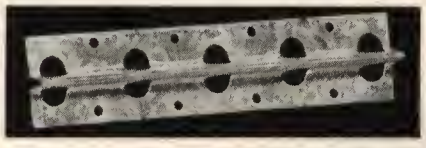


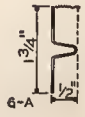
3-A EXPANDED BASE SCREED

Similar to 6-A, but with 2½" flexible expanded flanges for added reinforcement or for attachment to uneven surfaces. Made in 10 foot lengths from 26 gauge galvanized steel.

6-A PLAIN BASE SCREED

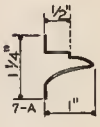
A flush type ½" ground (job shimmed for ¾" grounds), used at the juncture of differing finishes; as between plaster and terrazzo surfaces. Made in 10 foot lengths only from 26 gauge galvanized steel.





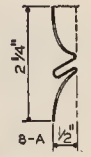
7-A CURVED POINT BASE SCREED

For use where base or wainscot is to project beyond the plastered surface. Made for ½" plaster ground and ½" projection. Length 10 feet—26 gauge galvanized steel.



8-A PICTURE MOULD

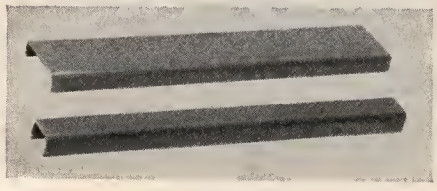
A concealed mould. Attached to lath and plastered flush to the notch opening. Grounds ½"—length 10 feet—26 gauge galvanized steel.



LATHING CHANNELS

Strong, lightweight channel sections used for furring, suspended ceilings, partitions, ornamental lathing, etc. Sizes: ¾" or 1½" deep, 16' or 20' lengths, Weights: ¾", 308 lbs. per M. Lin. ft., 1½", 471 lbs. per M Lin. ft. Made of 16 gauge steel, black asphaltum painted.

(*See next page*)



USG LATHING ACCESSORIES (Cont'd)

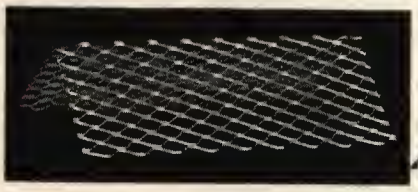
NO. 4 AND NO. 6 METAL CASING

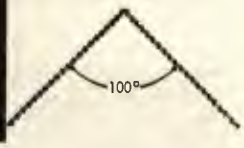
No. 4—Quarter Round

No. 6—O. G.

Used as a plaster stop and ground at window and door openings where this function is not otherwise provided. Two styles available, No. 4 Quarter Round, or No. 6 O.G. (Old Gothic). Lengths 7′, 8′ and 10′. Plaster grounds ¾″ standard; ½″ on order. Made from 24 gauge galvanized steel.

USG CORNERITE AND STRIPLATH





Cornerite is a 4″ or 6″ wide strip of 2.5 lb. DIAMOND MESH lath, copper alloy painted, bent lengthwise in the center, to form a 100° angle, length 96″.

Striplath is a 3″ wide strip of 2.5 lb. DIAMOND MESH lath, copper alloy painted, 96″ long.

Function and Utility

Cornerite should be used on all internal plaster angles as corner reinforcement where metal lath is not lapped or carried around corners; over non-ferrous lath nailed rigidly to supports; over corners of masonry constructions. (Cornerite is optional in Resilient, BRIDJOINT lathing system. If used it is secured to the lath, not the supports.)

Striplath is used as a plaster reinforcement over joints of non-metallic lathing bases. Used with perforated ROCK-LATH* plaster base for ceilings requiring a 1 hour fire rating.

USG CEILING RUNNER

A specially designed steel angle for fastening to the ceiling in order to provide positive anchorage and alignment of ¾″ channels in either solid partition construction or exterior wall furring.

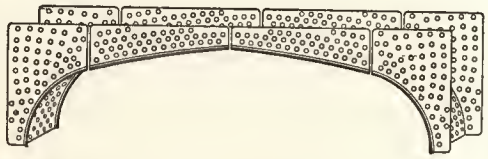
USG GALVANIZED TIE WIRE

A pliable, annealed wire for tieing metal lath; 18 and 16 gauge coils. (8 gauge galvanized annealed coils available for hangers.)

ATTACHMENT CLIPS

Special wire clips designed for attachment of Riblath to top or bottom flanges (1½″ to 4⅝″ widths) of steel joists.

USG METAL ARCHES



DESCRIPTION

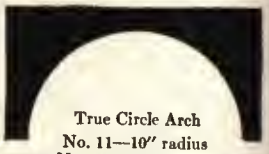
USG Metal Arches are made of galvanized sheet metal, perforated for plaster keying. They are made in three styles: True Circle, Gothic and Elliptic, and in seven sizes. Many variations in size and shape may be obtained by combining different sections of different arches.

FUNCTION AND UTILITY

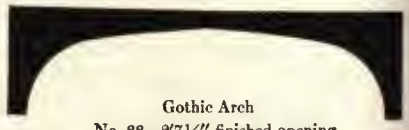
USG Metal Arches are equally suitable for new work or remodeling. They provide a plastering base of symmetry and uniformity that is quick and easy to install.

Metal Arches combine into one unit the plaster base, plaster grounds and corner bead otherwise required in making such arched openings. No special preparation of the rough opening is necessary. The metal arch sections fit perfectly over 2 x 4 studs and any type of lath, or over masonry of similar thickness. Special job conditions are easily handled.

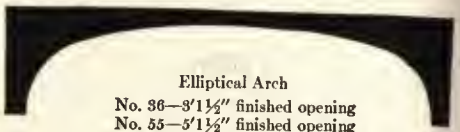
THREE STYLES
SEVEN SIZES



True Circle Arch
No. 11—10″ radius
No. 22—15¾″ radius



Gothic Arch
No. 33—2′7½″ finished opening
No. 44—4′1½″ finished opening



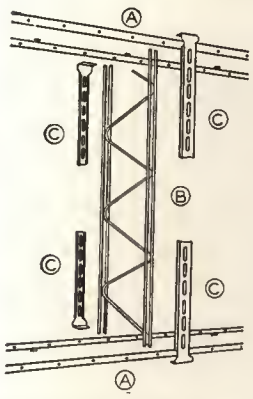
Elliptical Arch
No. 36—3′1½″ finished opening
No. 55—5′1½″ finished opening
No. 66—5′10½″ finished opening

TABLE OF ERECTION DETAILS

Style of Arch	Width of Finished Opening	Dimension from Arch Base to Header	Spacing between Studs or Bucks (Rough Opening)
No. 11	20″	10″	21½″
No. 22	31½″	15¾″	33″
No. 33	31½″	11⅜″	33″
No. 36	37½″	11″	39″
No. 44	49½″	12½″	51″
No. 55	61½″	13″	63″
No. 66	70½″	13″	72″

*Trademark Reg. U. S. Pat. Off.

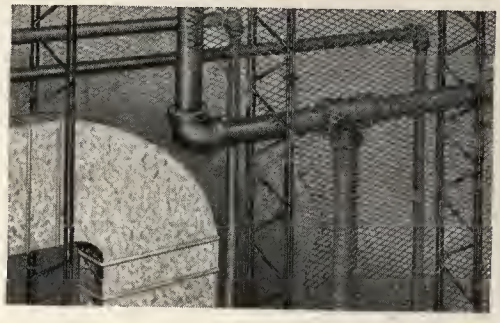
USG TRUSSTEEL* STUDS



DESCRIPTION

This is a truss design stud for the erection of hollow non-load bearing fireproof partitions. Outer chords and diagonal struts are constructed of round rods. As shown in the sketch, the component parts are (A) 24 gauge top and bottom runner tracks, (B) 7 gauge rod studs spot welded at all contact points, (C) attachment shoes for connecting the studs to the runners.

Sizes—Consult technical data below.



FUNCTION AND UTILITY

CONCEALS PIPES AND CONDUITS—The "hollow stud" structure permits concealment of pipes, conduits, air ducts, etc., within the finished wall. Diagonal struts are easily cut to accommodate large ducts.

LIGHT WEIGHT—The finished plastered partition weighs 13 to 17 pounds per square foot of partition, generally less than other partitions of equal thickness.

FIREPROOF—The gypsum plaster over USG Metal Lath protects the studs from "heat distortion," giving a one hour fire rating.

STRONG—Strength of studs is derived from strategic use of metal in a truss design—not on bulk weight. Tests made by recognized authorities on panels of same size, indicated that TRUSSTEEL Studs withstood at least 30 per cent greater transverse loads before failure than 1½" steel channels similarly lathed and plastered.

ADJUSTABLE HEIGHT—Attachment shoes permit an upward adjustment up to 4" for varying ceiling heights.

ECONOMICAL, because—

(a) Material cost is moderate.

(b) Erection is speedy, only ordinary lather's tools required.

(c) Light weight generally permits partition location at any place without special structural framing.

LIMITATIONS

1. USG TRUSSTEEL Studs are designed for non-load bearing partitions only.

2. Partition heights should not exceed the maximum heights in technical data table below.

3. Stud spacing is determined by the type of lath. See spacings in technical data.

TECHNICAL DATA

Stud Width	Finished (1) Wall Thickness	Maximum Partition Height	NATIONAL BUREAU OF STANDARDS FIRE RATINGS (2)		Sound (5) Tronsmission Loss in Decibels
			(3)	(4)	
3¼"	4¾"	16 Ft.	1 hour	2 hours	36.9
4"	5½"	18 Ft.	1 hour	2 hours	36.9
6"	7½"	20 Ft.	1 hour	2 hours	36.9

Approximate plastered partition weight per square foot: 13 lbs. on ROCKLATH, 17 lbs. on Metal Lath.

Stud Lengths: 7' 0" to 20' 0" in increments of 3".

Runner Tracks: 3¼", 4" and 6" widths by 8' 2" long.

Notes:

1. Based on ¾" plaster thickness from face of stud. Mill work should be specified to fit these wall thicknesses.

2. Fire Ratings are as given for such partitions in National Bureau of Standards Report BMS-92.

3. Ratings are for ¾" thick gypsum plaster, sanded 1:2-1:2 applied over Metal Lath. Rating of plaster sanded 1:2-1:3 is 45 minutes for ¾" thickness and 1 hour for ⅞" thickness.

4. Ratings are for ⅞" thick neat gypsum plaster, or, 1" thick gypsum plaster sanded 1:½-1:½, applied over Metal Lath. Neat gypsum plaster 1" thick applied over Metal Lath is accorded a 2½ hour rating.

5. Sound Transmission Loss is as given in National Bureau of Standards Report BMS-17 for such partitions. Figures are for the average of 128 to 4086 cycles.

RECOMMENDED STUD SPACING

Type of Lath	TRUSSTEEL Stud Spacing
2.5 lb. Diamond Mesh Lath	12 Inches
3.4 lb. Diamond Mesh Lath	16 Inches
2.75 lb. ⅛" Riblath	16 Inches
3.4 lb. ⅛" Riblath	19 Inches
3.4 lb. ⅜" Riblath	24 Inches
4.0 lb. ⅜" Riblath	24 Inches
Plain or Perforated ROCKLATH	16 Inches

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USG METAL LATH DATA

TECHNICAL DATA

Type of Lath	Weight per Square Yard	Type of Steel	Size Sheets	Maximum Allowable Spacings				
				Vertical Supports			Horizontal Supports	
				Wood	Metal		Wood or Concrete	Metal
					Solid Partitions	Others (5)		
Diamond Mesh	2.5 lb.	Copper Alloy (1)	27"x96"	16"	16"	12"	(4)	(4)
Diamond Mesh	3.4 lb.	Copper Alloy	27"x96"	16"	16"	16"	16"	13½"
Diamond Mesh	3.4 lb.	Galvanized (2)	27"x96"	16"	16"	16"	16"	13½"
⅛" Z-Rib	2.75 lb.	Copper Alloy	27"x96"	16"	16"	16"	16"	12"
⅛" Z-Rib	3.4 lb.	Copper Alloy	27"x96"	19"	24"	19"	19"	19"
⅜" Rib	3.4 lb.	Copper Alloy	24"x96"	24"	24"	24"	24"	24"
⅜" Rib	4.0 lb.	Copper Alloy	24"x96"	24"	24"	24"	24"	24"
Stuccomesh (3)	1.8 lb.	Copper Alloy	48"x99"	16" (3)				
Stuccamesh	3.6 lb.	Copper Alloy	48"x99"	16" (3)				
¾" Rib Lath		Copper Alloy	10'&12', 2'x8'	See table for ¾" Riblath, page 27.				

All metal lath (except galvanized) is painted with a rust-inhibitive black asphaltum paint.

Notes (1) Copper alloy lath contains from 0.2% to 0.25% pure copper.
(2) Galvanized lath is cut from galvanized sheets.
(3) Stuccomesh generally applied over exterior sheathing.
(4) Not recommended, except for fireproofing of steel shapes.
(5) Including vertical furring.

FIRE TEST DATA
Panel Type

Construction	Type Base	Plaster and Aggregate	Thickness	Rating and Reference
PARTITIONS				
Wood Frame	Expanded Metal Lath	Gypsum-Sand, 1:2, 1:3	¾"	45 Minutes (1)
Wood Frame	Expanded Metal Lath	Gypsum-Sand, 1:2, 1:2	¾"	1 Hour (1)
Wood Frame	Expanded Metal Lath	Gypsum-Sand, 1:2, 1:3	⅞"	1 Hour (1)
Wood Frame	Expanded Metal Lath	Gypsum Wood Fiber	¾"	1½ Hour (1)
Wood Frame	Expanded Metal Lath	Portland Cement-Sand, 1:2, 1:3	¾"	30 Minutes (1)
Wood Frame	Expanded Metal Lath	Portland Cement-Sand, 1:2, 1:3	⅞"	45 Minutes (1)
Wood Frame	Expanded Metal Lath	Portland Cement-Lime-Sand, 1:2:8, 1:2:10	¾"	30 Minutes (1)
Wood Frame	Expanded Metal Lath	Gypsum-Vermiculite 100:2½, 100:3½	¾"	1 Hour (1)
Solid	Expanded Metal Lath	Gypsum-Sand, 1:2, 1:2	2"	1 Hour (3)
Solid	Expanded Metal Lath	Gypsum Wood Fiber	2¼"	2 Hour (1)
TRUSSTEEL Studs	Expanded Metal Lath	Gypsum-Sand, 1:2, 1:3	¾"	45 Minutes (1)
TRUSSTEEL Studs	Expanded Metal Lath	Gypsum-Sand, 1:2, 1:2	¾"	1 Hour (1)
TRUSSTEEL Studs	Expanded Metal Lath	Gypsum-Sand, 1:2, 1:3	⅞"	1 Hour (1)
TRUSSTEEL Studs	Expanded Metal Lath	Gypsum Wood Fiber	⅞"	2 Hour (1)
CEILINGS				
Wood Frame (A)	Expanded Metal Lath	Gypsum Sand, 1:2, 1:3	¾"	1 Hour (1)
Steel Joists (B)	Expanded Metal Lath	Gypsum-Sand, 1:2, 1:3	¾"	2 Hour (1)
Steel Joists (B)	Expanded Metal Lath	Gypsum-Vermiculite, 100:2, 100:3	¾"	3 Hour (1)
Steel Joists (B)	Expanded Metal Lath	Gypsum Wood Fiber	1"	3 Hour (1)
Steel Joists (B)	Expanded Metal Lath	Gypsum-Vermiculite, 100:2, 100:3	1"	4 Hour (1)
Cellular Steel Floor (C)	Expanded Metal Lath	Gypsum Wood Fiber	1"	4 Hour (1)
Cellular Steel Floor (C)	Expanded Metal Lath	Gypsum-Vermiculite, 100:2, 100:3	1"	4 Hour (1)
Suspended Channel (D)	Expanded Metal Lath	Gypsum-Vermiculite, 100:2½, 100:3½	1"	4 Hour (2)
COLUMNS				
Steel	Expanded Metal Lath	Gypsum-Sand, 1:3, 1:3	¾"	1 Hour (1)
Steel (E)	Expanded Metal Lath	Gypsum-Sand, 1:3, 1:3	¾" and ¾"	2½ Hour (1)
Steel (F)	Expanded Metal Lath	Gypsum-Vermiculite, 100:2½, 100:3½	1"	3 Hour (2)

(1) National Bureau of Standards.
(2) Underwriters' Laboratories.
(3) Nationally recognized fire testing laboratory—name on request.
(A) Lath applied with 1½" 11 gauge, 7/16" head barbed roofing nails, 6" o.c.
(B) 2½" reinforced concrete slab on Riblath or 2" precast gypsum tile above.
(C) Ceiling suspended 9" or more below floor slab.
(D) Incombustible construction above.
(E) Two layers of metal lath with ¾" air space between.
(F) Lath furred 1¼" from column with space between lath and flanges filled with plaster.

SOUND TRANSMISSION LOSS—PARTITIONS

2 x 4 wood studs; metal lath; scratch and brown coats of gypsum plaster, smooth white coat on both sides.	39.2 decibels (1)
3¼" TRUSSTEEL Studs; metal lath; scratch and brown coats of gypsum plaster, smooth white coat on both sides.	36.9 decibels (1)
2" solid metal lath and gypsum plaster smooth white coat on both sides.	37.6 decibels (1)

(1) National Bureau of Standards—average 128 to 4096 cycles.

METAL LATH AND LATHING SPECIFICATIONS

(Paragraphs A, B, and C are recommended as basic requirements for all metal lathing specifications. Paragraphs D-1, D-2, etc., apply to the erection of lath for various constructions and only those applicable to the job should be included.)

A. SCOPE

Unless otherwise indicated, all lathing and furring shall be of metal as herein described. (*Or enumerate the areas.*)

B. MATERIALS

Metal lath shall be USG Metal Lath manufactured by United States Gypsum Company, made from copper alloy steel sheets and shall be given a protective coating of rust-inhibitive paint after fabrication.

Where galvanized metal lath is required, it shall be 3.4 Diamond Mesh lath.

The weight of metal lath shall be not less than that required by the current edition of The American Standards Association's "Standard Specifications for Gypsum Plastering," or the printed specifications of the manufacturer for the various spacings of supports.

Metal plastering accessories such as corner beads, base screeds, concealed picture moulds, metal casings, etc., shall be formed of galvanized steel sheets, not less than 26 gauge and manufactured by United States Gypsum Company.

Channels for furring shall be cold rolled steel channels having a protective coating of rust-inhibitive paint, manufactured by United States Gypsum Company. Channels shall not exceed the limitations of span as set forth in current issue of A.S.A. specifications or the manufacturer's printed limitations.

Metal studs shall be TRUSSTEEL studs, manufactured by United States Gypsum Company, formed with not less than 7 gauge wire and shall be given a protective coating of rust-inhibitive paint. Stud sizes shall be as indicated on the drawings.

Tie wire shall be 18 gauge soft annealed galvanized tie wire, unless otherwise indicated. Cornerite and Striplath shall be manufactured from 2.5 lb. Diamond Mesh lath, copper alloy, having a coating of rust-inhibitive paint and manufactured by United States Gypsum Company.

C. ERECTION OF METAL LATH

Metal lath shall be applied with the long dimension of the sheet across the supports; Riblath with ribs against the supports.

The ends of all lath shall be lapped not less than 1″ and the laps shall occur over the supports.

The sides of Diamond Mesh Lath shall be lapped not less than ½″. The sides of Riblath shall be lapped by nesting outside ribs. Side laps shall be secured to every support unless otherwise specified, and shall be wire-tied between supports not to exceed 9″ intervals.

All metal lath shall be started at one support away from the corner and be bent into the corner and carried on to the abutting wall to avoid a joint in the corner; provided that where ⅜″ Riblath is used, it shall be butted into the corners and Cornerite shall be applied over the abutting lath and wired at 6″ intervals along each edge in corners; Cornerite shall be tie-wired along the edge only, not in the corner. All metal lath shall be placed so that the lower sheet overlaps the upper.

Corner beads, base screeds, picture moulds, etc., shall be positioned by securely wiring to the metal lath, at not less than 12″ intervals. Attachment to masonry or other solid construction shall be secured by nailing at intervals of not less than 12″. ½″ concrete stub nails shall be used for attachment to concrete. Wood grounds shall be set true to line to provide not less than ⅝″ thickness of plaster over the metal lath and securely wired or nailed into place.

SUPPLEMENTARY SPECIFICATIONS FOR SPECIFIC APPLICATIONS

D-1. Nailing to wood supports. Metal lath shall be secured to framing at intervals not to exceed 6″ o.c. by one of the following methods:

For side walls, 4d common nails driven to ¾″ penetration and bent over to engage at least 3 strands of Diamond Mesh lath or a rib of Riblath; 1″ roof nails, 7/16″ head, driven home to engage at least 2 strands of Diamond Mesh or through the rib of Riblath; 1″ 14 gauge wire staples, driven home without crushing the lath strands and engaging at least 2 strands of Diamond Mesh lath or the rib of Riblath; except that ⅜″ Riblath shall be secured with nails or staples having sufficient length to engage the rib and provide a ¾″ minimum penetration.

Diamond Mesh and ⅛″ Riblath shall be secured to ceiling framing with 1½″ 11 gauge barb roofing nails with 7/16″ head, to engage at least 2 strands of Diamond Mesh or through the rib of ⅛″ Riblath. ⅜″ Riblath shall be secured with nails or staples that provide at least 1⅜″ penetration.

D-2. Metal lath tied and nailed to joists. (Recommended where undue vibration is expected and for additional safety.)

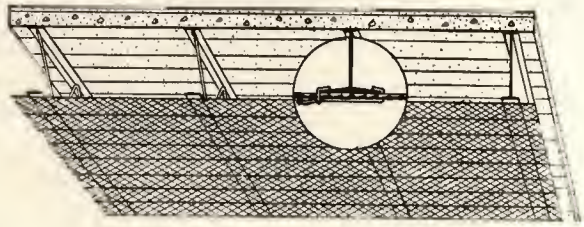
16d common nails spaced 24″ or 27″ o.c. depending upon width of lath, shall be driven horizontally through alternate joists at least 2″ above the lower edge; the point and head to project equally from the sides of joist.

Metal lath shall be secured to wood joists in the manner described for Nail-on work, but in addition, the metal lath side laps shall be secured to the nails with 2 strands of 18 gauge tie wire, providing at least 3 twists around the lath.

METAL LATH AND LATHING SPECIFICATIONS

SUPPLEMENTARY SPECIFICATIONS FOR SPECIFIC APPLICATIONS (cont.)

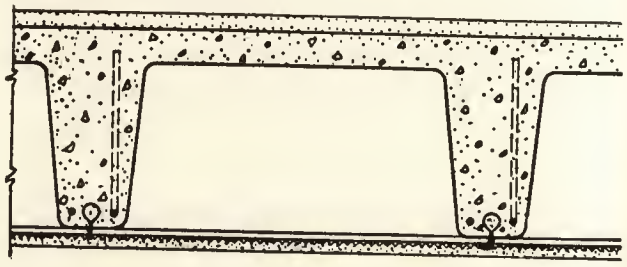
D-3. Metal lath secured to steel joists. Metal lath shall be secured to the lower chord of steel joist with 2 strands of 16 gauge tie wire or 4 strands of 18 gauge tie wire at intervals not to exceed 6″ o.c. or with special galvanized attachment clips. Free ends of tie wire shall be given at least 3 twists.



D-4. Metal lath attached to rib concrete construction. Hangers for attaching metal lath directly to underside of concrete ribs (approximately 25″ on centers) shall be placed in forms before concrete is poured and shall consist of hairpin, hook, loop hangers or other inserts and shall be provided with a loop or similar deformation for embedment in the concrete. Hangers shall be not less than 14 gauge galvanized annealed wire when twisted as in tie wire and not less than 10 gauge galvanized wire when struck over to support the lath. Spacing of hangers shall not exceed 5″ along bottom of ribs.

Where ribs are spaced more than 25″ on centers, 12 gauge galvanized wire hangers shall be placed through the center of the top surface of the forms at 36″ centers and looped to engage the concrete. These hangers shall support ¾″ cold rolled channels running parallel to and between ribs.

Metal lath shall be secured to the concrete ribs by twisting the 14 gauge hangers as for tie wire or by clinching 10 gauge hangers. For ribs spaced more than 25″ on centers, lath shall also be tied to channels with 2 strands of 18 gauge tie wire at intervals not to exceed 6″.

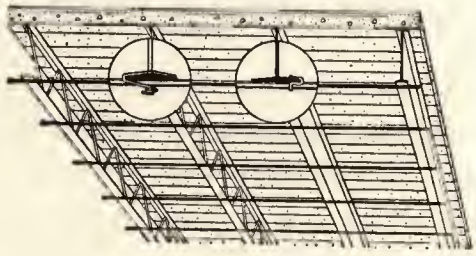


D-5. Furred ceiling on wood joists. 16d common nails, spaced to conform to spacing of furring members, shall be driven horizontally through each joist at least 2″ above the lower edge; the point and head to project equally from the side of joist.

Channel or rod furring shall be attached, at right angles to joists, flush against the bottom edges by securely wire-tieing the furring to each nail with not less than 4 strands of 18 gauge tie wire, saddle-tied. Metal lath shall be attached to the steel furring with tie wires at intervals not to exceed 6″.

D-6. Furred ceiling on steel joists. Furring members shall be ¾″ cold rolled channels and shall not exceed a spacing of (*select spacing from table, page 9*), and shall be erected at right angles to the steel joists. They shall be securely attached to the bottom chords with 2 strands 16 gauge or 4 strands 18 gauge galvanized wire or other approved attachment of equal strength.

Metal lath shall be attached to steel furring with wire ties at intervals not to exceed 6″.

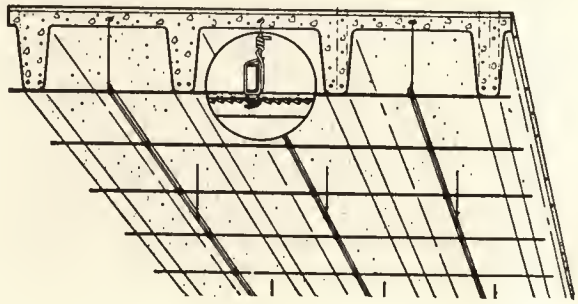


D-7. Furred ceiling on rib concrete construction. For concrete ribs centered at approximately 25″, channel runners shall be supported against bottom of ribs by hangers of two 14 gauge galvanized wires, or other hangers of equal strength with looped ends embedded at least 2″ within the concrete. Hangers shall be placed in forms before concrete is poured and spaced 36″ on centers, to engage ¾″ channels running parallel to the ribs. Hangers shall be securely saddle-tied or wrapped around the channels.

Cross furring members shall be saddle-tied to the channel runners with 2 strands of 16 gauge galvanized tie wire at each intersection.

Metal lath shall be secured to the cross furring with tie wires at intervals not to exceed 6″.

For concrete rib spacings greater than 25″ on centers hangers shall be two strands of 12 or one strand of 10 gauge galvanized wire supporting not more than 12 sq. ft.; two 11 gauge or one 8 gauge galvanized wire supporting not more than 16 sq. ft. of ceiling area.



METAL LATH AND LATHING SPECIFICATIONS

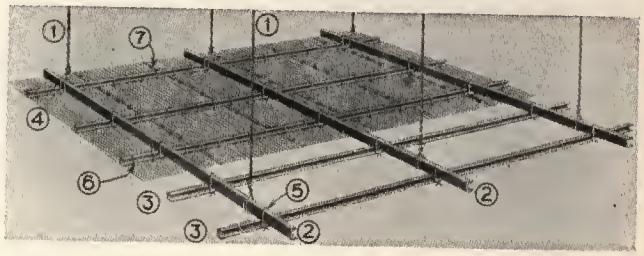
SUPPLEMENTARY SPECIFICATIONS FOR SPECIFIC APPLICATIONS (Cont.)

D-8. Suspended metal lath ceilings. Hangers (1) shall be No. 8 gauge galvanized wire, 3/16" round mild steel rods or 1" x 3/16" flat mild steel straps; spaced not to exceed 4' both directions; and shall support no more than 16 square feet of ceiling area. The use of special inserts may be used subject to the architect's approval.

Hangers shall be of ample length. Hangers (without inserts) shall be secured to steel reinforcement in concrete with cinder aggregate and shall be either secured to steel reinforcement or looped and embedded 2 inches in concrete with other types of aggregates.

1½" cold rolled channels (2) shall be attached to wire or rod hangers by means of a saddle tie, or 3 twists of hanger around the channel. In lieu of wire or rod hangers, flat steel hangers shall be secured to runner channels and inserts with 3/8" diameter bolts, the punched hole to be not less than 3/8" from ends of hanger. Runner channels shall be placed true and level and properly positioned for the indicated ceiling height.

¾" furring channels (3) shall be securely saddle-tied to the 1½" runner channels by 2 strands of 16 gauge tie wire (5) at each intersection.



Metal lath (4) shall be secured to the furring channels by tie wires (6) at intervals not to exceed 6". Side laps shall be wire-tied (7) between supports at intervals not exceeding 9". The spacing of the furring channels shall be (*select from table below*) and the weight of lath shall be (*select type and weight from table on page 6*).

Where hangers support more than 16 sq. ft. but not more than 25 sq. ft., use 1" x 3/16" flats spaced not more than 5' o.c. Main furring runners shall be not less than 2" hot rolled channels.

D-9. Metal lath vertical furring.

Attachments shall consist of nails driven securely into concrete or into masonry joints, or short pieces of ¾" channels used as anchors driven into masonry joints. They shall be spaced not to exceed two feet on center, horizontally, and in accordance with the spacing of horizontal channels, vertically, and shall project a proper distance from the face of the wall to permit ties to be made.

Note: Where damp-proofing has been damaged, in installation of attachments, it shall be pointed with the same material before proceeding with the installation of the furring.

Horizontal members shall be not less than ¾" cold-rolled channels. They shall be spaced not to exceed 4'6" on center with the lower and upper channels not more than 6" from the floor and ceiling, respectively, and not less than ¼" from the face of the wall. They shall be securely tied to attachments with 3 strands of 18 gauge galvanized soft annealed wire, or equivalent devices.

Vertical members shall be not less than ¾" cold-rolled channels. They shall be spaced (*specify according to table below*). They shall be securely saddle-tied to horizontal members with 3 loops of 18 gauge galvanized soft annealed wire, or equivalent devices, at each crossing, and securely anchored to the floor and ceiling construction. Where furring is a considerable distance from the face of the wall, channel braces to the wall shall be provided approximately 2 feet on center, and, where the height exceeds 16 feet, special truss bracing shall be provided to prevent concentration of load on the floor construction.

Note: Special devices which are the equivalent of, or better than, the nail or channel attachments may be used in lieu thereof.

SIZE AND SPACING OF FURRING MEMBERS

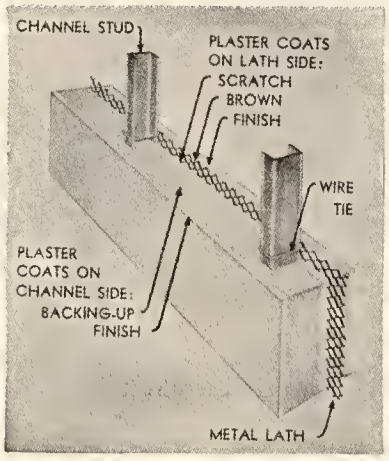
Spacing of Main Runners (Also Steel Joists)	Size and Type of Cross Furring	Maximum Spacing of Furring
Up to 2 Feet	¼" Pencil Rods or ¾" Channels	12"
Up to 2 Feet	3/8" Pencil Rods or ¾" Channels	19"
Up to 2 Ft. 6 In.	3/8" Pencil Rods or ¾" Channels	12"
Up to 3 Feet	¾" Cold Rolled Chonnels	24"
Up to 3 Ft. 6 In.	¾" Cold Rolled Chonnels	19"
Up to 4 Feet	¾" Cold Rolled Channels	16"

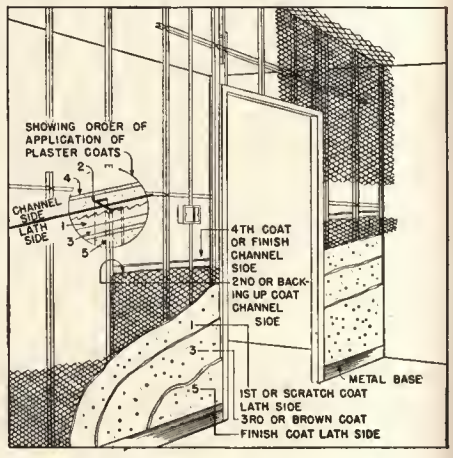
See Technicol Doto, page 6, for type ond weight of loth.

2" SOLID METAL LATH AND PLASTER PARTITION

DESCRIPTION

A non-load bearing partition of metal lath, channels and plaster that finishes to an overall thickness of 2".





FUNCTION

Space saving. Saves 40 to 60% of the space occupied by conventional partitions. In every five lineal feet, a 2" partition creates one extra square foot of useable space over a 4½" partition.

Light weight. Eighteen pounds per partition square foot. Compared to more conventional partitions there is a dead load saving of as much as 30 per cent. Saves structural steel.

Fire resistance. Accorded a one hour fire rating by tests conducted by a nationally recognized fire testing laboratory (name on request). See table of fire ratings on page 6.

Crack resistance. Metal lath as a stcel reinforcing, provides structural strength. Such partitions have performed remarkably well when subjected to earthquakes and explosions.

Sound transmission rating. 37.6 decibel transmission loss (average of 128 to 4096 cycles) as given in National Bureau of Standards Report BMS-17.

TECHNICAL DATA

Height of Partition	Thickness of Partition	Size of Channel Stud	Permissible Length of Partition
Up to 12′	2″	¾″	No Limitation
Up to 14′	2″	¾″	24 Ft.
Up to 16′	2¼″	¾″	32 Ft.
Up to 18′	2½″	¾″	27 Ft.
Up to 20′	2¾″	¾″	30 Ft.
Up to 24′	3″	1½″	36 Ft.
Up to 30′	3½″	1½″	30 Ft.

Spacing of Studs	Lath Recommended
16″	2.5 lb. Diamond Mesh
16″	3.4 lb. Diamond Mesh
16″	2.75 lb. ⅛″ Riblath
24″ (1)	3.4 lb. ⅛″ Riblath
24″	3.4 lb. ⅜″ Riblath
24″	4.0 lb. ⅜″ Riblath

(1) This stud spacing permissible for partition heights not exceeding 16 feet. For greater heights, permanent horizontal stiffener channels must be secured to channel side of partition every 6 feet vertically, or spacings shall be reduced 25 percent.

SPECIFICATIONS

MATERIAL

Channel studding shall be not less than ¾" cold rolled channels and metal lath shall be (*as selected from table above*), manufactured by United States Gypsum Company.

LATHING

Contractor shall make accurate location layout of partitions according to plan. Channel studding shall be spaced (*as selected from table above*), and attached to the floor and ceiling with USG Stud Shoes and Ceiling Runner, or by other approved attachments or methods.

Where two-piece studs are necessary, they shall be spliced within 2 feet of ceiling by lapping not less than 8", with flanges interlocked and securely wired in at least two places not less than 6" nor more than 12" apart.

A double channel stud, continuous from floor to ceiling, shall be used adjacent to and at each side of door bucks. Where metal door bucks are used, the double channel stud shall be wire-tied to bucks in a secure manner. Where wood bucks are used, two 8d nails shall be driven, in pairs, into the wood buck, at intervals of 2 feet, beginning 9" above floor and the double channel studs securely wire-tied to the nails.

A horizontal reinforcing (⅛" to 1¼" flat iron or ⅜" diameter rod) shall be attached 6" or 8" above top of door to the channel side and extend continuously past the double stud and just beyond the first single stud at each side. This reinforcement shall be saddle-tied to each vertical stud it crosses.

Also include GENERAL SPECIFICATIONS, B, C, AND D.

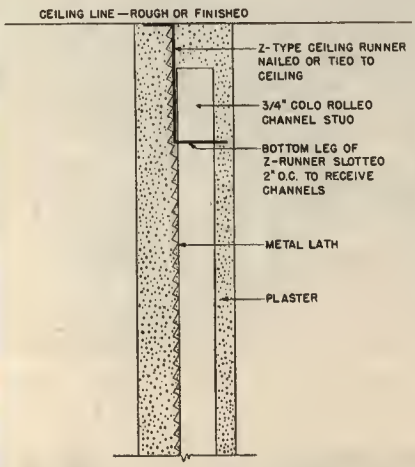
Lath sheets shall be secured to channel studs by a double strand of 18 gauge galvanized tie wire at 6" intervals.

PLASTERING (APPLICATION)

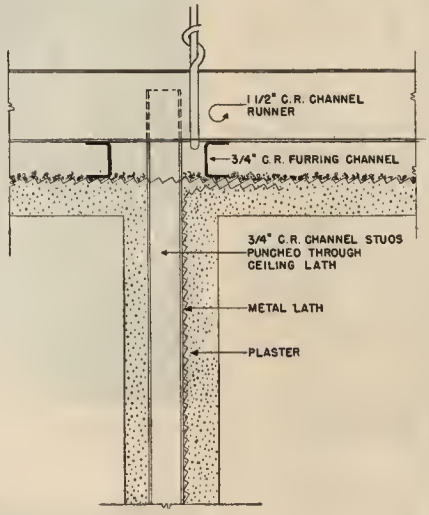
Plastering shall be of 5 coats to a total overall thickness of 2". First, scratch coat on lath side; allow to set and dry. Second, back-up coat on channel side applied to full grounds in not less than two operations. Third, brown coat on lath side. Fourth and fifth, finish coat on each side.

Temporary bracing of studs shall be furnished on the channel side of the partition and maintained until the scratch coat on the lath side has set.

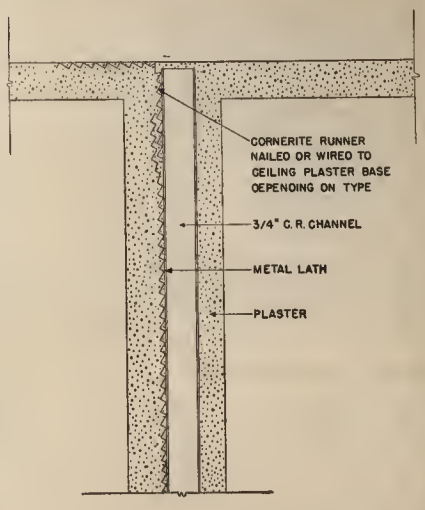
2" SOLID METAL LATH AND PLASTER PARTITION



Z-TYPE CEILING RUNNER

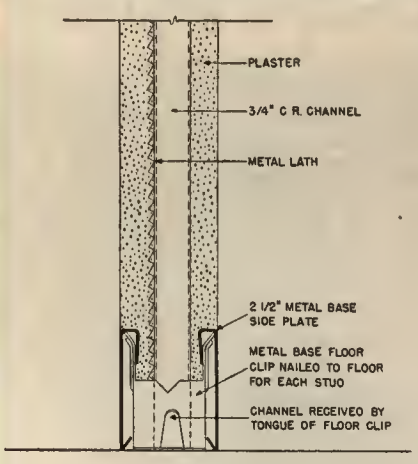


METAL LATH CEILING

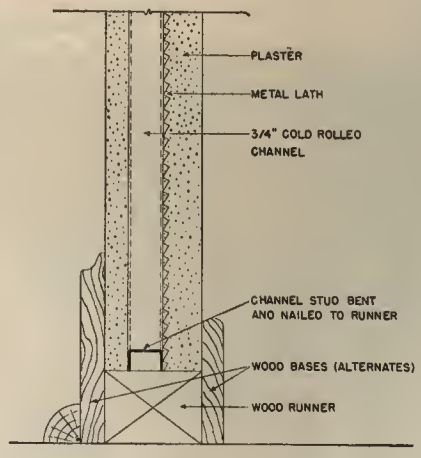


CORNERITE SHOE ON CONCRETE OR ROCKLATH CEILING

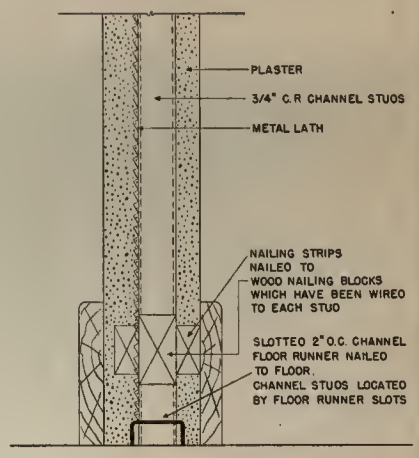
CEILING ATTACHMENTS



FLUSH TYPE METAL BASE



WOOD RUNNER AND WOOD BASE



PUNCHED CHANNEL FLOOR RUNNER AND WOOD BASE

FLOOR ATTACHMENTS

USG METAL BASE

FOR 2″ SOLID LATH AND PLASTER PARTITIONS

DESCRIPTION

A metal base system for partitions or walls composed of floor clips or masonry wall clips and steel side plates 2½″ high (18 or 20 gauge, primed with a rust inhibiting paint).

A friction-tension grip holds the side plates to the floor clips until the unit is grouted. The assembly of two side plates to one floor clip (double clip) provides a 2″ wide base assembly for 2″ solid plaster partition using either metal lath or ROCKLATH as the plaster base (see page 10 describing 2″ solid ROCKLATH partition, or page 22, this folder, describing 2″ solid metal lath partition). The assembly of only one side plate to a single type clip provides a base unit for either a single faced partition or for wall furring. A base unit for masonry walls that are to be plastered, such as PYROBAR,* is provided by attaching the masonry wall clip to one piece of side plate and then nailing or tieing through the clip into the masonry wall.

FUNCTION AND UTILITY

USG Metal Base is used to produce in one economical unit, a flush type steel base for partitions or other walls; a means of partition alignment; and a plaster ground.

Its design permits installation on any type of rough or finished floor. The ears of the floor clips engage the top flange of the side plates, permitting the side plates to independently and automatically adjust to uneven and irregular floors.

The assembled metal base unit for 2″ solid partitions must be solidly grouted with a plaster and sand grout. For 2″ solid ROCKLATH and plaster partitions a V-shaped groove must be made in the grouted base unit before the grout hardens. This groove centers the ROCKLATH before plastering. For 2″ solid metal lath and plaster partitions the base unit is grouted *after* the channel studs have been erected and *either before or after* the metal lath has been wired to the studs.

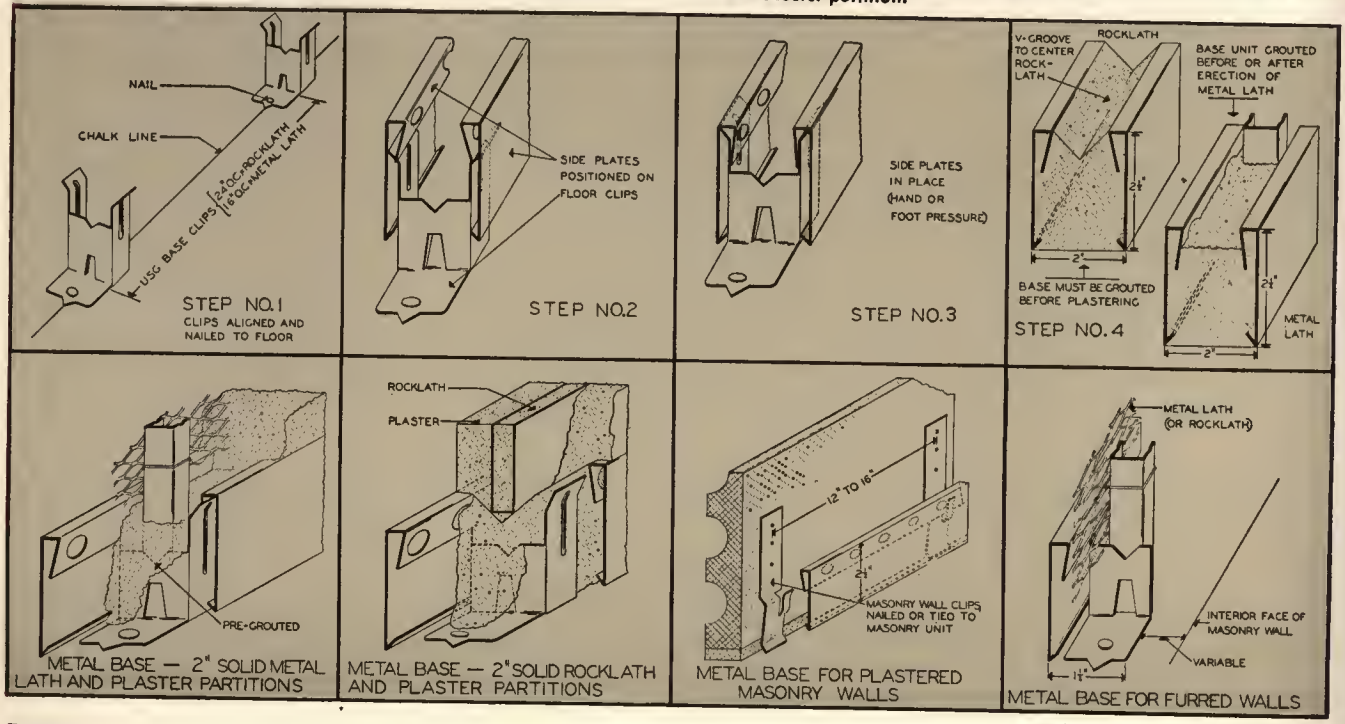
The side plates can be easily bent to form corners by notching the flanges. Side plates can be made continuous from one type of wall construction to another (e.g. From interior 2″ solid partitions to exterior furred walls); ends of side plates are butted and internally spliced to make these continuous runs.

After the partition or wall has been plastered, the external faces of the side plates are exposed.

This type of base adds no combustible materials to the construction and affords protection to the base of the partition.

Channel Studs erected, USG metal base grauted; ready for metal lath and plaster.

Cut-aways show use of USG metal bose in 2″ Solid ROCKLATH ond Ploster portition.



*Trademark Reg. U. S. Pat. Off.

METAL LATH RESILIENT PLASTERING SYSTEM

DESCRIPTION

A system composed of metal lath, steel furring members and spring clips that provides a non-rigid or floating attachment of plastered surfaces to structural members.

FUNCTION AND UTILITY

1. Provides greatly increased protection against plaster cracking due to structural movement.
2. The system assures all the advantages of metal lath construction such as adequate grounds, flexibility and absence of streaking.
3. The resilient character of the clip provides a considerable reduction in the transmission of sound through walls or ceilings.
4. Adaptable to wood supports, suspended ceilings, hollow partitions and masonry or concrete surfaces.

SPECIFICATIONS

Scope

The USG Metal Lath Resilient System shall be provided where shown on plans or indicated in specifications.

Lathing Materials—Lathing materials shall be USG Metal Lath and USG cold rolled channels.

USG resilient clips shall be:

1. No. 100 for suspended ceilings, spacing of furring channels not to exceed 16″ center to center.
2. No. 200 for wood joists; spaced 12″ along joists and attached with 4d common nails. Wire a ¼″ pencil rod to the inside of tongue on the clip.
3. No. 200 for wood studs; spaced 16″ along studs, then follow procedure as for wood joists.
4. For wood furring strips where face nailing is required, proceed same as for wood studs, except substitute No. 300 Resilient Clip for No. 200. Do not use No. 300 for ceilings.
5. For use on TRUSSTEEL Studs use No. 400 Resilient Clips spaced 16″ along stud. Wire a ¼″ pencil rod into the notch on the outside flange of the clip.
6. For masonry walls and concrete ceilings, use No. 500 Resilient Clip. Attach clip to gypsum tile with 2″ staples. Attach to brick or clay tile with 10d cut nails. Attach to concrete ceiling with 9 gauge wire placed in position before concrete is poured, wire extending at least 1½″ below concrete surface. Three-quarter-inch USG Cold Rolled Channels shall be wired to the inside of the tongues of the clips with the webs of the channels away from the lath.

Spacings of No. 500 Clips shall be as follows:

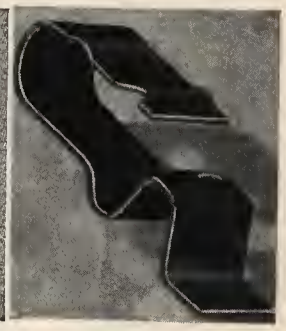
SPACING OF FURRING CHANNELS	SPACING OF No. 500 CLIPS
12″	24″
16″	18″
19″	15″
24″	12″

Resilient Clip No. 100

Resilient Clip No. 200

Resilient Clip No. 300

Resilient Clip No. 400



Resilient Clip No. 500

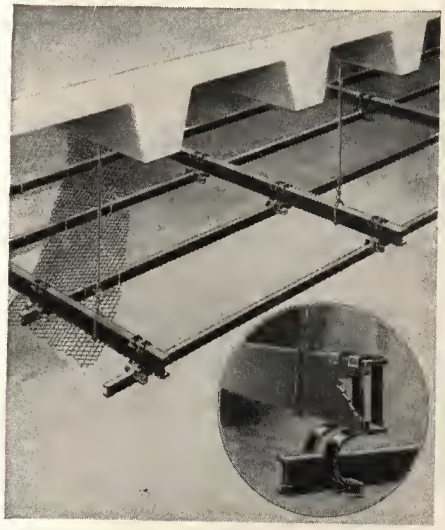


Figure 1
SUSPENDED CEILING. Showing applicatian of No. 100 Clip for suspended ceiling constructian. The clip provides resilient attachment of furring channel ta runner channel by replacing use of the tie wire. Easy to erect.

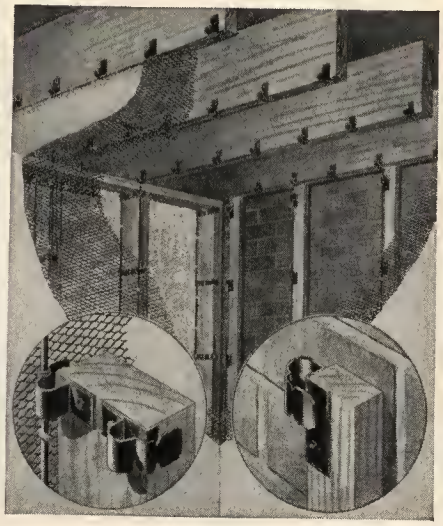


Figure 2
WOOD FRAME CONSTRUCTION. Shawing application of Na. 200 Clip an wood studs and jaists and Na. 300 Clip an wood furring an masonry walls. Clips pravide resilient attachment af metal lath and pratect ploster finish.

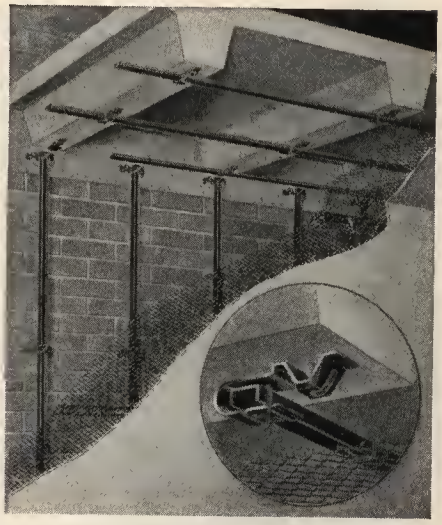


Figure 3
MASONRY SURFACES. Shawing use of Na. 500 Clip on ceiling under concrete jaist and an masonry walls. Clip is alsa used an ather masanry surfaces. Provides furring and resilient attachment af metal lath.

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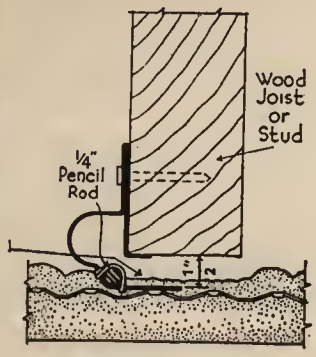
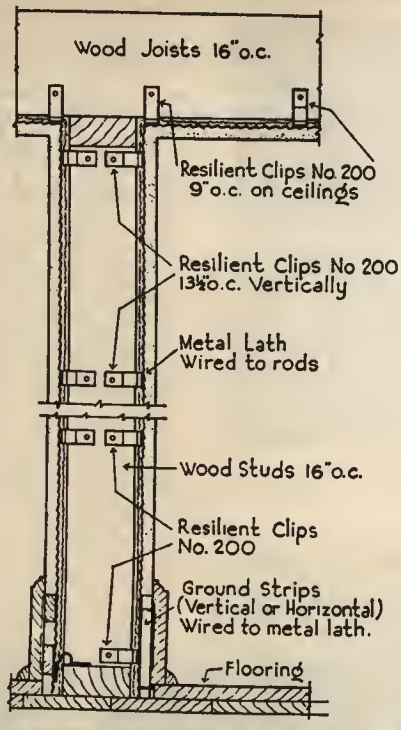
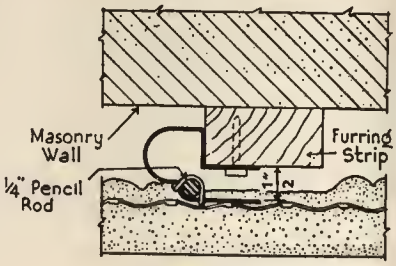
METAL LATH RESILIENT PLASTERING SYSTEM



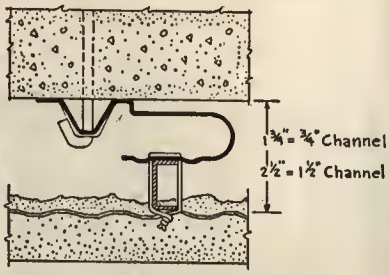
CLIP No. 200



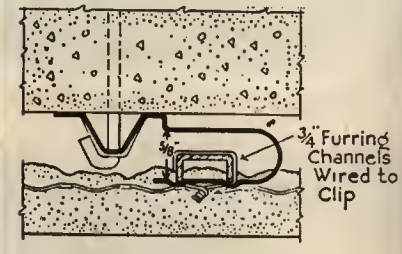
WOOD CONSTRUCTION



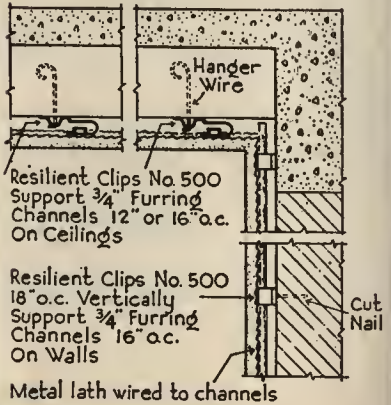
CLIP No. 300
For Wood Furring on Masonry Construction



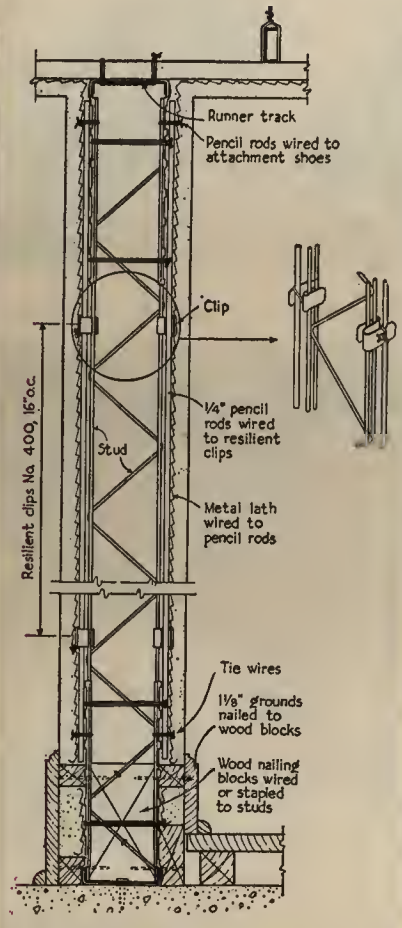
Clip No. 500 as a Wall Furring Device



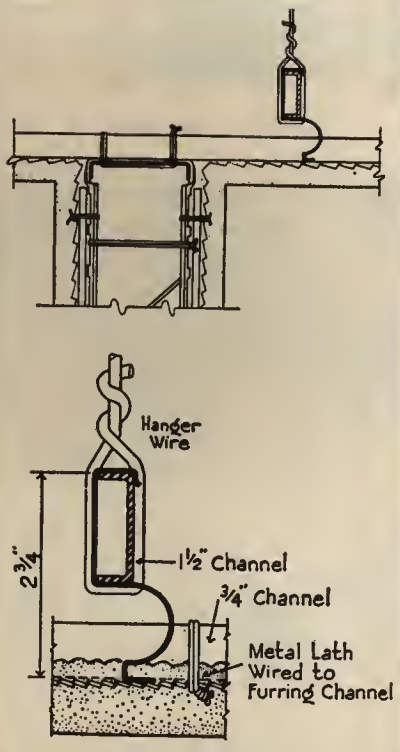
CLIP No. 500



MASONRY CONSTRUCTION



CLIP No. 400
TRUSSTEEL STUD PARTITION



CLIP No. 100
For Suspended Ceilings

USG METAL LATH

3/8" AND 3/4" RIBLATH FOR CONCRETE SLAB REINFORCING

These heavy types of expanded metal lath are recommended for use as a combined form and reinforcing for light weight short span concrete slabs. The spacing of beams, the thickness of the slab and the safe load required will determine whether 3/8" or 3/4" Riblath shall be used. Consult data below.

LOADING TABLES FOR 3/8" RIBLATH

Thickness of Slab Above Mesh	Wt. of Concrete (Lbs. Per Sq. Ft.)	Wt. of Loth (Lbs. Per Sq. Yd.)	SAFE SUPERIMPOSED LOADS (Lbs. Per Sq. Ft.) SPAN IN INCHES			
			12	16	19	24
2"	24	3.4	950	536	380	238
2"	24	4.0	1090	613	433	271
2½"	30	3.4	1200	675	479	300
2½"	30	4.0	1360	766	544	340
3"	36	3.4	1450	815	578	362
3"	36	4.0	1650	930	625	412

LOADING TABLES FOR 3/4" RIBLATH

Thickness of Slab Above Mesh	Wt. of Concrete (Lbs. Per Sq. Ft.)	Wt. of Loth (Lbs. Per Sq. Ft.)	Max. Span for Cent. Wet Concrete	SAFE SUPERIMPOSED LOADS (Lbs. Per Sq. Ft.) SPAN IN FEET					
				3	4	5	6	7	8
2"	24	.60	3' 3"	413	220	130	81	51	32
		.75	3' 7"	516	277	167	107	70	47
2½"	30	.60	2' 11"	536	286	170	107	69	44
		.75	3' 3"	669	361	218	140	93	63
3"	36	.60	2' 8"		353	211	133	87	57
		.75	2' 11"		445	270	174	117	80
3½"	42	.60	2' 5"		420	251	160	105	69
		.75	2' 9"		530	322	209	141	96
4"	48	.60	2' 3"		487	292	187	123	81
		.75	2' 6"		616	374	243	164	113

SPECIFICATIONS

Metal lath for concrete reinforcing over steel beams shall be USG (3/8") (3/4") Riblath as supplied by United States Gypsum Company.

Riblath sheets shall be placed over and across the steel beams with the rib upward. Edge ribs of adjacent sheets shall occur over beams and shall lap at least one inch. Lath sheets shall be attached to flange of beam with special wire attachment clips, or other approved devices.

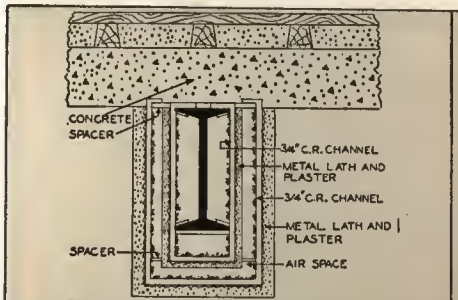
BEAM AND COLUMN FIREPROOFING SPECIFICATIONS

Metal lath shall be of 2.5 lb. copper alloy Diamond Mesh lath, manufactured by United States Gypsum Company.

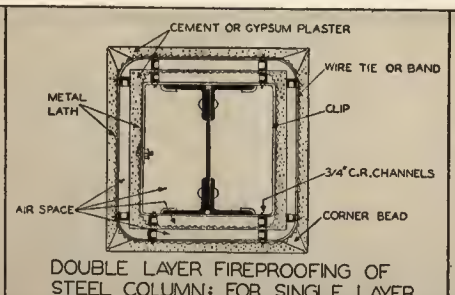
Framework to the contour and size shown on drawings shall be constructed of 3/4" cold rolled channels, or of 3/16" x 1" mild steel flats, or 1/4" round mild steel rods, or of combinations of each as approved by the architect. In no case shall the spacing of any steel bracket member exceed 12 inches unless they are cross-furred with 3/4" channels, in which case brackets shall not exceed 3' o.c.

Wire tieing of brackets to structural members shall be of not less than 14 gauge galvanized wire, using saddle tie, or of 6 strands of 18 gauge galvanized tie wire. Rods may be tied to brackets with 18 gauge galvanized tie wire.

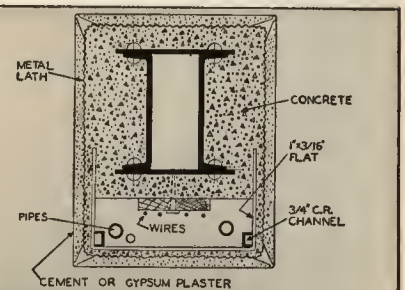
Diamond Mesh metal lath shall be shaped to approximate contour and attached to the framework with 18 gauge galvanized tie wire at 6" intervals, and at closer intervals where necessary to hold the lath in place.



FIREPROOFING OF STEEL BEAMS UNDER CONCRETE FLOORS.



DOUBLE LAYER FIREPROOFING OF STEEL COLUMN; FOR SINGLE LAYER OMIT OUTER FURRING CHANNELS, LATH, AND PLASTER.



PROTECTION OF METAL COLUMN WITH PROVISION FOR PIPE CHASE

(For fire resistance ratings of above detailed constructions, refer to page 39, National Bureau of Standards report BMS-92.)

PYROBAR* PARTITION TILE

DESCRIPTION

PYROBAR is a precast gypsum partition, or furring tile. It is made in various thicknesses, both solid and hollow, with indented surfaces to receive plaster.

Sizes—see technical data below.

Complies with ASTM Designation C52-41 and Federal Specification SS-T-316.

FUNCTION & UTILITY

FIREPROOF—gypsum is incombustible and will not communicate high temperatures until completely calcined, a very slow process. Fire resistance ratings shown in technical data below.

LIGHT WEIGHT—saves structural steel—generally 30% to 50% lighter than other masonry partitions of like thickness. Unit weights shown in technical data below.

PLASTER BOND—Authoritative tests show that gypsum plaster bonds to PYROBAR Partition Tile with factor of safety of 173.

SAVES PLASTER—the large size, machine moulded units lay accurately to a straight line. Grounds are ½" instead of ⅝" or ¾" for other masonry partitions.

RESISTANT TO SOUND TRANSMISSION—see technical data below.

LOW IN COST BECAUSE:

(a) Material cost is low.

(b) The large units (2½ sq. ft. surface area) lay into wall fast, thus reducing labor costs.

(c) Lightness in weight reduces labor costs.

(d) Fewer joints, saves mortar up to 40%.

(e) Ease of cutting reduces waste, and lowers cost of alterations or remodeling.

(f) Requires 20% less plaster than masonry units requiring ⅝" grounds.

LIMITATIONS OF USE

1. PYROBAR, although having a considerably higher compression strength than 75 lbs. per sq. inch gross area as required by ASTM Designation C-52-41, is designed for non load-bearing partitions and should not be used for load bearing construction.

2. Portland cement and lime mortars do not bond adequately with PYROBAR and should not be used for erecting PYROBAR. Use RED TOP* Gypsum Cement Plaster for plastering and RED TOP Partition Tile Cement for mortar. See specifications, page 30.

3. For the reason given above, portland cement or lime plasters should not be used over PYROBAR. Before applying portland cement bedding for ceramic tile, metal lath shall be nailed to PYROBAR. Alternately, other types of masonry, such as structural clay tile may be used as backing for ceramic tile.

4. PYROBAR should not be used as a base, or starter course, where excessive water or moisture is expected. Use clay tile or cement block as a starter course 12" high.

TECHNICAL DATA FOR GYPSUM PYROBAR PARTITION TILE

SIZE OF PYROBAR PARTITION TILE	Limiting Partition Height	Weight per Sq. Ft.		Partition Tile Cement Required Per M Sq. Ft. Tile	Avg. Sound Transmission Lass in Decibels Plaster 2 Sides	Underwriters' Labaratary Fire Ratings
		Partition Weight No Plaster	Partition Weight (1) Plastered			
2" x 12" x 30" Solid	10 ft.	11.5 lbs.	20.5 lbs.	400 lbs.		1 hr. (na plaster)
3" x 12" x 30" Hollow	13 ft.	12.0 lbs.	21.0 lbs.	560 lbs.	38.1 Db. (2)	2 hrs. (Plas. 2 sides)
4" x 12" x 30" Hollow	17 ft.	15.5 lbs.	24.5 lbs.	760 lbs.		3 hrs. (Plas. 2 sides)
6" x 12" x 30" Hallaw	30 ft.	22.0 lbs.	31.0 lbs.	1120 lbs.		5 hrs. (Plas. 2 sides) (3)

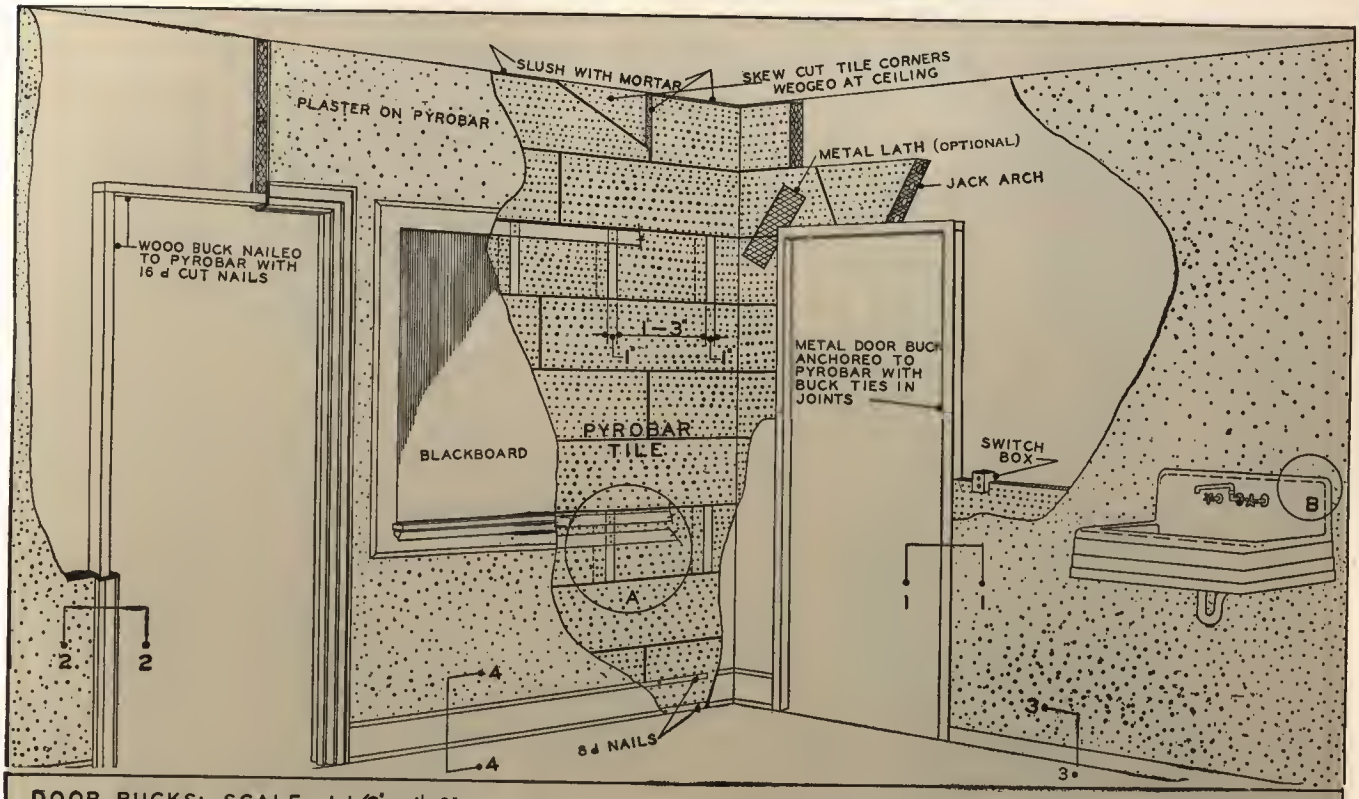
(1) Plastered partition weights include plaster on both sides of solid and hollow tile.

(2) When furred, one side only, with USG* No. 500 Resilient Clips supporting metal lath and plaster (other side plastered direct), average transmission lass is 52.7 decibels. See BMS Repart 17, National Bureau of Standards.

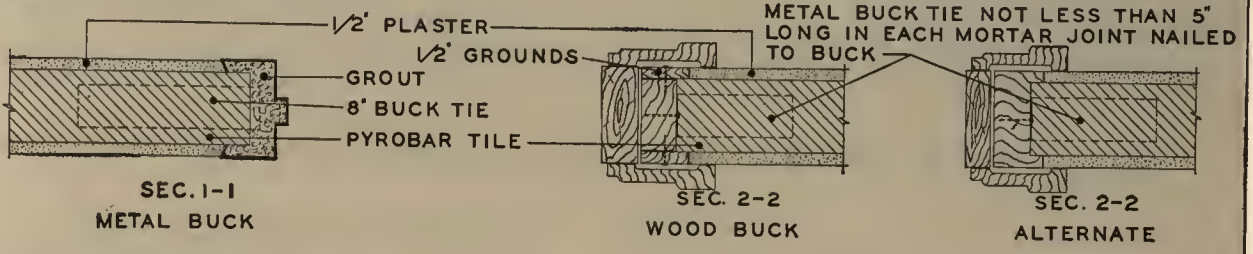
(3) Calculated.

*Trademarks Reg. U. S. Pat. Off.

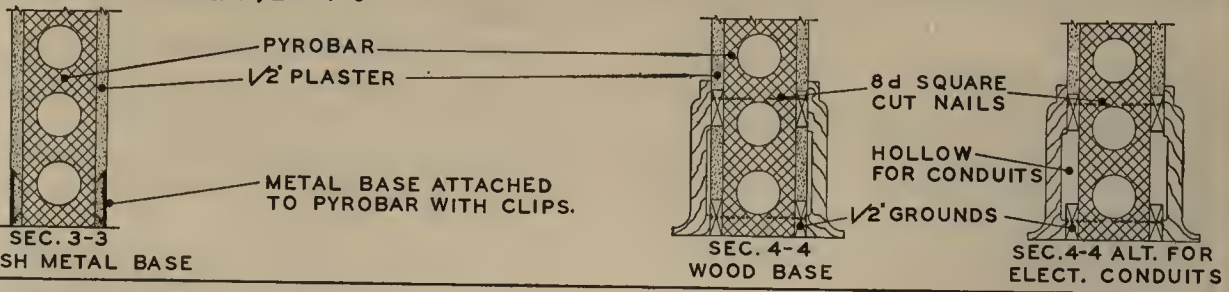
PYROBAR PARTITION TILE



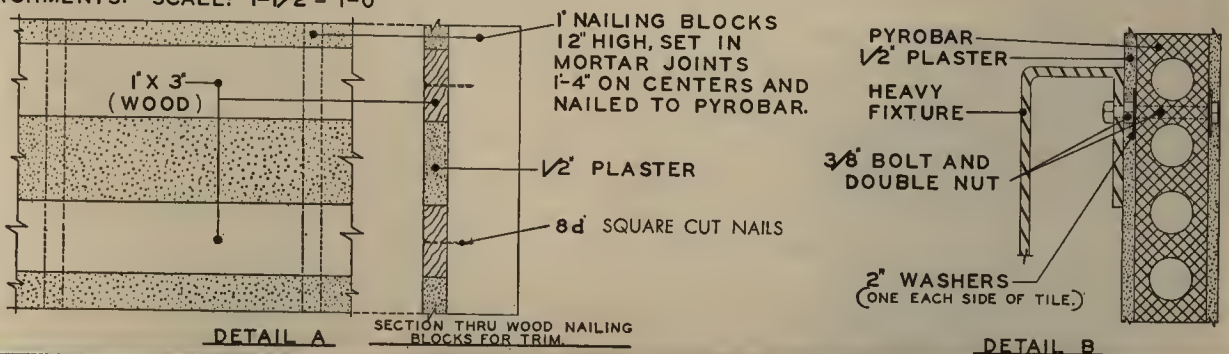
DOOR BUCKS: SCALE: 1-1/2" = 1'-0"



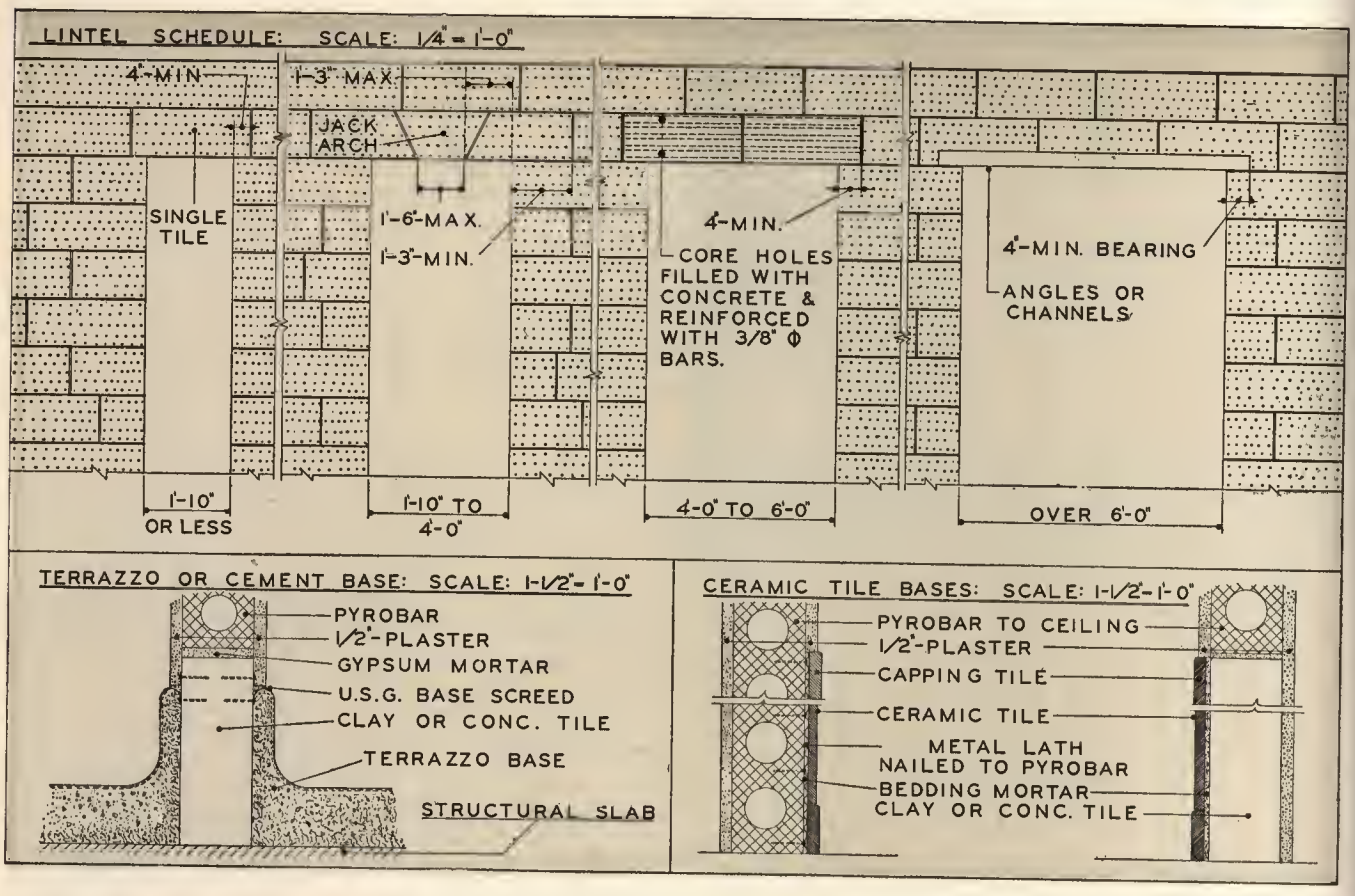
ROOM BASES: SCALE: 1-1/2" = 1'-0"



ATTACHMENTS: SCALE: 1-1/2" = 1'-0"



PYROBAR PARTITION TILE



MASONRY SPECIFICATIONS FOR PYROBAR PARTITION TILE

SCOPE: Unless otherwise shown on plans, all partitions, including pipe chases, shafts, etc., shall be constructed of gypsum partition tile.

MATERIALS

Gypsum Partition Tile shall be PYROBAR, of sizes indicated, as made by United States Gypsum Company.

Cement for mortar shall be RED TOP Partition Tile cement as made by United States Gypsum Company.

Sand shall be clean and sharp, complying with ASTM Designation C-35-39.

Wood Nailing Blocks shall be not less than ¾" thick by 12" long by the thickness of the PYROBAR Tile.

ERECTION

All mortar shall be mixed in proportions of 1 part Partition Tile Cement to 3 parts sand, by weight. Mortar shall not be retempered. After door bucks are erected and rough plumbing and wiring is in place, the first course shall be laid with core holes horizontally by bedding in mortar to a true and straight line according to partition layout as shown on plans. Succeeding courses shall be laid to a line in ½" thick full mortar beds, uniformly level in each course, and with vertical joints staggered. Cut all joints flush. Partitions shall be well anchored to intersecting masonry walls 12½" on centers vertically with corrugated wall ties or 16d or 20d cut nails. Wedge tightly at ceiling and slush full with mortar. All chinks and crevices and the space between tile and door bucks shall be slushed full with mortar. Door bucks shall be anchored to PYROBAR with either buck tie or 16d cut nails.

OPTIONAL INCLUSIONS (See details).

1. *Lintels* shall be formed as follows: Openings of 22" or less with single tile. Openings between 22" and 48" with jack-arch construction. Openings between 48" and 72" with reinforced gypsum lintels. Openings over 72" with steel angles or channels of sufficient size.

2. *Wood Nailing Blocks* shall be nailed to one end of each tile before setting into wall wherever lightweight fixtures or heavy trim, etc., are to be attached to the partition.

3. *Heavy Fixtures* shall be secured to PYROBAR partitions with bolts through the tile, using large steel washers on both sides. Set bolts into place before plastering.

4. *Wood Grounds* for plastering shall be nailed into the tile at base and around openings to provide a ½" total thickness of plaster.

5. *Ceramic Tile or Portland Cement Base.* Wherever such wall finish is shown on plans or required by specifications, metal lath shall be nailed directly to the PYROBAR. In lieu thereof, structural clay tile, of equal thickness, may be substituted for the PYROBAR wherever such wall finish is required.

BASECOAT PLASTERS

RED TOP* CEMENT PLASTER

DESCRIPTION

RED TOP Cement Plaster is a neat gypsum plaster requiring the addition of an aggregate and water on the job. It is the basecoat that receives the finish coat plaster.

Complies with ASTM Designation C28-40 for "Gypsum Neat Plaster" and Federal Specification SS-P-402, Type N.

FUNCTION AND UTILITY

RED TOP Cement Plaster is used for scratch (1st coat) and brown (2nd coat) wherever good plastering aggregate is available.

FIREPROOF—Made from gypsum rock, it is incombustible and will not transmit high temperatures until completely calcined; a slow process. In this respect, gypsum plaster is unique. See fire test data page 8, for authoritative fire ratings.

ADAPTABLE—RED TOP Cement Plaster bonds firmly with ROCKLATH* plaster base, metal lath, fiber insulation lath, wood lath, PYROBAR* gypsum partition tile, clay tile, porous brick and certain other approved plaster bases.

RED TOP Cement Plaster is the standard of excellence for receiving such finish coats as lime putty, Keene's Cement, gypsum trowel finish, gypsum float finish, ORIENTAL* Interior finish, gypsum acoustical plasters, etc. It is an excellent base to receive acoustical tile.

RED TOP Cement Plaster is plastic, permitting wide latitude in its use for plain or curved surfaces.

UNIFORM—RED TOP Cement Plaster is manufactured on a nation-wide basis within narrow limits of tolerance. Its "stabilized set" minimizes the hazards due to impure water or aggregate and job conditions. Its set is adjusted for seasonal conditions.

STRONG—When mixed with good sand according to specifications, RED TOP Cement Plaster has a compressive strength up to 1,000 lbs. per sq. in. (see test data, page 36). It is capable of withstanding normal wear and usage for the life of the building.

ECONOMICAL—RED TOP Cement Plaster is lowest in cost of the various types of gypsum basecoats because:

The neat plaster is low in cost and is mixed with economical aggregate which increases bulk and coverage.

RED TOP Cement Plaster is highly plastic, thus is easily and quickly applied by the mechanic.

Normal usage requires little or no maintenance.

LIMITATIONS OF USE

1. RED TOP Cement Plaster should be sanded strictly according to specifications. Over-sanding drastically decreases its strength. Sand content is easily calculated. The sand content of a No. 2 shovel full of damp sand is approximately 15 lbs.

2. Under no conditions should RED TOP Cement Plaster be applied to concrete. Use BONDCRETE* Plaster, described on page 35.

3. RED TOP Cement Plaster should not be used where contact with excessive water or moisture is expected. In such instances, use portland cement-lime plaster.

4. RED TOP Cement Plaster is an interior basecoat plaster and should not be used on the exterior where exposed to the elements.

5. Because bituminous compounds do not provide an ideal base for gypsum plaster basecoats; plaster application on masonry walls and concrete that have been coated with these compounds is not recommended.

**Trademark Reg. U. S. Pat. Off.*

BASECOAT PLASTERS

PLASTERING SPECIFICATIONS
(FOR RED TOP CEMENT PLASTER)

GENERAL PROVISIONS

In cold weather a minimum temperature of 40° F. shall be maintained in the building until the plaster is dry. After plaster has set, ventilation shall be provided to eliminate excessive moisture in the building. In hot, dry weather, all openings shall be closed with sash or cloth during the application of plaster. No plaster shall be allowed to dry before setting.

SCOPE

Unless otherwise specified or shown on drawings, all walls and ceilings shall be plastered as herein described.

MATERIALS

Basecoat plaster shall be RED TOP Cement Plaster manufactured by the United States Gypsum Company (except that the scratch coat over metal lath shall be fibered RED TOP Cement Plaster).

Sand—Shall be clean and sharp, complying with ASTM Designation C35-39.

Optional Inclusion (for Vermiculite)—Vermiculite shall be Standard Plaster Aggregate complying in particle size with ASTM Designation C35-39, and weighing not less than 7½ or more than 10 pounds per cubic foot.

Finish Plaster (*Note to Architect—Select the desired finish from pages 37 to 41, and insert herein the applicable materials*).

GROUNDS

The total plaster thickness over gypsum lath, PYROBAR gypsum partition tile or fiber insulation lath, shall be ½"; over brick, clay tile or other masonry, it shall be ⅝" thick and over metal lath the plaster thickness shall be ⅝" measured from the face of the lath. (Greater thickness in grounds may be required for certain fire ratings. See table, page 30.)

MIXING OF BASECOATS

The scratch or first coat over all lath shall be mixed in the proportion of 1 part gypsum plaster to not more than 2 parts sand by weight (13 No. 2 shovels of damp sand per 100 lb. bag of plaster).

The brown or second coat over all lath and the scratch and brown over masonry surfaces (except monolithic concrete), shall be mixed in the proportion of 1 part gypsum plaster to not more than 3 parts sand by weight (20 No. 2 shovels of damp sand per 100 lb. bag of plaster).

(*Note to Architect*). *If Vermiculite aggregate is used, the proportioning shall be as follows:*

Scratch coat over lath—100 lbs. gypsum plaster to not more than 2 cu. ft. Vermiculite; over masonry, 100 lbs. gypsum plaster to not more than 3 cu. ft. Vermiculite.

Brown coat over lath or masonry—100 lbs. gypsum plaster to not more than 3 cu. ft. Vermiculite.

Double-up work—100 lbs. gypsum plaster to not more than 2½ cu. ft. Vermiculite.

APPLICATION OF BASECOATS

(*Note to Architect*). *Three-coat work is the preferred plaster specification, because it is more conducive to application to full grounds. It may be used throughout the job except over masonry where 2-coat work is preferred. Three-coat work should always be required over metal lath and resilient lathing systems.*

Two-Coat Work—Base (first) coat shall be applied with sufficient material and pressure to form good full keys on wood lath, and good bond on gypsum or fiber insulation lath or masonry, as the case may be, and to cover well, and then be doubled back to bring the plaster out to grounds, straightened to true surface with rod and darby and left rough, ready to receive the finish (second) coat. To avoid excess suction and dry-outs, it is preferable to moderately wet masonry surfaces before plastering.

Three-Coat Work—Scratch (first) coat shall be applied with sufficient material and pressure to form good full keys on wood and metal lath, wire lath and wire fabric, and good bond on gypsum or fiber insulation lath, as the case may be, and to cover well, and then be scratched to rough surface.

Brown (second) coat shall be applied after the scratch (first) coat has set firm and hard, brought out to grounds and straightened to a true surface with rod and darby, and left rough, ready to receive the finish (third) coat.

MIXING AND APPLICATION OF FINISHES

Use the applicable finish coat specifications selected from pages 37 to 41.

BASECOAT PLASTERS

RED TOP WOOD FIBER PLASTER

DESCRIPTION

RED TOP Wood Fiber Plaster is a factory-prepared gypsum basecoat plaster containing finely-shredded, selected wood fiber. It requires the addition of water only on the job.

FUNCTION AND UTILITY

STRONGER—Compared to plaster sanded 1:3, Wood Fiber Plaster has:

3 times greater compressive and tensile strength.

2½ times greater resistance to lateral impact.

50 per cent greater surface hardness,

Consequently, has greater resistance to cracking.

FIREPROOF—Generally 50 per cent more fire resistant than sanded plaster. See ratings on page 36.

FACTORY PREPARED—Particularly suitable where good aggregates are unavailable. Avoids dangers of improper proportioning of aggregates.

LIGHTWEIGHT—Dead load is 25 per cent lighter than sanded plaster.

COST—A wood fiber basecoat plaster job costs approximately 15 per cent more than RED TOP Cement Plaster sanded on the job.

LIMITATIONS

Same as paragraphs 2, 3, 4, and 5 under Limitations for use of RED TOP Cement Plaster, page 31.

PLASTERING SPECIFICATIONS

(FOR RED TOP WOOD FIBER PLASTER)

GENERAL PROVISIONS

In cold weather a minimum temperature of 40°F. shall be maintained in the building until the plaster is dry. After plaster has set, ventilation shall be provided to eliminate excessive moisture in the building. In hot, dry weather, all openings shall be closed with sash or cloth during the application of plaster. No plaster shall be allowed to dry before setting.

SCOPE

Unless otherwise specified or shown on drawings, all walls and ceilings shall be plastered as herein described.

MATERIALS

Basecoat plaster shall be RED TOP Wood Fiber Plaster manufactured by United States Gypsum Company.

Finish Plaster—(*Note to Architect—Select the desired finish from pages 37 to 41, and insert herein the applicable materials*).

GROUNDS

The total plaster thickness over gypsum lath, PYROBAR gypsum partition tile or fiber insulation lath shall be ½″; over brick, clay tile or other masonry, it shall be ⅝″ thick, and over metal lath the plaster thickness shall be ⅝″ measured from the face of lath.

MIXING AND APPLICATION

On all types of lath, RED TOP Wood Fiber Plaster shall be mixed with water only on the job. The scratch and brown coats over masonry surfaces (except monolithic concrete), shall be mixed in the proportion of 1 part Wood Fiber Plaster to 1 part sand by weight (7 No. 2 shovels of damp sand per 100-lb. bag Wood Fiber plaster).

The scratch coat of plaster shall be applied to a thickness of approximately ¼″ with sufficient pressure to form a good bond. Cross rake and allow to set. When partially dry, apply the brown or second coat to full grounds, allowing approximately 1/16″ for the finish coat. Rod and darby to a true and level surface and roughen slightly.

All porous masonry surfaces shall be moderately wetted to provide proper suction before plastering. Brown (second coat) shall be applied after the scratch (first coat) has "taken up," but before it sets.

OPTIONAL INCLUSION

At the option of the contractor, all brown coats may be applied to the unset scratch coat, *except when plastering over metal lath or Resilient ROCKLATH ceilings.*

MIXING AND APPLICATION OF FINISH COAT PLASTER

Use the applicable finish coat specifications selected from pages 37 to 41.

BASECOAT PLASTERS

RED TOP SANDED PLASTER

DESCRIPTION

RED TOP Sanded Plaster is a factory-sanded gypsum basecoat plaster requiring the addition of water only, on the job.

Complies with ASTM Designation C28-40 for "Gypsum Ready-sanded Plaster" and Federal Specification SS-P-402, Type S (scratch coat) or Type B (brown coat).

FUNCTION AND UTILITY

RED TOP Sanded Plaster is particularly suitable where good plastering sand is not available. It provides all those features described for RED TOP Cement Plaster, plus the following:

FACTORY SANDED—Properly selected aggregate correctly proportioned and machine-mixed.

COST—Slightly higher than job-sanded RED TOP Cement Plaster, but more economical than other gypsum basecoat plasters.

LIMITATIONS OF USE

Same as paragraphs 2, 3, 4 and 5 of Limitations of Use under RED TOP Cement Plaster, page 31.

PLASTERING SPECIFICATIONS
(FOR RED TOP SANDED PLASTER)

GENERAL PROVISIONS

In cold weather a minimum temperature of 40°F. shall be maintained in the building until the plaster is dry. After plaster has set, ventilation shall be provided to eliminate excessive moisture in the building. In hot, dry weather, all openings shall be closed with sash or cloth during the application of plaster. No plaster shall be allowed to dry before setting.

SCOPE

Unless otherwise specified or shown on drawings, all walls and ceilings shall be plastered as herein described.

MATERIALS

Basecoat Plaster shall be RED TOP Sanded Plaster manufactured by United States Gypsum Company. Over masonry, RED TOP Sanded Plaster (for masonry) shall be used.

Finish Plaster (*Note to Architect—Select the desired finish from pages 37 to 41, and insert herein the applicable materials*).

GROUNDS

The total plaster thickness over gypsum lath, PYROBAR gypsum partition tile or fiber insulation lath shall be ½″; over brick, clay tile or other masonry it shall be ⅝″ thick, and over metal lath the plaster thickness shall be ⅝″ measured from the face of the lath.

MIXING AND APPLICATION

Sanded plaster shall be mixed with water only. The scratch coat of plaster shall be applied to a thickness of approximately ¼″ with sufficient pressure to form a good bond. Cross rake and allow to set. When partially dry, apply the brown or second coat to full grounds, allowing approximately 1/16″ for the finish coat. Rod and darby to a true and level surface and roughen slightly.

All porous masonry surfaces shall be moderately wetted to provide proper suction before applying scratch coat. Brown (second coat) shall be applied after the scratch (first coat) has "taken up," but before it sets.

OPTIONAL INCLUSION

At the option of the contractor, all brown coats may be applied to the unset scratch coat, *except when plastering over metal lath or Resilient ROCKLATH ceilings.*

MIXING AND APPLICATION OF FINISH COAT PLASTER

Use the applicable finish coat specifications selected from pages 37 to 41.

BASECOAT PLASTERS

BONDCRETE* PLASTER

DESCRIPTION

RED TOP BONDCRETE is a gypsum basecoat plaster specially formulated to bond with rough interior monolithic concrete surfaces. It is factory prepared, requiring addition of water only on the job.

There are no ASTM or Federal Specifications covering this type of plaster.

FUNCTION AND UTILITY

BONDCRETE is the only recommended plaster for application to concrete. It provides the bonding plaster to receive a browning, or leveling, coat of RED TOP Cement Plaster or Wood Fiber Plaster when necessary.

If a leveling coat is unnecessary, the finish plaster may be applied directly to the BONDCRETE.

BONDING STRENGTH—BONDCRETE adheres well to properly prepared concrete surfaces. See Surface Preparation under Specifications for proper conditioning of concrete surfaces. This is important.

The thermal coefficient of expansion of BONDCRETE is approximately the same as for concrete.

LOW COST—An economical bonding coat to provide for the application of plaster direct to concrete surfaces.

LIMITATIONS OF USE

1. BONDCRETE should be used only on concrete that is properly prepared for plastering. It should never be applied to smooth concrete.

2. Maximum thickness of BONDCRETE and basecoat shall not exceed ⅜″ on ceilings or ⅝″ on walls. If additional thickness is required, metal lath shall be secured to the concrete surfaces.

3. The same as paragraphs 3, 4, and 5 under RED TOP Cement Plaster, page 31.

PLASTERING SPECIFICATIONS

(FOR RED TOP BONDCRETE PLASTER)

1. *Under Materials of the Plastering Specification, include the following:*

Basecoat for plastering over concrete surfaces shall be BONDCRETE manufactured by United States Gypsum Company.

2. *Under Mixing and Application, include the following:*

Mix BONDCRETE with water only. Concrete surfaces to receive plaster shall be properly prepared as specified elsewhere. Surfaces of walls and columns shall have a scratch coat of bond plaster, followed by a brown coat of gypsum plaster (in the proportions of 1 part of gypsum neat plaster to not more than 3 parts of sand, by weight) trowelled into the scratch coat before it has set. The brown coat shall be brought out to grounds, straightened to a true surface with rod and darby, and left rough, ready to receive the finish coat. Total thickness of plaster not to exceed ⅝″.

Concrete ceilings shall have a coat of bond plaster scratched in thoroughly, doubled back, and filled out to a true, even surface and left rough, ready to receive the finish coat. Total thickness of plaster not to exceed ⅜″.

If additional thickness of plaster is required, metal lath shall be secured to the concrete surface.

3. *A separate paragraph must be included as follows:*

Surface Preparation. Monolithic concrete surfaces shall be cleaned of all dust, loose particles, and other foreign matter. Laitance and efflorescence shall be removed by washing first with a 10 per cent solution of commercial muriatic acid and water and then with clean water to remove all traces of acid. Grease and oil shall be completely removed. A smooth concrete surface resulting from pouring on smooth forms, or vibrating of concrete, is an improper base for plaster application.

Concrete surfaces shall have sufficient roughness to provide proper bond. If surfaces are not rough, they shall be hacked or bush-hammered, or a dash-coat of portland cement grout, composed of 1 part of cement and 1½ parts of fine sand mixed to a mushy consistency, shall be applied. Using a stiff fiber brush, the portland cement grout shall be forcibly dashed on the concrete surface with a whipping motion. This coat shall be kept damp for at least 2 days immediately following its application and then allowed to dry. Before application of the plaster, the surface shall be evenly dampened if necessary to provide proper suction.

**Trademark Reg. U.S. Pat. Off.*

BASECOAT PLASTERS

TECHNICAL DATA

MIX:	WOOD FIBER	CEMENT PLASTER: SAND			CEMENT PLASTER: VERMICULITE	
	Neat	1:1	1:2	1:3	100 lbs.: 2 Cu. Ft.	100 lbs.: 3 Cu. Ft.
Compressive Strength—lbs. per sq. in.	2600	2000	1000	700	450	250
Tensile Strength—lbs. per sq. in.	440	285	220	150	150	100
Cost Factor, Labor & Material	100	95	93	90	95	95

FIRE TEST DATA

CONSTRUCTION	PANEL TYPE: TYPE BASE	PANEL TYPE: PLASTER & AGGREGATE	PANEL TYPE: THICKNESS	RATING AND REFERENCE
PARTITIONS				
Wood Frame	3/8" ROCKLATH Plain	Gypsum-Sand 1:2, 1:2	1/2"	45 Minutes (1)
Wood Frame	3/8" ROCKLATH Plain	Gypsum Wood Fiber	1/2"	1 Hour (1)
Wood Frame	3/8" Perf. ROCKLATH	Gypsum-Sand 1:2, 1:2	1/2"	1 Hour (1)
Wood Frame	Metal Lath	Gypsum-Sand 1:2, 1:3	3/4"	45 Minutes (1)
Wood Frame	Metal Lath	Gypsum-Sand 1:2, 1:2	3/4"	1 Hour (1)
Wood Frame	Metal Lath	Gypsum Wood Fiber	3/4"	1 1/2 Hours (1)
Wood Frame	Metal Lath	Gypsum-Vermiculite 100:2 1/2, 100:3 1/2	3/4"	1 Hour (2)
3" Hallow PYROBAR		Gypsum-Sand 1:3	1/2"	2 Hours (1) (2) (3)
4" Hallow PYROBAR		Gypsum-Sand 1:3	1/2"	3 Hours (1) (2) (3)
Solid	Metal Lath	Gypsum-Sand 1:2, 1:3	2"	45 Minutes (1)
Solid	Metal Lath	Gypsum-Sand 1:2, 1:2	2"	1 Hour (3)
Solid	Metal Lath	Gypsum Wood Fiber	2"	1 3/4 Haurs (1)
Solid	Metal Lath	Gypsum Wood Fiber	2 1/4"	2 Hours (1)
Solid	ROCKLATH	Gypsum-Sand 1:1, 1:2	2"	1 Hour (3)
TRUSSTEEL† Stud	Metal Lath	Gypsum-Sand 1:2, 1:3	3/4"	45 Minutes (1)
TRUSSTEEL Stud	Metal Lath	Gypsum-Sand 1:2, 1:3	7/8"	1 Hour (1)
TRUSSTEEL Stud	Metal Lath	Gypsum-Sand 1:2, 1:2	3/4"	1 Hour (1)
TRUSSTEEL Stud	Metal Lath	Gypsum Waad Fiber	7/8"	2 Hours (1)
CEILINGS				
Woad Frame	3/8" Perf. ROCKLATH	Gypsum-Sand 1:2	1/2"	45 Minutes (1) (2)
Wood Frame	3/8" Perf. ROCKLATH	Gypsum-Sand 1:2	1/2"	*1 Hour (1)
Waad Frame	Metal Lath	Gypsum-Sand 1:2, 1:3	3/4"	45 Minutes (1)
Waad Frame	Metal Lath	Gypsum-Sand 1:2, 1:3	3/4"	**1 Hour (1)
Wood Frame	Metal Lath	Gypsum Wood Fiber	3/4"	1 Hour (2)
Steel Joist***	Metal Lath	Gypsum-Sand 1:2, 1:3	3/4"	2 Hours (1)
Steel Jaist***	Metal Lath	Gypsum-Vermiculite 100:2, 100:3	3/4"	3 Haurs (1)
Steel Joist***	Metal Lath	Gypsum Waad Fiber	1"	3 Haurs (1)
Steel Joist***	Metal Lath	Gypsum-Vermiculite 100:2, 100:3	1"	4 Hours (1)
Cellular Steel Flaor****	Metal Lath	Gypsum Waad Fiber	1"	4 Hours (1)
Cellular Steel Flaor****	Metal Lath	Gypsum-Vermiculite 100:2, 100:3	1"	4 Hours (1)

(1) National Bureau of Standards.
(2) Underwriter's Labaratories.
(3) Nationally recognized fire testing laboratary—name on request.
*Lath applied with 1 1/8", 13 gauge nails, 3/8" head and joints covered with Striplath. 1 3/4" nails.
**Lath applied with 1 1/2", 11 gauge, 7/16" head barbed roofing nails, 6" O.C.
***2 1/2" reinforced concrete slab on Riblath or 2" precast gypsum tile above.
****Ceiling 9" or mare below flaar slab.

†*Trademark Reg. U. S. Pat. Off.*

FINISHING PLASTERS

DESCRIPTION

The finish coat plaster provides the base for final wall or ceiling decoration. It is applied to a thickness of 1/16" to 1/8", usually over a gypsum plaster basecoat.

Several types of finish coats are available, each with characteristics to serve specific requirements, and generally classified according to the principal cementitious ingredient as follows:

1. *Lime and Gauging*, commonly known as "white coat" for a smooth white trowel finish. It consists of lime, soaked to a smooth putty, and mixed with gypsum gauging plaster. With addition of sand, is adaptable for sand float finishes. The three essentials to a good white coat job are:

a. Lime must be highly plastic and completely hydrated.

b. Correct proportioning of gauging plaster to lime putty (see specifications) and thorough blending of ingredients.

c. Careful application and sufficient trowelling to produce a smooth glossy surface.

2. *Lime and Keene's*—for extra hard smooth white trowel finish. With addition of sand, is adaptable for sand float finishes. Also available mill mixed and colored under "ORIENTAL"* Interior Finish brand.

3. *Gypsum*—Trowel (smooth), or sand float prepared finishes.

4. *Acoustical Plaster*—(*SABINITE**), for sound absorption. (See page 41 or AIA File 39-B or Sweets Section 11A-12.)

ESSENTIALITY OF COMPLETE HYDRATION IN DOLOMITIC FINISHING LIMES

Some years ago an exhaustive investigation was undertaken by the National Bureau of Standards in co-operation with several architects and lime manufacturers to determine reasons for "lime bulges" (delamination of finish from basecoat) occurring on many government and private buildings. The failures investigated occurred on surfaces which had been "white coated" with *dolomitic* hydrated finishing limes from the Ohio fields, which have been widely used. Failures often occur 5 or 10 years after erection of the buildings.

After much analysis, it was the consensus of opinion that the delayed hydration and attendant expansion of unhydrated oxides in the "normal" dolomitic finishing limes resulted in bulging and delamination.

To correct this difficulty, United States Gypsum Company took the lead in developing "IVORY"* Pressure Hydrated finishing lime, a "fully" or "pressure" (less than 8 per cent unhydrated) hydrated Ohio dolomitic finishing lime.

ASTM specifications C206-46T for *special* finishing lime and proposed amendments to Federal specifications, have been written to cover 92 per cent hydrated limes; a specification has been published by the National Lime Association. This type of finishing lime is required by ASA Specifications for Gypsum Plastering, A42.1-1946.

Note that all high calcium hydrated limes (properly soaked) comply with these requirements as do high calcium quicklimes (properly slaked).

TECHNICAL DATA—FINISH PLASTERS

	GAUGING PLASTER TO LIME	QUICK TROWELLING KEENE'S TO LIME		GYPSUM TROWEL FINISH	GYPSUM FLOAT FINISH	ORIENTAL FINISH
Mix by weight of dry materials:	1:2	2:1 Medium Hard	4:1 Hard	NEAT	NEAT	NEAT
Color	White	White	White	White	White or Gray	12 Colors
Finish Texture	Smooth	Smooth	Smooth	Smooth	Float	Float
Hardness in Kilograms (†)	34	50	70	55	(‡)	(‡)
Workability	1	4	5	2	3	6
Cost Factor Labor & Mat'l.	100	170	180	125	125	160

(†) Kilograms required to force a 10MM ball .01" into plaster face.
(‡) These are hard finishes but the aggregate in the surface does not permit an indication with this test.

*Trademark Reg. U.S. Pat. Off.

FINISHING PLASTERS

LIME PUTTY—GAUGING (WHITE COAT) FINISH

DESCRIPTION

Hydrated Finishing Lime (or Finishing Quicklime) is soaked (or slaked) to putty consistency, blended in proper proportion with gypsum gauging plaster, and is trowelled to a smooth, hard finish usually over a properly prepared gypsum basecoat. This is by far the most widely used plaster finish coat due to ease of application, flexibility, whiteness and economy.

FUNCTION & UTILITY OF INGREDIENTS

LIMES:

The function of lime in a finish plaster is to provide the "spread" and plasticity to permit fast, easy application with full flexibility and economy. Lime does not "set," but hardens slowly; it likewise shrinks on drying. Therefore, gypsum gauging must be blended into the lime putty in proper proportion to provide initial set and strength, and to avoid shrinkage cracks.

IVORY—A "fully" "pressure" (over 92%) special finishing hydrated lime that will not expand measurably in the wall. *Requires no soaking* to produce a smooth, uniform, white, highly plastic putty. May be mixed by adding dry lime and gauging to water in mechanical mixer because it develops its normal plasticity almost immediately. This is the preferred lime. Meets ASTM Designation C206-46T Type S and Federal Specification SS-L-351, Type F, including the added requirement of not more than 8% unhydrated oxides.

*RED TOP and GRAND PRIZE**—Shipped from *Genoa, Ohio*, are normal dolomitic hydrated finishing limes, and are only partially hydrated. They comply with Federal Specification SS-L-351, Type F, and ASTM Designation C6-46, Type N, but do not comply with specifications limiting the unhydrated oxides to 8 per cent.

RED TOP Hydrated Limes shipped from *Farnams, Massachusetts* and *New Braunfels, Texas*, are high calcium limes and are completely hydrated. They comply with ASTM C206-46T Type S and Federal Specification SS-L-351, and meet specifications limiting the unhydrated oxides to not more than 8 per cent.

All types of USG* hydrated lime except "IVORY" Finish Hydrate require overnight soaking. They yield a smooth, highly plastic putty of exceptional purity. Until the advent of pressure hydrates, such as "IVORY," they were the standards of excellence.

RED TOP and CHESHIRE Brands—Are high calcium finishing quicklimes. When properly slaked and aged for at least 48 hours, hydration is complete, (over 92%) thereby insuring against further hydration and attendant possibilities of expansion on the wall. Comply with ASTM Designation C5-26, and Federal Specification SS-Q-351. They have unusually high plasticity and purity.

GAUGING PLASTERS

1. *CHAMPION** and *STAR** are *White* Gauging Plasters, for blending with lime putty to provide initial set and strength. They are ground to the proper fineness to blend readily and completely, thus minimizing the danger of check-cracking, crazing, etc. when properly used. They give strength and hardness to the surface finish. CHAMPION has a quicker "set" than STAR Gauging Plaster. They are the preferred gauging plasters because of the extreme whiteness of the finish when used with limes of high purity.

Complies with ASTM Designation C28-40 "Calcined gypsum for finishing coat (white)" and Federal Specification SS-P-402, Type G.

2. *RED TOP Gauging* is a "local" gauging plaster, so called because it is made from a rock grade that is used in basecoat plasters. It is available with slow or fast "set." It is distinguished from White Gauging Plasters by its darker color. Except for color, RED TOP Gauging Plasters are the equal of CHAMPION and STAR Gauging Plasters.

Complies with ASTM Designation C28-40 "Calcined gypsum for finishing coat (gray)" and Federal Specification SS-P-402, Type G.

PROPORTIONING—See Specifications

LIMITATIONS OF USE

1. For interior application only.

2. Recommended proportioning must be observed. Failure to use sufficient gauging plaster, to blend thoroughly, or to trowel adequately often results in check-cracking, crazing, lack of hardness and bond failure.

3. Designed for normal humidity conditions. Where excessive humidity or frequent exposure to moisture is expected, use Keene's Cement as later described.

4. Designed for normal usage. If hardness, and resistance to abrasion is required, use Keene's Cement as later described.

5. Must be applied to gypsum or lime plaster basecoat. Lime-gauging bond to portland cement plasters is inadequate. Do not apply direct to masonry.

*Trademark Reg. U. S. Pat. Off.

FINISHING PLASTERS

LIME PUTTY—GAUGING (WHITE COAT) FINISH—Continued

SPECIFICATIONS

Include the following in plaster specifications given on pages 4 to 7.

MATERIALS

Lime for finish plaster shall be (*select one*):

(*IVORY Finish Hydrate Lime*)

(*RED TOP or CHESHIRE Finish Quicklime*)

(*RED TOP or GRAND PRIZE Finish Hydrate Lime*)

manufactured by United States Gypsum Company.

Gauging Plaster shall be (*select one*):

(*CHAMPION or STAR "White" Gauging Plaster*)

(*RED TOP "Local" Gauging Plaster*)

manufactured by United States Gypsum Company.

MIXING AND APPLICATION OF FINISH PLASTER

Lime shall be thoroughly soaked (or slaked and aged) according to manufacturer's directions printed on containers. (*NOTE: IVORY Finish Hydrate requires no soaking or slaking.*) Mix in the proportions of 3 parts lime putty to 1 part of gauging plaster, by volume. The equivalent by weight shall be 2 parts dry lime to 1 part dry gauging plaster. Mixing shall be done on plasterer's board, thoroughly blending the gauging into the lime putty. When thoroughly mixed, it shall be applied to a surface-dry basecoat. Scratch in thoroughly and immediately double back to fill out to a true even surface. Thickness to be 1/16" to 1/8". Trowel once before final set, and water trowel after set to provide dense surface for decoration. Brush with clean water only.

KEENE'S-LIME FINISH

DESCRIPTION

Keene's Cement is a high strength, white gypsum plaster. Keene's-Lime finish is composed of lime putty blended with Keene's Cement in proportions required to obtain desired hardness.

Complies with ASTM Designation C61-40 and Federal Specification SS-C-161, Type I (Regular) and Type II (Quick Troweling).

FUNCTION AND UTILITY

In addition to those listed for lime putty-gauging, it provides:

RESISTANCE TO ABRASION. Keene's Cement has exceptionally high strength and surface hardness. See Technical Data.

LOW WATER ABSORPTION. Keene's Cement, having a high density, has low water absorption.

CHOICE OF HARDNESS. Keene's Cement is mixed with lime putty in varying proportions for "hard" and "medium hard" finishes. See Technical Data and specifications.

TWO TYPES. Regular and Quick Troweling. Regular Keene's sets slowly, requires more troweling and may be used with any proportion of lime.

Quick Troweling Keene's sets faster, requires less troweling and must be used with a minimum of 25 lbs. of dry hydrated lime per 100 lbs. of Keene's Cement.

LIMITATIONS OF USE

1. Keene's Cement is for interior finishes only.

2. Keene's Cement finish is not recommended where exposure to water is extreme or continuous. Use portland cement-lime plaster.

3. For application over gypsum basecoats of high compressive strength only.

SPECIFICATIONS

The following should be included in plaster specifications given on pages 4 to 7.

MATERIALS

Keene's Cement shall be (Regular Keene's Cement) (Quick Troweling Keene's Cement) manufactured by United States Gypsum Company.

Lime—(Refer to Lime Gauging Specifications, above, and select one).

MIXING AND APPLICATION

This specification should be exactly as given for Lime-Gauging, except that Keene's Cement should be substituted for Gauging Plaster and the proportioning should be changed to one of the following:

FINISHING PLASTERS

KEENE'S—LIME FINISH—MIXING AND APPLICATION CONTINUED

1. "*Medium Hard*" *Finish* shall be mixed in the proportion of 50 lbs. of dry hydrated lime to 100 lbs. of Keene's Cement. This proportion is approximately 100 lbs. of lime putty to 100 lbs. of Keene's Cement, or 35 qts. of lime putty to 100 lbs. of Keene's Cement.

2. "*Hard*" *Finish* shall be mixed in the proportion of 25 lbs. of dry hydrated lime to 100 lbs. of Keene's Cement. This proportion is approximately 50 lbs. of lime putty to 100 lbs. of Keene's Cement, or 17 qts. of lime putty to 100 lbs. of Keene's Cement.

3. *Keene's Lime-Sand Float Finish* shall be mixed in the proportion of 50 lbs. of dry hydrated lime, 100 lbs. of Keene's Cement and 400 lbs. of sand. This proportion is approximately 100 lbs. of lime putty, 100 lbs. of Keene's Cement and 400 lbs. of sand, or 35 qts. of lime putty, 100 lbs. of Keene's Cement and 4 to 5 cu. ft. of sand (26 No. 2 shovels of sand).

PREPARED GYPSUM FINISHES

RED TOP GYPSUM TROWEL FINISH and RED TOP GYPSUM SAND FLOAT FINISH

DESCRIPTION

RED TOP Trowel and Sand Float finishes are mill-prepared gypsum finish coat plasters requiring the addition of water only.

There are no ASTM or Federal Specifications covering this type of plaster.

FUNCTION AND UTILITY

RED TOP GYPSUM TROWEL FINISH—is used where hard, smooth surfaces are desired.

RED TOP GYPSUM SAND FLOAT FINISH—is used where a quality float finish is desired.

STRENGTH—approximately twice the strength of ordinary lime-gauging finishes.

EARLY DECORATION—may be painted as soon as set and dry.

FACTORY PREPARED—mill selection of ingredients and formulation insure uniform results and avoid variations possible with job mixing.

NON-ALKALINE—contain nothing injurious to paint or decorations.

BOND—provides durable and natural bond to gypsum basecoat.

COST—slightly higher than job-prepared finishes.

LIMITATIONS

1. Designed for application over gypsum basecoats only.

2. Should not be used on exterior surfaces where exposed to the elements or on interiors exposed to excessive moisture.

PLASTERING SPECIFICATIONS

The following should be included in Plastering Specifications:

Finish Coat shall be (RED TOP Gypsum Trowel Finish) or (RED TOP Gypsum Sand Float Finish) manufactured by United States Gypsum Company.

MIXING AND APPLICATION

Finish Coat—Prepared gypsum finish shall be mixed with water only in strict accordance with the manufacturer's directions.

Include whichever of the following paragraphs is applicable:

RED TOP Gypsum Trowel Finish shall be applied in 2 coats to a total thickness of not more than ⅛" over a set, half-green gypsum basecoat. Scratch in a thin coat and double back with a second coat, filling out to a true and even surface. Trowel to a smooth finish free of cat faces and other blemishes. Use water sparingly during troweling.

RED TOP Gypsum Sand Float Finish shall be applied in 2 coats to a total thickness of not more than ⅛" over a set, half-green gypsum basecoat. If the basecoat has dried out, it shall be sprayed with water, but not soaked, before the finish coat is applied. Scratch in a thin coat and double back with a second coat, filling out to a true and even surface. Float with a suitable tool to give a surface free from slick spots, cat faces and other blemishes. Use water sparingly while floating.

FINISHING PLASTERS

ORIENTAL* INTERIOR (COLORED) FINISHES

DESCRIPTION

ORIENTAL Interior Finish is a mill-prepared and colored finish plaster requiring the addition of water only.

There are no ASTM or Federal Specifications covering this type of plaster.

FUNCTION AND UTILITY

INTEGRALLY COLORED at factory, requiring no decoration. Permits early occupancy. Avoids variations of color intensity that are possible when colors are mixed at site.

COLORS (with LIGHT REFLECTION for float finish). White—81%; Sahara Cream—74.6%; Ivory—77.5%; Tusk Ivory—72.7%; Harvest Buff—66.6%; Parchment—74.2%; Golden Buff—70.1%; Mist Gray—63.9%; Caenstone—51.4%; Shell Pink—64.8%; Desert Rose—56.2%; and Cool Green—67.4%.

TEXTURE—A finely floated surface or a textured finish—in 13 colors.

STRENGTH—highly resistant to abrasion due to very great hardness. See Technical Data, Page 8.

LIMITATIONS OF USE

1. ORIENTAL Interior is for producing finely floated surfaces or textures. Do not use for a smooth finish.
2. To be used on interiors only.

SPECIFICATIONS

The following should be included in plaster specifications given on pages 32 to 35.

MATERIALS

Finish Coat shall be ORIENTAL Interior Finish, manufactured by United States Gypsum Company. Color shall be as selected by the architect from schedule of colors furnished by manufacturer.

MIXING AND APPLICATION

Finish Coat—ORIENTAL Interior Finish shall be mixed with water only in accordance with the manufacturer's directions.

ORIENTAL Interior Colored Finish shall be applied over a set and half-green gypsum basecoat. (*Select one of following*):

Float Finish—Scratch in a thin coat and double-back with a second coat, filling out to a true and even surface. Surface shall be floated with a cork float to give a surface free of slick spots, cat faces and other blemishes. Do not use water while floating.

Texture Finishes—Textures shall be applied in such a manner that they will match the sample approved by the architect or his representative.

SABINITE* ACOUSTICAL PLASTER FINISHES

SABINITE TROWEL FINISH ("M")

DESCRIPTION

SABINITE Trowel Finish is a highly efficient acoustical plaster, scientifically prepared to produce a continuous *trowel finish* of exceptional sound absorbent qualities. It is manufactured in four standard colors and white and requires the addition of water only. Basically mineral, it is incombustible.

SABINITE FLOAT FINISH "F"

DESCRIPTION

SABINITE Float Finish is a highly efficient acoustical plaster which provides a *float finish* effect. Having a harder surface than SABINITE trowel finish, it is more suitable for side walls which require sound conditioning. It is manufactured in four standard colors and white and requires the addition of water only.

SABINITE 38

DESCRIPTION

SABINITE 38 is an hydraulic acoustical plaster prepared for use in locations subjected to high moisture conditions. It is manufactured in white only, and provides a *float finish*.

SABINITE 38 is effective for sound conditioning in shower rooms, for ceilings in swimming pools, etc.

LIMITATIONS (All Types)

1. Designed for use on ceilings and areas not exposed to rough usage.
2. To insure best results, SABINITE must be applied in strict accordance with manufacturer's directions.

(*See AIA File 39-B for complete Technical Information and Specifications*, or Sweets Section 11A-12.)

**Trademark Reg. U. S. Pat Off.*

EXTERIOR STUCCO BASECOAT

DESCRIPTION

Exterior stucco base coat is prepared on the job from portland cement, lime, sand and water and is the base coat that receives the ORIENTAL* Exterior (colored) Finish.

FUNCTION AND UTILITY

Exterior stucco basecoat is used for the scratch (first coat) and brown (second coat) over cement block or clay tile, or over sheathing to which Stucco Mesh or self-furring metal lath has been properly applied.

FIRE RESISTANT—Made from portland cement, lime and sand, it will not support combustion.

WEATHER RESISTANT—Suitable for normal exposure to climatic variations.

STRONG—Properly mixed and cured, it provides a dense, hard base that will withstand normal wear and usage.

ECONOMICAL—Use of standard, readily available materials provides a low cost basecoat.

LIMITATIONS OF USE

1. Because of the use of portland cement, each coat required curing with water after set.
2. Must not be applied in freezing weather or over bases containing frost.
3. Must not be used on smooth, dense surfaces or over old, unsound stucco unless stucco mesh reinforcement is first properly applied.

SPECIFICATIONS

SCOPE

Unless otherwise specified or shown on the drawings, all exterior walls shall have a portland cement-lime stucco basecoat.

(*Note to Architect: The following specification may be adapted to your requirements for interior portland cement-lime plaster.*)

MATERIALS

Reinforcing mesh (where required) shall be USG Stucco Mesh applied with stucco furring nails or USG 3.4 lb. Self-Furring Diamond Mesh Metal Lath, applied with 1½" 11 gauge galvanized roofing nails. Nails to be spaced not over 6" on center vertically and 16" on center horizontally.

PORTLAND CEMENT—Shall comply with A.S.T.M. Designation C150-47.

LIME—Shall be MORTASEAL or RED TOP Masons Hydrate Lime or Quicklime as manufactured by the United States Gypsum Company.

SAND—Shall be clean and sharp and shall meet the requirements of American Standards Association specifications A-12-2.

WATER—Shall be clean, free from harmful quantities of organic matter and fit for domestic consumption.

FINISH—Shall be ORIENTAL Exterior (colored) Finish as manufactured by the United States Gypsum Company.

MIXING OF BASECOATS

The scratch (first coat) shall be mixed in the proportion of one bag of portland cement (one cubic foot); two bags of MORTASEAL (or two cubic feet of RED TOP Masons Lime Putty) and seven and one-half cubic feet of sand (approximately 45 No. 2 shovels). For application over stucco mesh or self-furring metal lath, approximately two pounds of fiber or hair shall be added to each mix of the above proportions.

The brown coat (second coat) shall be mixed in the proportion of one bag of portland cement, two bags of MORTASEAL (or two cubic feet of RED TOP Masons Lime Putty) and nine cubic feet of sand (approximately 55 No. 2 shovels).

APPLICATION

Scratch coat shall be applied in a full ⅜" coat, with sufficient pressure to form a good bond with masonry surfaces or to force it through and completely embed the stucco mesh. Cross scratch and, after set, damp cure for not less than 48 hours.

Brown coat shall be applied over the dampened scratch coat in a full ⅜" coat with sufficient pressure to form a good bond, rodded level and left rough, using a broom if necessary. After set, damp cure for at least 48 hours before applying the finish (third) coat.

CURING

Damp curing of each coat shall be accomplished by applying water in a fine, fog spray. Apply only as much water as is readily absorbed. The frequency of spraying required will depend on the weather exposure, more frequent applications being required during hot, dry and windy weather.

EXTERIOR STUCCO FINISH

ORIENTAL* EXTERIOR (COLORED) FINISHES

DESCRIPTION

ORIENTAL Exterior Finish is a factory-prepared stucco for exterior application over a portland cement-lime basecoat. It requires the addition of water only on the job.

Colors: Pewter Gray, Eggshell Ivory, Sun Tan, Stone Gray, Copper Rose, Alamo Buff, Mission Green, Cascade Green, Pueblo Tan, Indian Coral, Rancho Brown and White.

FUNCTION AND UTILITY

FACTORY PREPARED—Uniformity in formulation insures endurance under all weather conditions. Avoids possibility of job-mixing errors.

INTEGRAL COLORING—Prevents variations possible where colors are added at site.

DECORATION—Requires none.

ADAPTABLE to any texture.

LIMITATIONS

1. Not designed for use as a smooth trowel finish.
2. Requires a portland cement-lime basecoat.

PLASTERING SPECIFICATIONS

GENERAL PROVISIONS

When exterior stucco is applied during cold weather, longer curing periods are necessary. In freezing weather, do not apply ORIENTAL Exterior Stucco unless special precautions are taken to keep the materials at a temperature above 50° F. during mixing and for at least 48 hours after application.

SCOPE

Unless otherwise shown on drawings, all exterior walls shall be finished as herein described.

MATERIALS

Exterior finish coat shall be ORIENTAL Exterior colored finish as manufactured by the United States Gypsum Company. Color and texture to be designated and approved by the architect or his representative.

MIXING AND APPLICATION

ORIENTAL Exterior colored finish shall be mixed and applied in strict accordance with the manufacturer's directions.

*Trademark Reg. U. S. Pat. Off.

USG SHEATHING

DESCRIPTION

USG* Sheathing is a fireproof gypsum sheathing material. It is made in large unit sheets 2′x8′x½″ with a new type water-resistant "asphalted" gypsum core enclosed in a specially treated, water-repellent, heavy black paper. The long edges are V-tongued and grooved.

FUNCTION AND UTILITY

FIREPROOF—The gypsum core is incombustible and will not communicate high temperatures until completely calcined—a slow process.

RESISTANCE TO WEATHER AND MOISTURE—The gypsum in the core is thoroughly inter-mixed with asphalt type emulsion. In addition, the tough paper covering is given a special water-repellent treatment. This combination provides an amazing resistance to weather. The ability to "weather all weather" makes possible open storage on the job and exposure on the framing during construction without appreciable loss of structural value. It does not warp or buckle.

VAPOR PERMEABILITY—USG Sheathing has an average permeability of 27.3 grains per sq. ft. per hr. per inch of mercury vapor pressure difference.

ADDS STRUCTURAL STRENGTH—Wet or dry, USG Sheathing provides unusual lateral bracing to the frame. (See technical data.)

WIND-TIGHT JOINTS—The inter-locking V-tongue and groove joints remain snugly fitted, thus minimizing wind infiltration.

ECONOMICAL

a. Unit cost of material is low.
b. Full dimension—no face loss.
c. Building paper eliminated except where required by building regulations.
d. Minimum of waste—sheets fit standard 16″ or 24″ stud spacing.
e. Up to 1000 sq. ft. can be applied by one man in eight hours.

LIMITATIONS OF USE

1. *Maximum Stud Spacing*

USG Sheathing is designed for use on stud centers up to 24″ for exterior finishes of wood siding, brick veneer, and stucco. For shingle exteriors the maximum stud centering is 16″.

2. *Attachment of Exterior Finishes*

Wood siding, mesh reinforcement, nailing strips, wall ties, etc., shall be secured to the framing members by nailing through the USG Sheathing.

USG Sheathing being applied to wood frame house

TECHNICAL DATA

1. STRENGTH TO RESIST LATERAL DISTORTION

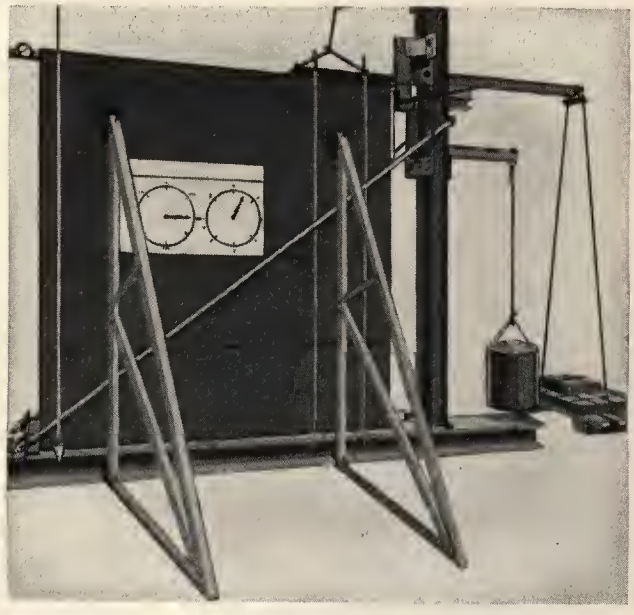
Comparative tests have been conducted in USG Research Laboratories and attested by Phil C. Huntly, Consulting Engineer. Tested dry, USG Sheathing applied to an 8′x8′ panel of 2″x4″ framing on 16″ centers had a lateral distortion of .498 inch under a racking load of 1850 lbs.

A similar panel was subjected to the equivalent of 5½ years of average United States rain-fall in a giant "weatherometer" and with the same load of 1850 lbs. the distortion was only 1.125 inches.

Under this same load a similar frame sheathed with 1″x8″ dry wood sheathing resulted in a distortion of 10.312 inches.

2. INSULATION

Thermal conductance is 2.86 and thermal resistance is 0.35, both for ½″ thickness.



USG Sheathing Panel in Lateral Distortion Machine
Load of 1850 lbs. applied at upper right hand corner of 8′x 8′ Test Panel
Lateral distortion on Dry Panel—.498 inch
Lateral distortion on Wet Panel—1.125 inches

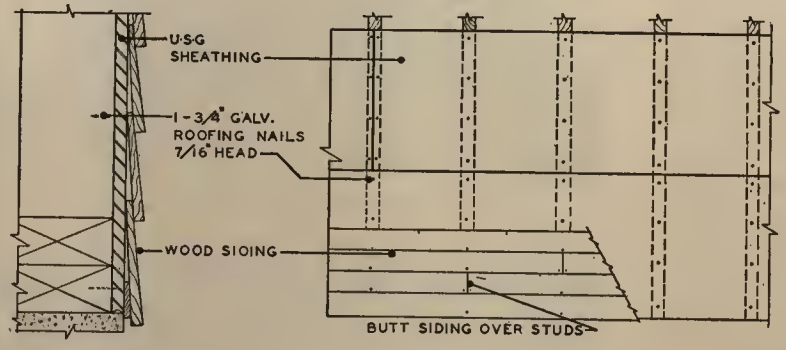
*Trademark Reg. U. S. Pat. Off.

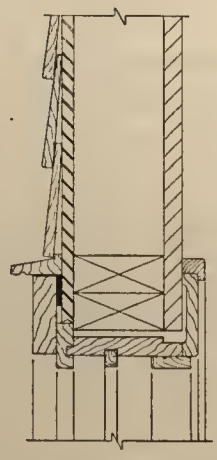
USG SHEATHING

WALL AND WINDOW DETAILS

SCALE: SECTIONS—1½"=1'-0" ELEVATIONS—⅜"=1'-0"

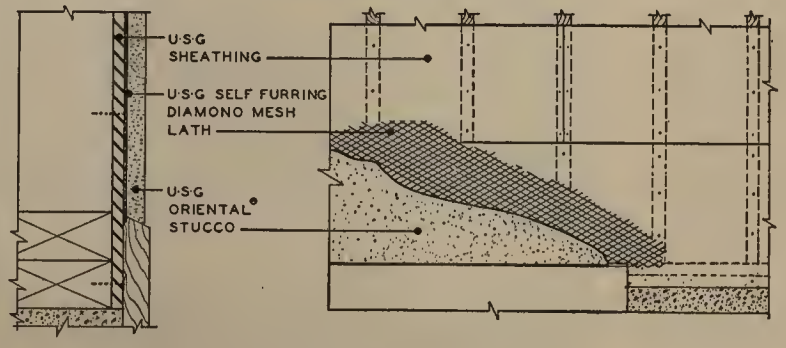
WOOD SIDING

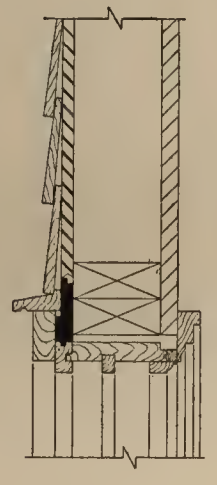




FRAMES WITH 3/4" BLIND STOPS SHALL HAVE WOOD STRIPS BETWEEN THE SHEATHING AND TRIM

ORIENTAL STUCCO

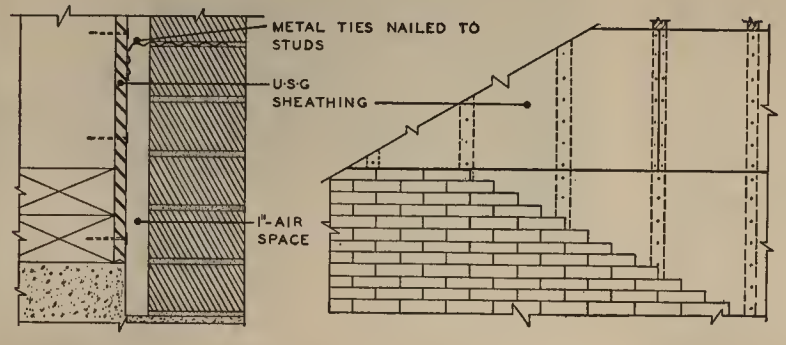




FRAMES WITH THIS REVERSIBLE BLIND STOP PERMIT THE USE OF 1/2" U·S·G SHEATHING WITHOUT SPECIAL FILLERS UNDER TRIM.

IF THESE FRAMES ARE NOT LOCALLY AVAILABLE SPECIFY FRAMES FOR 1/2" USG SHEATHING.

BRICK VENEER



FROM: NATIONAL DOOR MFGR'S ASSOC. MANUAL, WSS-45

USG SHEATHING

SPECIFICATIONS FOR USG SHEATHING

SCOPE

Unless otherwise shown on plans, all exterior walls shall be sheathed according to these specifications.

MATERIALS

Sheathing shall be USG Sheathing as manufactured by the United States Gypsum Company, ½" x 24" x 8'0". *Nails* shall be galvanized, 7/16" head diameter, 1¾" long roofing nails, having No. 11 gauge barbed shanks.

APPLICATION

Apply USG Sheathing with the long dimension across the supports and with the groove edge down, interlocking the tongue and groove edges. Ends of sheets shall abut over centers of supports, and all end joints shall be staggered. Fit snugly around all window and door openings. Secure sheathing to studs with nails spaced approximately 4" on centers, 7 nails per 24" sheathing width per support except where exterior finish is secured to the frame with nails driven through the sheathing and into the studs, in which case nails shall be spaced approximately 8" on center 4 nails per 24" sheathing width per stud.

Starter nails shall be not less than ⅜" from edges or ends of sheathing.

OPTIONAL INCLUSIONS

1. *USE OF WOOD SIDING OVER USG SHEATHING*

Apply siding directly over USG Sheathing, securing it with nails driven through sheathing and into studs. Nails shall have a minimum penetration of 1¼" into the studs. End joints of siding shall be over centers of studs.

2. *USE OF MASONRY VENEER OVER USG SHEATHING*

Masonry ties shall be attached with nails driven through the sheathing and into the studs, using nails of sufficient length to penetrate 1¼" into the studs. (At least 6d common nails.) Ties shall be spaced vertically to conform with coursing of masonry veneer.

3. *USE OF SIDE WALL SHINGLES OVER USG SHEATHING* (Wood, Slate or Asbestos-Cement).

Apply 1" x 2" wood furring strips horizontally over the USG Sheathing spaced to correspond to the shingle exposure. Secure strips with nails driven through sheathing. Use nails of sufficient length to provide at least 1¼" penetration into studs (at least 8d common). Use at least one nail at each intersection of stud and furring.

NOTE TO ARCHITECT

1. *Use of Stucco over USG Sheathing*—Stucco may be applied over USG Sheathing either by the use of furring strips and expanded metal lath or by the use of self-furring 3.4 lb. USG Diamond mesh lath nailed through sheathing and into studs with large headed nails of sufficient length to provide at least 1¼" penetration into studs. See Sweet's catalog or AIA file 20-B-1.

2. *Federal and A. S. T. M. Specifications*

USG Sheathing complies with Federal specifications for Gypsum Sheathing Board. SS-S-276 and A.S.T.M. (American Society for Testing Materials) Standard Specifications, A.S.T.M. Designation: C79-42. These specifications require only plain core, plain paper. USG Sheathing exceeds these with water repellent gypsum core and water repellent paper.

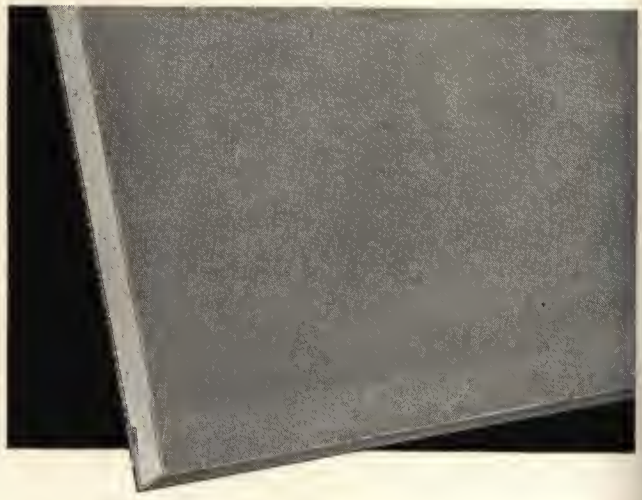
SHEETROCK*

ONE-HALF INCH RECESSED EDGE WALLBOARD

DESCRIPTION

½" SHEETROCK is composed essentially of a gypsum core encased in tough paper; a heavy manila finished sheet on the face side and a strong liner paper on the back side. The long edges are recessed (thinner edges) to form a shallow channel for embedding and concealing the joint reinforcement—PERF-A-TAPE*—when 2 panels are butted. For sizes see Technical Data for SHEETROCK. (Page 4).

PERF-A-TAPE JOINT SYSTEM—consists of a strong paper tape and cement. Both products engineered for SHEETROCK joint reinforcement and concealment. The tape is made of a special, perforated, strong paper with its edges chamfered. The cement is designed for low shrinkage, maximum bond and workability.



FUNCTION AND UTILITY

½" Recessed Edge SHEETROCK wallboard provides the following features:

FIREPROOF. SHEETROCK will not burn or support combustion. It will not transmit temperatures greatly in excess of 212° F. until completely calcined—a slow process.

STRONG FLUSH JOINTS. PERF-A-TAPE provides a system for reinforcing SHEETROCK joints. The strength of the finished PERF-A-TAPE joint is as great as that of the board itself. The joinings between the SHEETROCK panels are concealed with a specially processed fiber tape bonded to the board with a cement of unusual strength and adhesiveness.

DECORATION. The face paper on SHEETROCK is a strong sheet with a highly calendered manila surface which is suitable for any type of decorative treatment, such as paint, texture, wallpaper, and permits repeated re-decoration during the life of the building.

CRACK-RESISTANT. "Welded" together by the PERF-A-TAPE Joint System, SHEETROCK panels form walls and ceilings that are extremely resistant to cracks caused by frame movement, vibration or settlement.

NON-WARPING. Expansion or contraction of SHEETROCK under normal atmospheric changes is negligible, consequently it will not warp or buckle.

DRY WALLS. Eliminates needless water in construction. Saves on cost of temporary heat in cold weather construction.

SPEED. Precast panels of SHEETROCK are easily cut and quickly applied.

HORIZONTAL WALL APPLICATION. (The horizontal application of SHEETROCK is applying the long length of the SHEETROCK panel at right angles to the framing members.) The strength of SHEETROCK and the joint system is such that panels may be erected horizontally on walls without the need of headers behind the horizontal joints. This method generally reduces the total lineal footage of joints, produces more inconspicuous joints, gives greater bracing strength and is the recommended application method.

LIMITATIONS OF USE

1. *Maximum Spacing of Framing Members.* ½" Recessed Edge SHEETROCK is designed for use on framing centers up to 24".

2. *Shower Stalls.* SHEETROCK should not be used in damp locations, as in shower stalls.

⅜" SHEETROCK WALLBOARD

⅜"SHEETROCK wallboard is identical to ½"SHEETROCK in all physical respects except thickness. It is the standard gypsum wallboard for repair and remodel. It is likewise used in some new homes.

All the features listed under "Function and Utility of ½" SHEETROCK" are essentially the same for this product.

⅜" SHEETROCK is manufactured with three edges as follows:

Recessed Edge. For use with PERF-A-TAPE where joint reinforcement and concealment is necessary.

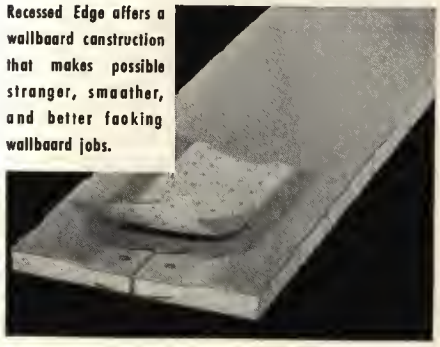
Beveled Edge SHEETROCK has a ⅛" to 3/16" bevel on the long edges. It may be used where the joint is to be featured.

Square Edge SHEETROCK is manufactured for use with batten strips or other decorative joint treatment. Its primary use is for temporary or industrial construction.

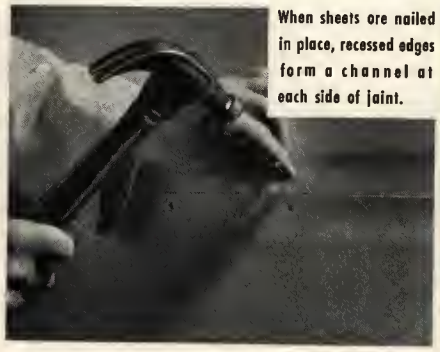
*Trademarks Reg. U. S. Pat. Off.

APPLICATION OF SHEETROCK

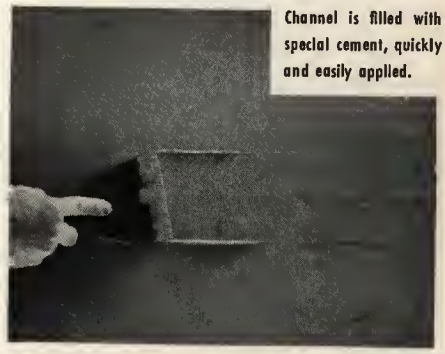
PERF-A-TAPE JOINT SYSTEM FOR SHEETROCK WALLBOARD



Recessed Edge offers a wallboard construction that makes possible stronger, smoother, and better looking wallboard jobs.



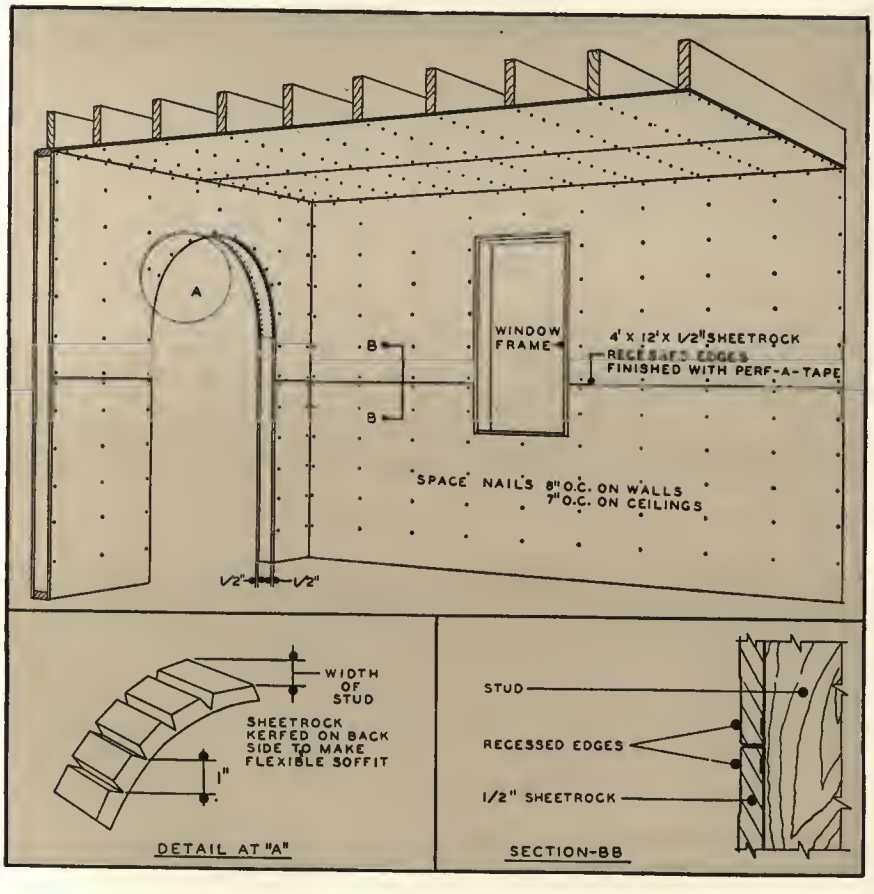
When sheets are nailed in place, recessed edges form a channel at each side of joint.

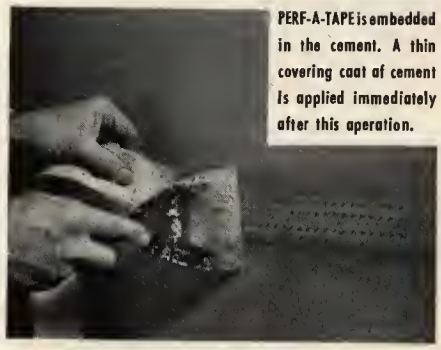


Channel is filled with special cement, quickly and easily applied.

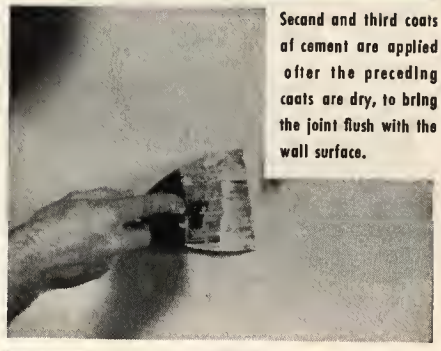
ERECTION

½" RECESSED EDGE SHEETROCK WALLBOARD

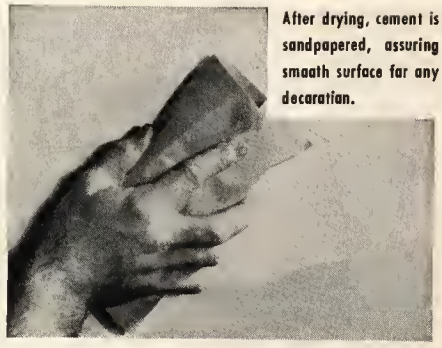




PERF-A-TAPE is embedded in the cement. A thin covering coat of cement is applied immediately after this operation.



Second and third coats of cement are applied after the preceding coats are dry, to bring the joint flush with the wall surface.



After drying, cement is sandpapered, assuring smooth surface for any decoration.

ADVANTAGES OF HORIZONTAL APPLICATION OVER NORMAL VERTICAL APPLICATION

We recommend horizontal application on walls and ceilings for the following reasons:

1. Reduces necessary joint treatment footage up to 25 per cent.

2. Strongest dimension of board runs across framing members.

3. Bridges irregularities in alignment and spacing of framing members.

4. Eliminates need for headers.

5. Better bracing continuity—ties more framing members together.

6. Joints are at convenient height on walls for the finishing operation.

TECHNICAL DATA FOR SHEETROCK

Fire Endurance Ratings of Gypsum Wallboard Partitions*

Material	Fill between studs	Fire Endurance Period	
		Bearing	Non-bearing
½" Gypsum Wallboard	None	40 Min.	40 Min.
⅜" Gypsum Wallboard	None	25 Min.	25 Min.
¼" Gypsum Wallboard	No Tests	..	..

NOTE: Ratings are for partitions constructed of 2" x 4" studs (16" o.c.), with Gypsum Wallboard nailed on both sides of studs.
*As published in National Bureau of Standards Publication BMS 92

BENDING RADII

THICKNESS	LENGTHWISE	WIDTH
½"	20'*	..
⅜"	7½'	25'
¼"	5'	15'

*Bending two ¼" pieces successively permits radii shown for ¼" SHEETROCK.

Notes:
1. To apply board, place a stop at one end of the curve and then gently and gradually push on the other end of the board, forcing the center against the framing until the curve is complete.
2. By moistening the face and back paper thoroughly and allowing the water to soak well into the core, the board may be bent to still shorter radii. When the board dries thoroughly, it will regain its original hardness.

NORMAL STOCK SIZES AND SPECIFICATIONS

Thickness	Edge	Width	Length	Approx. Weight Lbs. per M Sq. Ft.	Recommended Support Spacing	Joint Treatment	Size Nail Used	Nails Lbs. M Sq. Ft.	Maximum Nail Spacing	Decoration
½"	Recessed	4'	6, 7, 8, 9, 10 & 12	2100	16" or 24" o.c.	PERF-A-TAPE	5d Cement Coated	6	8" on Walls 7" on Ceilings	Paint or Wallpaper
⅜"	Recessed	4'	6, 7, 8, 9, 10 & 12	1550	16" o.c.	PERF-A-TAPE	4d Cement Coated	4½	Same as above	Paint or Wallpaper
⅜"	Beveled	4'	8, 10 & 12'	1550	16" o.c.	No treatment required	4d Cement Coated	4½	Same as above	Paint
¼"	Square	4'	7, 8, 9 & 10'	1100	16" o.c.	SHEETROCK Finisher, PERF-A-TAPE, or Panel Strips	4d Cement Coated, 6d over existing plaster	4d-4½ 6d-6	Same as above	Paint or Wallpaper

NOTE: *Insulating SHEETROCK*—Any of the above are available with insulating foil back in sizes given, at slight additional cost.

INSULATING SHEETROCK WALLBOARD

DESCRIPTION

Insulating SHEETROCK is regular SHEETROCK wallboard which has a sheet of bright aluminum foil securely attached to its back surface.

FUNCTION AND UTILITY

INSULATION. The bright metal foil has the property of reducing heat flow out of the home in the winter and into the home in the summer. The thermal insulating value of Insulating SHEETROCK properly applied in a wall is equivalent to that of ½" fiber insulating board.

VAPOR BARRIER. Insulating SHEETROCK provides an efficient vapor barrier which retards the passage of vapor through the interior lining of exterior walls, minimizing the possibility of condensation within the wall. For explanation of the effect of vapor barriers on condensation, see page 5.

All items describing the function and utility of ½" Recessed Edge SHEETROCK also apply to this product.

THERMAL RESISTANCE (R) OF INSULATING SHEETROCK FACING AN AIR SPACE OF ¾" OR MORE

All figures based on 1947 Guide of the ASHVE

DIRECTION OF HEAT FLOW	Thickness of Insulating Sheetrock		
	½ inch	⅜ inch	¼ inch
DOWNWARD Use these coefficients for ceilings and sloping surfaces under summer conditions	6.87	6.78	6.69
UPWARD Use these coefficients for ceilings and sloping surfaces under winter conditions	2.53	2.44	2.35
HORIZONTAL Use these coefficients for walls under both summer and winter conditions	2.53	2.44	2.35

SPECIFICATIONS FOR ½" RECESSED EDGE SHEETROCK

SCOPE

Unless otherwise shown on plans, all interior walls and ceilings shall be finished with gypsum wallboard.

MATERIALS

Gypsum Wallboard shall be ½" Recessed Edge SHEETROCK, manufactured by the United States Gypsum Company.

Nails shall be 5d, 13½ gauge, cement-coated, flathead.

ERECTION

Framing shall be in accordance with plans and specifications *and/or shall pass minimum F.H.A. requirements.* Headers shall be provided for solid support for fixture attachment wherever necessary.

SHEETROCK panels in lengths as long as possible shall be applied to ceilings first and then walls. All panels shall be applied with the long edges at right angles to the framing members. All ends shall be supported on framing members and joints shall be staggered. Joints on opposite sides of partitions shall not fall on the same stud.

Recessed edges shall be butted loosely together. Cut edges and mill ends shall be sanded down to provide a smooth joining.

SHEETROCK wallboard shall be securely nailed to supports, using 5d, 13½ gauge, cement-coated, flathead nails, 1⅝" long. Nails shall be spaced not less than ⅜" from edges and ends of board and shall be spaced 5" to 7" apart on ceilings and 6" to 8" apart on walls. Nails shall be driven "home," with heads slightly below the surface. Do not use a nail set.

SPECIFICATIONS FOR PERF-A-TAPE JOINT SYSTEM

MATERIAL

Joint treatment shall be PERF-A-TAPE joint reinforcing tape and cement, manufactured by United States Gypsum Company.

APPLICATION

Cement included in PERF-A-TAPE Joint System shall be mixed according to the manufacturer's directions.

All internal and external corners and angles shall be reinforced with PERF-A-TAPE Joint System and finished in the following manner:

The recess between two SHEETROCK panels shall be filled with a sufficient thickness of cement to completely hide the board at all points. The tape shall be centered on the joint and, with a SHEETROCK knife or suitable tool, pressed tightly to the two panels. The excess cement, squeezed from between the tape and panels, shall be laid smoothly on top of the tape.

When the first coat is thoroughly dry, a second application of cement shall be spread evenly over the entire joint to beyond the shoulder of the recess.

When the second coat is thoroughly dry, the third and finish coat shall be applied so as to even up all surfaces of the joint.

All nail depressions shall receive at least two coats of cement, leaving them filled even and flush with the surface of the board.

Between applications of cement, rough spots or areas shall be sanded smooth wherever necessary. When thoroughly dry, the finish coat shall be sanded wherever necessary to leave all joints and nail spots flush and smooth and ready for decoration.

WOODGRAINED SHEETROCK

DESCRIPTION

Woodgrained SHEETROCK is a pre-finished gypsum wallboard combining the appearance of wood with the fireproof and other advantages of gypsum. The appearance of graining, knots and coloring characteristics of bleached mahogany, knotty pine and walnut are faithfully reproduced on the face of SHEETROCK by photographic and printing processes. A factory-applied lacquer helps protect and preserve the finish. It is made in 3/8" thickness and 4' widths—8' and 10' lengths. Nails are available in matching colors.

FUNCTION AND UTILITY

Woodgrained SHEETROCK wallboard is recommended for use in libraries, dens, hallways, finished attic and basement rooms, shops, offices, restaurants, clubs, display rooms, etc., where a wood paneled effect is desired. It provides the following features:

ATTRACTIVE WOOD PANEL EFFECT—SHEETROCK Woodgrained finishes in bleached mahogany, knotty pine and walnut reproduce in minute detail the appearances of color, graining, knots, burling and individuality of real wood panels.

FIREPROOF—Woodgrained SHEETROCK has the appearance of wood but will not burn because of its fireproof gypsum core. It adds fire protection to the building.

DOES NOT WARP OR BUCKLE—Woodgrained SHEETROCK has all the durability and non-warping qualities of regular SHEETROCK. This advantage is important in woodgrained finishes. It means that panels will not pull out from under mouldings and that they will maintain the straight, even surface which they have when first erected.

EASY TO CUT—SHEETROCK in woodgrained finishes is easily cut with a saw, or it may be scored and snapped.

LOW IN COST:

(a) Unit cost of material is low.

(b) Large unit sheets are easily and quickly erected.

(c) Colored nails eliminate nailhead treatment.

(d) Surface and decoration in one operation—saves decorating cost—eliminates joint treatment—saves time.

NO PANEL STRIPS OR JOINT TREATMENT REQUIRED—The fine line joint obtained by butting *square edge* knotty pine Woodgrained SHEETROCK panels together looks like a continuation of the random width plank field pattern. Bleached mahogany and walnut Woodgrained SHEETROCK have *beveled edges* which

make butted "V" joints a part of the decoration instead of something to be hidden. Picture mouldings, cove mouldings, chair rails, plate rails, and base assemblies may be of a wide variety commonly used. Mouldings may be stained to harmonize or contrast with Woodgrained SHEETROCK.

Maintenance—Woodgrained SHEETROCK is protected by its factory applied lacquer finish. It is easy to clean.

If additional protection is desired or needed, a deluxe finish may be secured by first applying a coat of white shellac, then a coat of wax for a dull finish or a coat of clear varnish for glossy finish.

Caution: Do not apply varnish without first using shellac.

LIMITATIONS OF USE

1. *Maximum framing centering.* Woodgrained SHEETROCK is not recommended for use on framing centers over 16".

2. *Excessive wear and cleaning.* Where excessive wear is expected, panels should be treated with a coat of white shellac, then waxed or varnished. Where tables or chairs frequently touch a wall, a wood chair rail should be provided.

TECHNICAL DATA FOR WOODGRAINED SHEETROCK

Same as for 3/8" SHEETROCK wallboard.

TYPICAL INSTALLATIONS—WOODGRAINED SHEETROCK

SPECIFICATIONS FOR WOODGRAINED SHEETROCK

SCOPE

Where indicated on plans, interior walls shall be finished with pre-decorated gypsum wallboard.

MATERIALS

Pre-decorated gypsum wallboard—shall be ⅜″ Woodgrained SHEETROCK, manufactured by United States Gypsum Company. Type of grain shall be as shown in plans.

Nails—shall be of matching color.

As an alternate, Woodgrained SHEETROCK can be securely nailed with 5d finish nails driven at 45° angle, countersunk and puttied with Spackling Putty or plastic wood, colored to match finish on SHEETROCK.

ERECTION

Supports such as studs, joists, or furring strips shall be spaced 16″ on center and shall be level and plumb. All joints or edges shall be supported by framework or headers. Butt edges together, placing joints to get balanced panel effect, or as shown in plans. Space nails 6″ to 8″ o.c. Use padded or plastic head hammer to drive colored nails.

Wax or varnish finish. The Woodgrained SHEETROCK shall be given a *coat of white shellac*, then a coat of (wax) (varnish). Specify brand.

SHEETROCK TILEBOARD

DESCRIPTION

SHEETROCK Tileboard is a gypsum wallboard having a surface indented with tile-like impressions 4¼″ x 4¼″ square. When decorated, it simulates tile. It is made in standard ⅜″ thickness and 4′ widths—8′ and 10′ lengths.

FUNCTION AND UTILITY

SHEETROCK Tileboard is used in bathrooms, kitchens, lavatories, dairy buildings, restaurants and any place where a tile design is wanted. SHEETROCK Tileboard provides the following features:

ECONOMICAL SHEETROCK Tileboard, low in cost, with its close simulation of ceramic tiling and inherent speed of erection, permits faster completion of any room where a tile effect is desired.

EASILY DECORATED. It can be decorated with gloss oil paint or enamel. When a solid color is used for "tiles" and a lighter color for joints, the appearance of ceramic tile is more nearly produced.

SPECIFICATIONS FOR SHEETROCK TILEBOARD

SCOPE

Where indicated on plans, interior walls (describe area) shall be finished with gypsum tileboard. (*Not recommended for shower walls.*)

MATERIALS

Gypsum tileboard shall be ⅜″ SHEETROCK Tileboard. manufactured by United States Gypsum Company.

Nails shall be 4d cement coated flathead.

ERECTION

Studs shall be spaced 16″ on centers and shall be level and plumb. Headers shall be provided wherever fixtures are to be installed. Tileboard shall be of sufficient length to span wall lengths (up to 10 feet). When end joints cannot be avoided, place them over and under openings. Cut back as near the center of the tile squares as possible and make an even match. Leave a space of at least ¼″ between tileboard and tub rim. Set bottom edge of sheet in a good grade of waterproof caulking compound and fill ¼″ space completely. Nail tileboard in "field" of tile with 4d cement coated nails. Drive nails home and fill hammer depressions with SHEETROCK Finisher. Joints and corner angles shall be treated with PERF-A-TAPE Joint System with cement grooved to match tile impressions.

QUARTER-INCH SHEETROCK WALLBOARD

DESCRIPTION

Quarter-inch SHEETROCK is a utility gypsum wallboard. It is made with square edges only, 4′ wide—7′, 8′, 9′, and 10′ long. Its highly calendered ivory colored surface takes any type of decoration.

FUNCTION AND UTILITY

Quarter-inch SHEETROCK is ideal for covering old unsightly walls and ceilings, in repair work, and for temporary or "cost factor" walls. ceilings and partitions in stores, offices, factories, etc.

FIREPROOF AND DURABLE. Quarter-inch SHEETROCK, with its gypsum core, has all the fireproof, non-warping, and decorative features of SHEETROCK.

LIGHT WEIGHT. Its light weight makes it easy to handle and apply on ceilings.

CURVED SURFACES. Quarter-inch SHEETROCK is more flexible than thicker SHEETROCK and can be safely bent to a 5′ radius lengthwise. This makes quarter-inch ideal for curved surfaces and display work.

LOW IN COST. Unit cost is lower than most other types of wallboard and is in the same price range as paper wallboard.

TAKES ANY JOINT TREATMENT. Joints may be reinforced with PERF-A-TAPE, treated with panel strips or simply filled with SHEETROCK Finisher.

TAKES ANY DECORATION. Its ivory colored surface provides an ideal surface for paint, wallpaper or textured decorations.

IDEAL FOR COVERING OLD WALLS AND CEILINGS. Quarter-inch can generally be applied directly over old walls without removing wood trim. PERF-A-TAPE Joint Treatment provides smooth "joint-free" walls.

LIMITATIONS OF USE

1. *Maximum stud spacing.* Quarter-inch SHEETROCK is designed for use on stud centers up to 16″.

2. *New construction.* Not designed for use in normal new construction. One-half inch SHEETROCK is recommended.

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Carol J. Dyson, AIA

UPSON
Laminated
PANELS

UPSON QUALITY PRODUCTS

For Crackproof Dry-Built Construction

THE UPSON COMPANY

A full generation — better than thirty-seven years ago, in fact, The Upson Company was founded at Lockport, New York.

Specialists in the development of fibre products, the new company sensed the potential market for a dependable wall and ceiling lining—a desire on the part of the public to get away from wet plaster and to turn to more efficient dry-wall construction.

Intensive research and often years of development have been behind every Upson Product before any attempt to market it has been made. Emphasis has always been on quality and performance rather than price.

The wisdom of such a policy is best reflected in the Company's growth. From a modest little plant having only 15,000 square feet of floor space, and capitalized at $50,000, The Upson Company has grown until today its present huge manufacturing facilities extend over 23 acres.

As striking as the growth in plant capacity is the comparison of the Upson *Board* of yesterday with the marvelously efficient Upson *Panels* of today.

No better proof of this exists perhaps than the thousands of Upson Panel installations which have been made both in private buildings and Governmental housing projects. Upson Panels have more than justified the faith architects and builders have placed in them.

UPSON STRONG-BILT

Upson STRONG-BILT Panels provide the ideal wall and ceiling lining for new small home construction. Strong, rigid (6 plies, approximately 3/8" thick), efficient insulating value . . . Forever CRACKPROOF.

Strong-Bilt Panels are eight feet high and room length. They are also available in four foot widths for use in paneling.

Upson Strong-Bilt Panels are easy to handle—quick to apply. They save time—save labor—give added dollar value to any home.

UPSON KUVER-KRAK

Cracked plastered ceilings have long been a problem. Surveys made by impartial agencies show that two out of three homes have cracked plaster in one or more rooms.

Patching a badly cracked ceiling is at best a dirty, mussy job with no guarantee of permanency. Upson KUVER-KRAK Panels were expressly designed to answer this problem.

KUVER-KRAK Panels are applied to furring strips, right over the old plaster. The job is done quickly, efficiently with little muss or fuss. The result is a ceiling of great beauty and permanence—forever CRACKPROOF. A 5 ply panel—a full 1/4" in thickness.

UPSON DUBL-THIK

With the same degree of acceptance accorded STRONG-BILT in other rooms of the house, Upson DUBL-THIK Fibre-Tile has taken its well earned place in thousands of baths and kitchens.

In no sense is DUBL-THIK intended as an imitation or substitute for any other material. It has natural, inherent, advantages which recommend its use wherever tile-like beauty plus extra serviceability must be achieved on a limited budget.

Properly finished with a good quality paint or enamel Dubl-Thik provides a highly attractive, colorful, water-repellent surface for bathroom and kitchen. It is 5 plies, slightly over 1/4" in thickness. Available in regular 4" tiled patterns; also in smooth, unscored surface.

UPSON 3/16" PANELS

Upson 3/16" Panels are best described as a lighter weight, general utility panel. Its 4 plies provide ample strength. For temporary construction, signs, displays, and similar jobs.

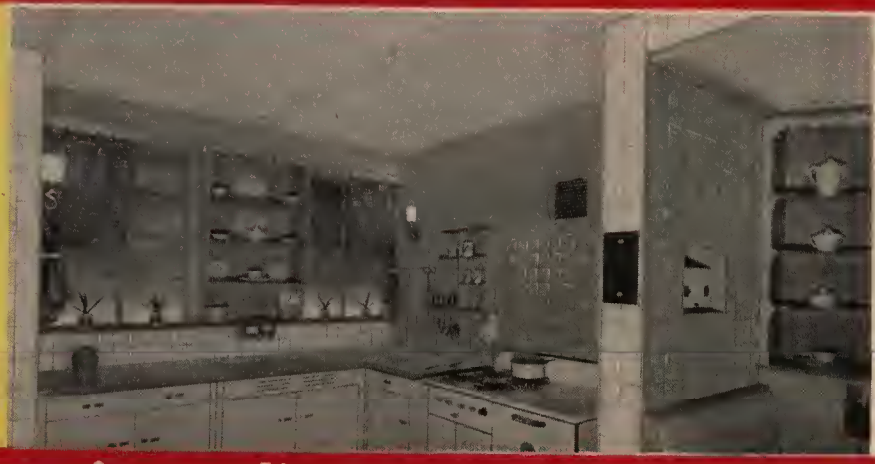
Upson 3/16" Panels have the same beautiful painting surface as the heavier weight Upson Panels.

Upson 3/16" Panels also lend themselves to an almost endless variety of industrial uses. Many business establishments make a practice of keeping a supply on hand.

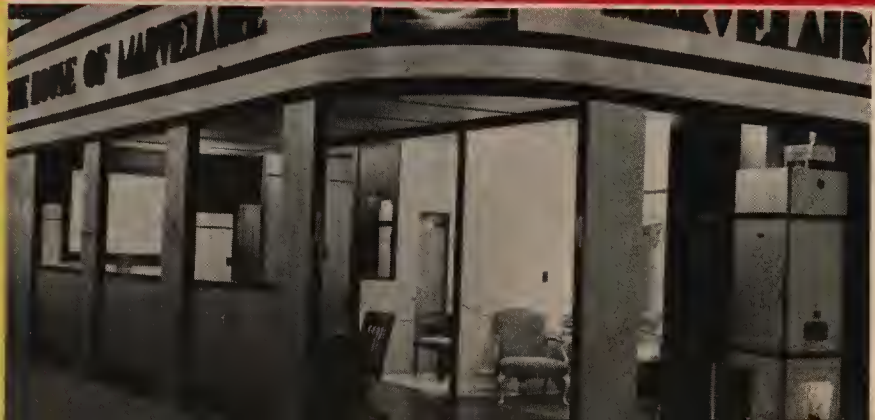
Panels for dry-built, full-wall construction

Panels for re-covering cracked plaster ceilings

Fibre-Tile for sanitary baths and kitchens



for signs, displays—a lightweight general use panel



PHYSICAL CHARACTERISTICS

STRONG-BILT is a strong, 6 ply rigid panel approximately 3/8" thick, laminated for strength and rigidity.

It is impregnated with various gums, resins, and oils to make it water resistant and provide a better painting surface.

STRONG-BILT has a beautifully pebbled surface which is pre-sized at the factory, providing a perfect painting surface.

STRONG-BILT Panels are made in standard sizes 4 foot by 6, 7, 8, 9, 10, 12, 14 and 16 feet long—full-wall sizes, 8 feet wide and 14, 16 and 18 feet long.

STRONG-BILT Panels have high insulation value. Independent, authoritative tests show that STRONG-BILT Panels have up to 3.2/1 times the insulation value of plaster board and 2.6/1 that of Douglas Fir Panels. Thermal conductivity—.43 BTU.

USES

Upson STRONG-BILT Panels are specifically designed to provide a better, more efficient, CRACK-PROOF wall and ceiling lining for new construction.

They are applied quickly any time of the year. No waiting for plaster to dry. STRONG-BILT Panels are applied direct to studs with the Upson Floating Fastener. (See detailed directions, page 11)

While primarily designed for new small home construction, Upson STRONG-BILT Panels have a wide variety of other uses wherever an unusually strong, rigid wall surface may be needed.

Industrially, it is used in stores and factories for walls and ceilings, partitions, storage rooms, and many other uses.

STRONG-BILT may also be found in many schools, churches, and other public institutions.

EASY TO HANDLE

Two Men Handle A Panel Easily

By using wooden U clamps two men can easily handle a large 8' x 18' Upson Strong-Bilt Panel. Strong and Rigid. →

Panel Goes Through An Ordinary Door

Two men can carry an 8' x 18' Upson Strong-Bilt Panel through an ordinary door, measuring 2'6" x 6'8". Durable and Permanent.

→

Upson Strong-Bilt Panels Are Light In Weight

An Upson Strong-Bilt Panel 8' x 18' handles easier than some panel materials 4' wide and 8' or 10' long. Crackproof!

UPSON STRONG-BILT PANELS

APPLICATION

Upson STRONG-BILT Panels can be applied equally well to various types of construction; wood frame, brick veneer, concrete or cinder block, as well as to modern steel frame construction. They are equally suited to conventional, site or factory constructed houses.

FRAMING— It is essential in all types of construction to provide a continuous backing for all edges of STRONG-BILT Panels as well as for all decorative mouldings. By proper planning, practically all of this backing can be installed when framing the building.

Masonry, and concrete or cinder block construction should be furred 16" on centers and the furring so located as to provide a continuous nailing base for all panel edges and mouldings.

No. 2 FASTENERS— Upson No. 2 Floating Fasteners applied 12" apart on studs and joists anchor Strong-Bilt Panels from the back, avoiding face nailing and also provide for normal structural movement of studs and joists. Apply Fasteners to a solid base, not springy, with 3d coated nails. Do not use Fasteners under panel edges or around openings, but nail with 3d coated nails spaced 16" apart and 1/4" back from panel edge.

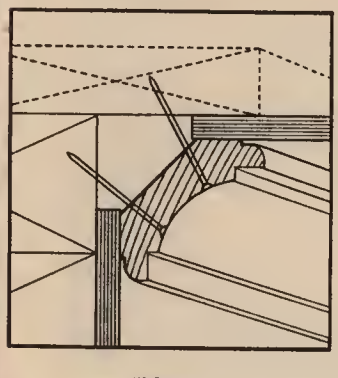


FIGURE 1

PANEL APPLICATION—Apply ceiling panels first. Allow for 1/4" space between all panels. At angle of ceiling and sidewall, leave sufficient space so that when applying cornice, nails can be driven into framing through space between panels, without nailing into edge of either ceiling or sidewall panels, as shown in Figure 1 at left. Wall panels should also be spaced to allow for proper nailing of inside corner moulding. See Figure 2.

Use a piece of 2x4 about 8" long to clinch STRONG-BILT Panels onto Fasteners. Face one side of block with a piece of panel, countersinking nails so they will not mar panels being installed.

Use a heavy hammer and start clinching Fasteners in center of panel working out from center to each edge. Center the pounding block over one fastener at a time. Hold panel against Fastener prongs. The first blow will then cause Fasteners to enter panel and the second will clinch them.

MOULDINGS— Panel joints should always be covered with a decorative moulding. Upson Shad-o-Line Mouldings, illustrated on Page 10 add interesting high lights and shadows as well as permitting the installation of mouldings before decorating. If standard mouldings are used, STRONG-BILT Panels should be decorated before the mouldings are installed. Nail mouldings securely, not to exceed 8" apart.

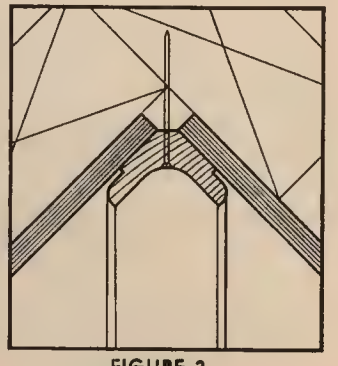
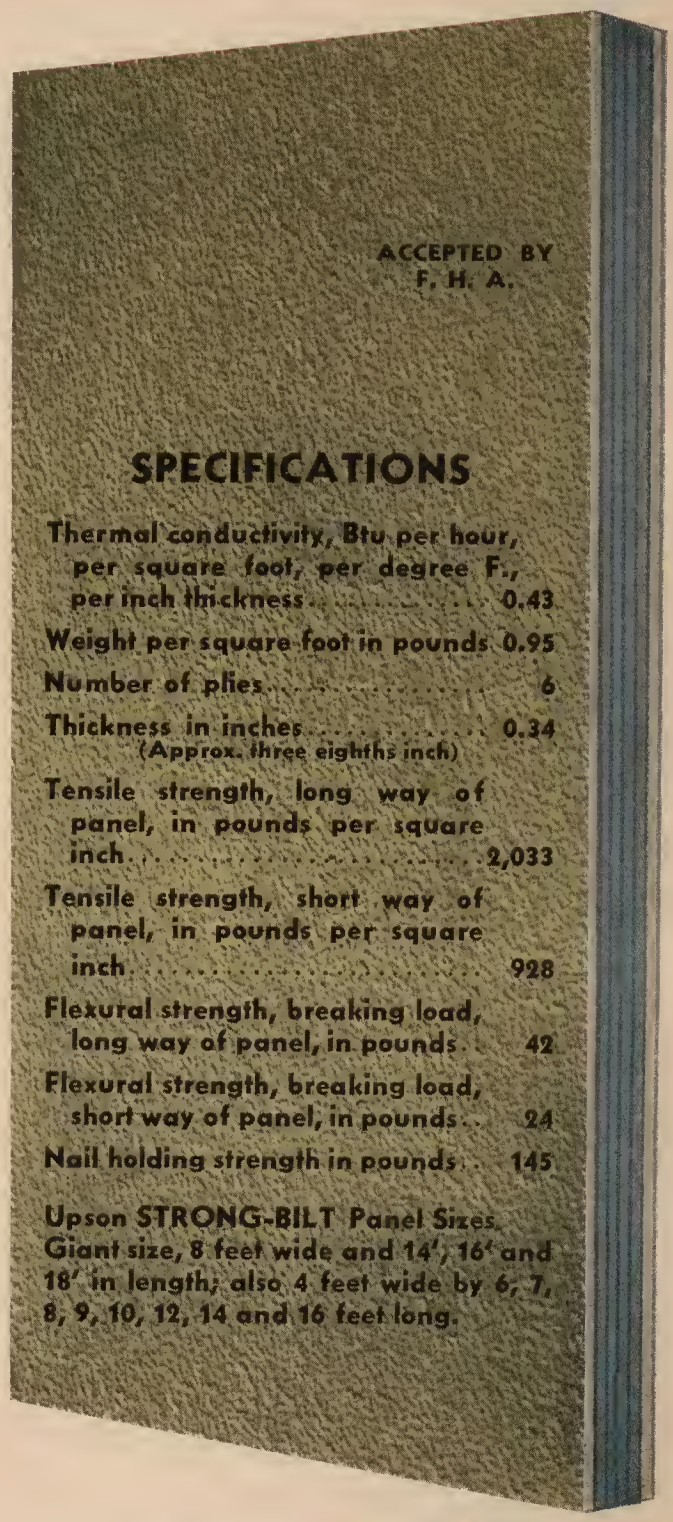


FIGURE 2



See Decoration Suggestions on Page 12.
Write The Upson Company, Lockport, New York, for detail application directions for Upson STRONG-BILT Panels.

PHYSICAL CHARACTERISTICS

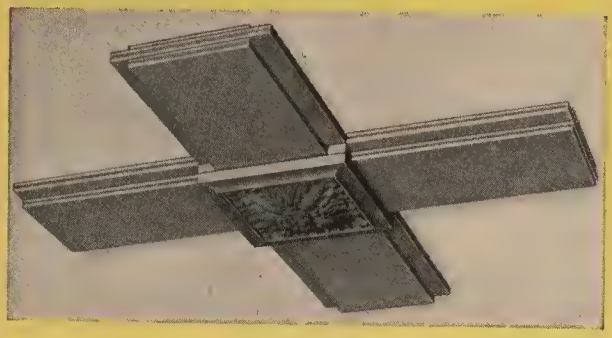
Upson KUVER-KRAK Panels, 5 ply, have identically the same pebbled surface as STRONG-BILT Panels. They are a full quarter-inch in thickness. The Panels come in 4 foot widths by 6', 7', 8', 9', 10', 12', 14', and 16' long.

USES

While designed primarily for re-covering cracked plaster ceilings, KUVER-KRAK Panels are also used extensively for repairing and remodeling walls and ceilings of older homes. Wherever there is need for a superior wall and ceiling surface, KUVER-KRAK Panels will serve admirably.

DECORATIVE ACCESSORIES

Beauty is added to the appearance of an Upson ceiling installation when Upson Decorative Blocks and Relief Ornaments are used in conjunction with Upson Duplex mouldings.



Upson Duplex mouldings are available in 2" strips mounted on a 3" base or in 3" on 4". These mouldings take full advantage of high lights and shadows—a beautiful effect.

APPLICATION

Upson KUVER-KRAK Panels can be applied over old cracked plaster or other type of wall covering to give a modern, fresh interior finish.

PREPARING OLD SURFACE

CRACKED PLASTER—Furr 16" on centers over old plaster, shimming to produce a true and level surface. Plan the paneling design and then apply furring accordingly, providing a continuous nailing base for all panel edges and all mouldings.

BRICK, CONCRETE OR CEMENT BLOCKS—Waterproof the walls with asphaltum. Furr horizontally 16" on centers. Cut in vertical furring to provide a continuous nailing base for panel edges and mouldings. Paint edges and back of KUVER-KRAK Panels with a good waterproof paint.

WOOD WAINSCOTING OR BEADED CEILING—It is not necessary to furr if the old surface is level and not springy, otherwise furr 16" on centers.

FASTENERS

On furring that has been shimmed space No. 2 Fasteners 8" apart so that every other Fastener falls directly over an old stud or joist. When Fasteners are applied directly to new studding located 16" on centers, space Fasteners 12" apart. Use 3d coated nails to apply Fasteners.

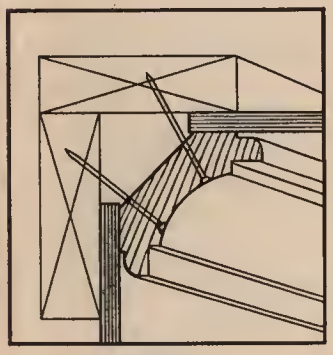


FIGURE 3

Do not use Fasteners under panel edges or around openings, but nail with 3d coated nails spaced 16" apart and 1/4" back from panel edge.

PANEL APPLICATION

Never force KUVER-KRAK Panels into place . . . always leave 1/4" space between panel edges.

Leave sufficient space between panels at angle of ceiling and sidewall, so that when applying cornice moulding, nails can be driven into furring through space between panels . . . without nailing into edge of either ceiling or sidewall panel, as shown in Figure 3 at left. Wall panels should also be spaced for proper nailing of inside corner mouldings. See Figure 4.

To clinch KUVER-KRAK Panels to Fasteners use a piece of 2 x 4 about 8" long. Face one side with a piece of KUVER-KRAK Panel countersinking the nails so they will not injure the panels being installed.

Using a heavy hammer start clinching Fasteners in center of panel, working out to each side. Center the pounding block over one Fastener at a time. Hold the panel against the Fastener prongs, when striking the first blow, thus insuring the prongs entering the panel. The second blow will clinch the prongs. Nail panel edges and around openings.

MOULDINGS

Upson Shad-o-Line Mouldings have been designed to permit the panels to move with normal structural settlement without showing the broken paint lines so common to most panel material installations. Shad-o-Line Moulding designs are illustrated on Page 10.

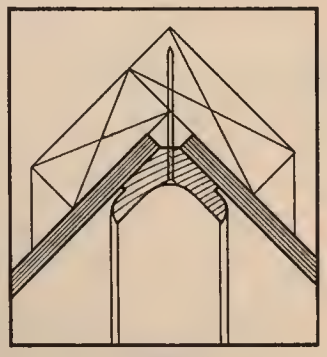
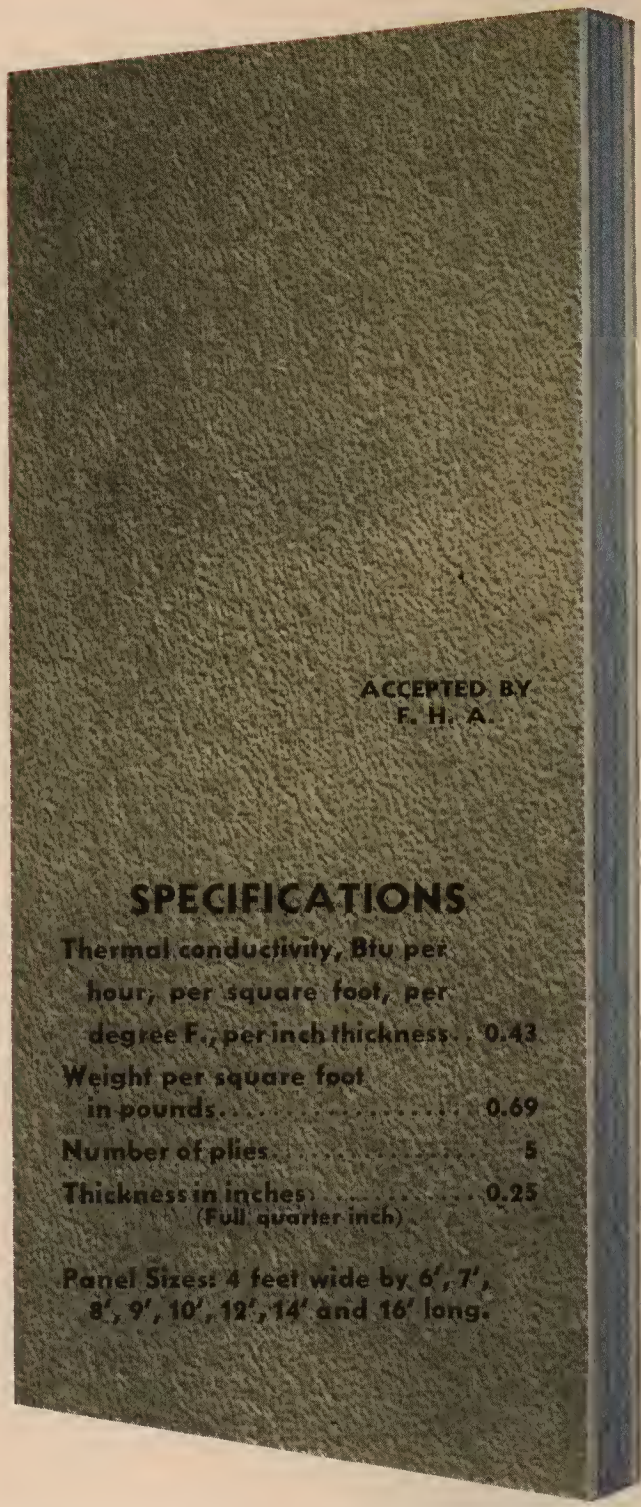


FIGURE 4

NOTE—If Shad-o-Line Mouldings are not used, KUVER-KRAK Panels must be painted before applying the standard wood moulding. All mouldings should be nailed securely, not to exceed 8" apart. Use finish nails of sufficient size so they will enter furring far enough for good holding power.



Detailed Directions for Decorating Upson KUVER-KRAK Panels are shown on Page 12.

Write The Upson Company, Lockport, New York, for detailed application instructions.

PHYSICAL CHARACTERISTICS

Upson DUBL-THIK Fibre-Tile comes in 5 ply panels 4 feet wide by 6, 8, 10, and 12 feet long. The panels are slightly over 1/4" in thickness—made of tightly compressed fibres, which will not easily break or fracture.

The surface, which comes unfinished, is available in either smooth or embossed 4" tile-like indentations. It is fuzz-free. Takes paint or enamel beautifully. Permits any architect or homeowner to carry out any decorative scheme.

DUBL-THIK has high insulation value.

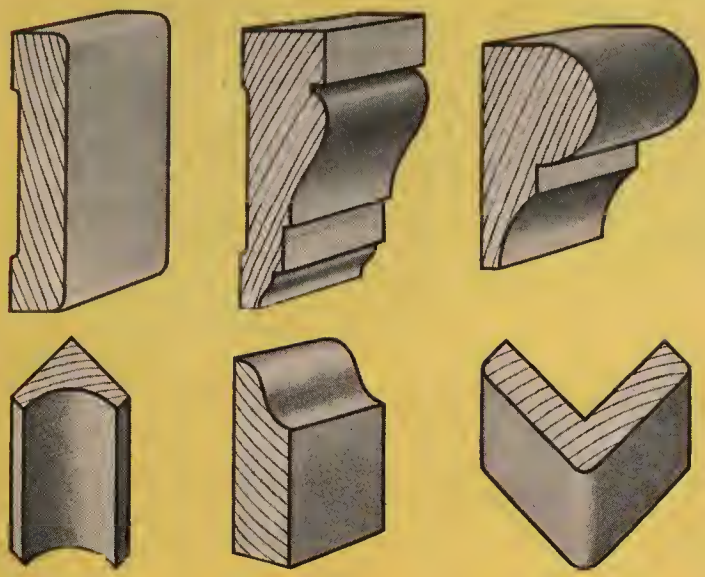
USES

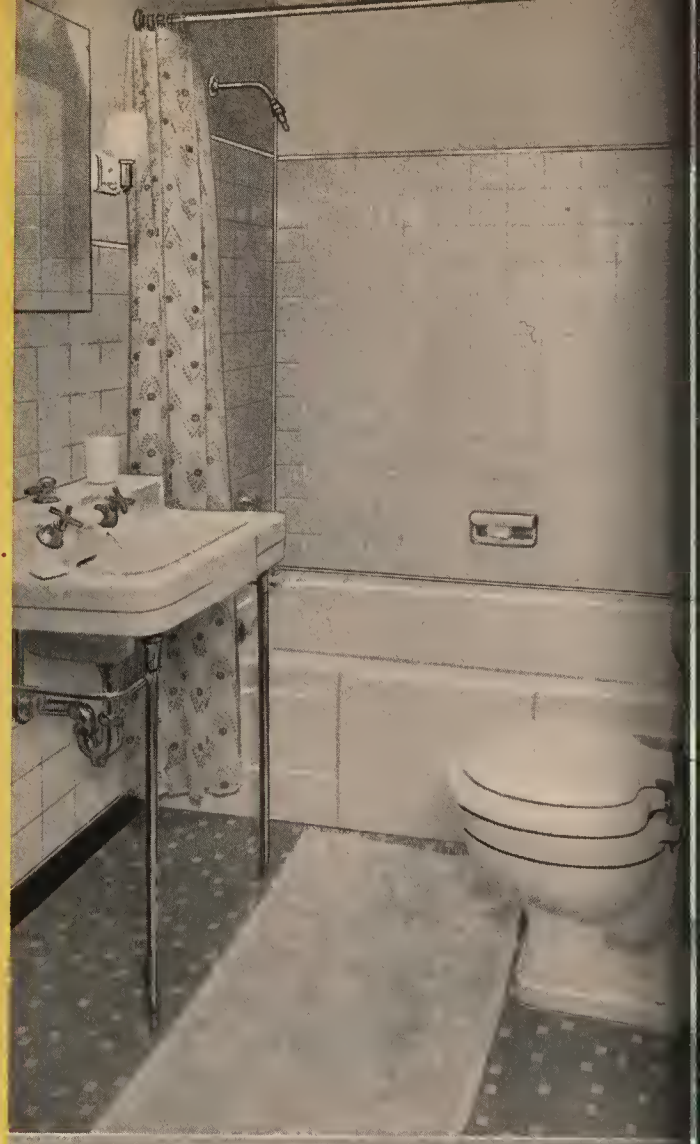
Upson DUBL-THIK Tile is ideal for baths and kitchens in new constructions where economy without sacrifice of efficiency is desirable.

It is also used extensively in remodeling baths and kitchens in old constructions where it may be applied right over old plaster.

DUBL-THIK is widely used in commercial establishments, butcher shops, seafood stores, restaurants—anywhere in fact where an inexpensive, yet thoroughly serviceable tile-like surface is needed.

Suggested Mouldings for use with Upson DUBL-THIK Fibre Tile





APPLICATION

NEW CONSTRUCTION

Upson DUBL-THIK Fibre-Tile, when used in new construction on bathroom and kitchen walls, can be applied directly to studding 16" on centers. Studs must be straight and in line.

NAILERS— Nailing pieces must be inserted to give a continuous nailing base for all panel edges and mouldings, and for all plumbing and electrical fixtures.

FASTENERS—Use No. 2 Floating Fasteners to anchor the center of DUBL-THIK Tile Panels. Space Fasteners 12" apart on intermediate studs. Do not use Fasteners under panel edges or around openings, but nail with 3d coated nails spaced 16" apart and 1/4" back from panel edge.

Use a piece of 2 x 4 about 8" long faced on one side with a piece of panel, as a pounding block. Using a heavy hammer clinch the Fasteners from center of panel outward to edges. Center pounding block over one Fastener at a time.

PANEL APPLICATION

LEVEL LINE—Establish a level line around the room as a guide for the top edge when applying DUBL-THIK Fibre-Tile Panels.

APPLYING PANELS— Never force panels into place. Leave 1/4" space around all edges. Do not fill panel joints, but use an attractive moulding.

MOULDINGS—Typical mouldings used with Upson DUBL-THIK Fibre-Tile are illustrated on Page 10. Enamel DUBL-THIK Fibre-Tile Panels before applying mouldings for otherwise, as a result of any slight movement of framework or panels, a break in the finish may show along edges of mouldings.

TREATMENT OF BUILT-IN BATH-TUB— The illustration below demonstrates the proper treatment around a built-in bath tub. Upson Waterproof Tape must be applied to the panel where it contacts the tub as well as 4' upward on all vertical joints.

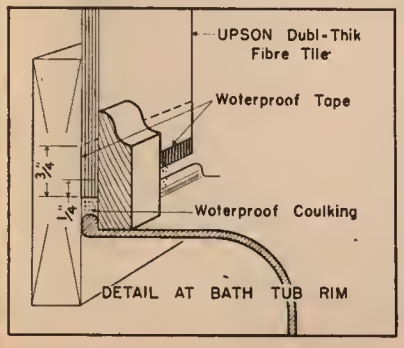
FINISHING UPSON DUBL-THIK TILE—For an inexpensive finish apply a good enamel undercoating as made by a reputable manufacturer, using a wide brush. Tint this undercoating to match the finish coat. Allow to dry thoroughly and sand lightly. Then apply a coat of high grade enamel.

For a better and more durable finish, three coats are recommended. First coat; tint undercoating like final color. Second coat; mix undercoating and enamel half and half. Sand lightly. For the final coat use enamel as it comes from the can. Do not use cheap enamel. Undercoating and enamel should be of the same manufacture.

OLD CONSTRUCTION

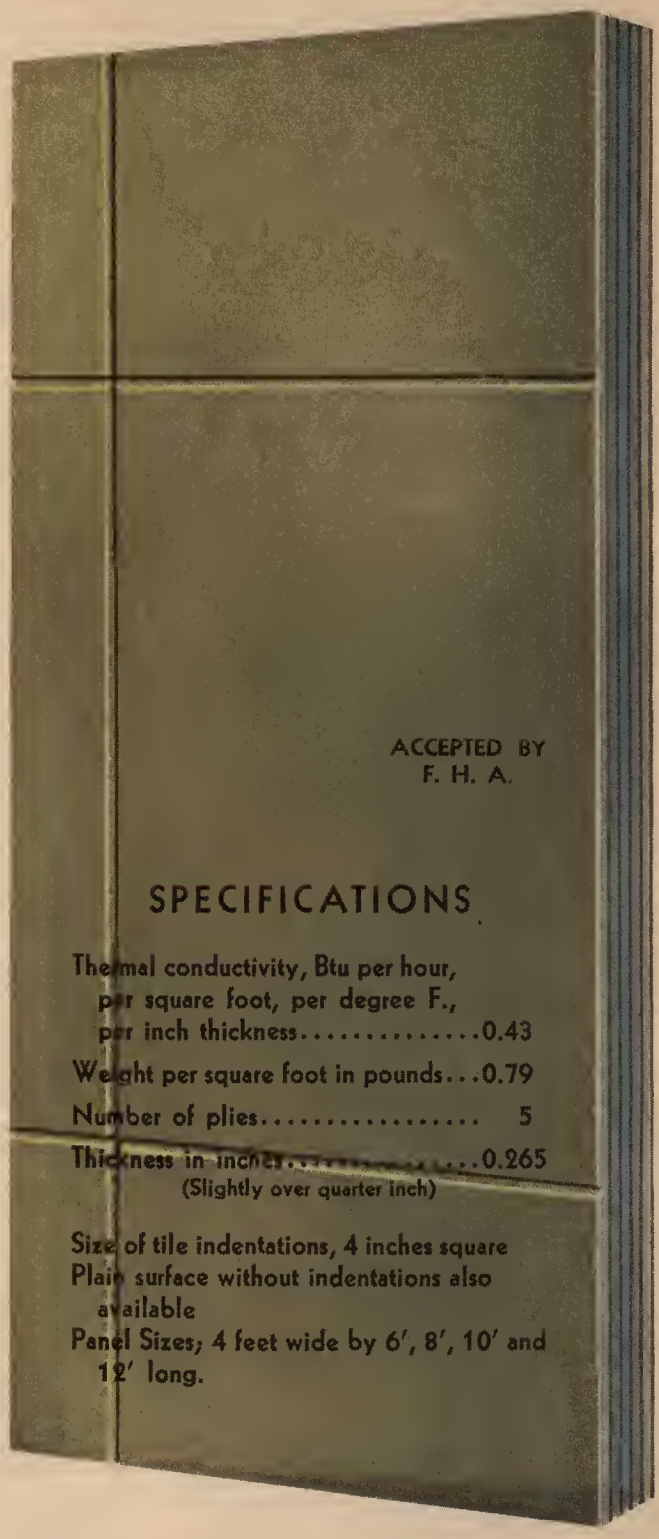
PREPARATION OF OLD WALL

OLD CRACKED PLASTER— Furr horizontally 16" on centers over the old plaster at right angles to the studs. Shim furring so it is level and true. Cut in headers to provide a continuous nailing base for all panel edges and all mouldings. Set in nailers for plumbing and fixtures.



WOOD WAINSCOTING—If it is level and not springy, it is not necessary to furr over wood wainscoting for No. 2 Floating Fasteners can be applied directly to the old wood wainscoting.

BRICK, CONCRETE AND CEMENT BLOCKS Waterproof the walls with asphaltum. Furr walls 16" on centers. Paint edges and back of panels with a good waterproof paint.

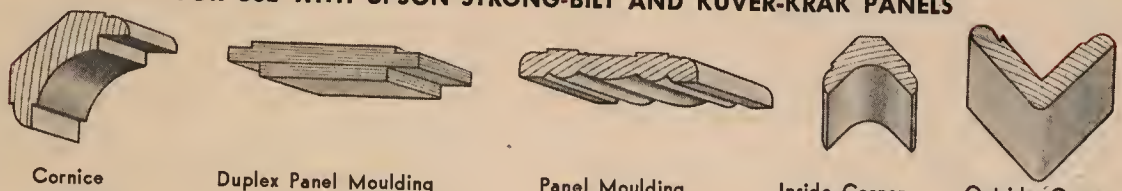


Write The Upson Company, Lockport, New York, for detailed application instructions.

MOULDINGS FOR USE WITH UPSON PANELS

UPSON SHAD-O-LINE MOULDINGS

FOR USE WITH UPSON STRONG-BILT AND KUVER-KRAK PANELS



Cornice
7/8" x 2 1/2"

Duplex Panel Moulding
2" on 3" and 3" on 4"

Panel Moulding
3/8" x 2 3/4"

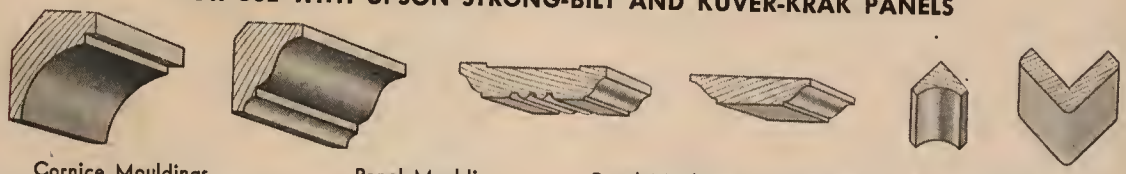
Inside Corner
1 1/4" x 1 1/4"

Outside Corner
1 5/8" x 1 5/8"

Upson Shad-o-Line Mouldings are designed to permit moulding application before decorating. The shadowline eliminates the broken paint line along edges of moulding, so common to ordinary panel installations.

STANDARD WOOD MOULDINGS

FOR USE WITH UPSON STRONG-BILT AND KUVER-KRAK PANELS



Cornice Mouldings
3/4" x 2"
8532

3/4" x 1 5/8"
8625

Panel Moulding
5/8" x 2 3/4"
8187

Panel Moulding
1/2" x 2 1/4"
8176

Inside Corner
3/4" x 3/4"
8052

Outside Corner
1 3/8" x 1 3/8"
8238

The standard wood mouldings illustrated above or similar designs are commonly stocked by lumber dealers. When these mouldings are used Upson Panels should be painted before mouldings are installed.

SPECIAL WOOD MOULDINGS

FOR USE WITH UPSON STRONG-BILT AND KUVER-KRAK PANELS

1 1/16" x 3 5/16"

Cornice Mouldings
7/8" x 3 5/16"

1 1/16" x 3 5/16"

Panel Mouldings
3/8" x 2 3/4"

3/8" x 2 3/4"

These mouldings are suggested for the better type of job. They can be run specially by any millwork plant. The Shad-o-Line should be incorporated in these special designs.

STANDARD MOULDINGS

FOR USE WITH UPSON DUBL-THIK FIBRE-TILE PANELS

1/2" x 2 1/2"
8627

Cap Mouldings
3/4" x 2 1/2"
8753

1 1/16" x 2"
8124

Inside Corner
3/4" x 3/4"
8052

Tub Moulding
1/2" x 1 3/4"
8095

Outside Corner
1 3/8" x 1 3/8"
8238

Simple standard wood mouldings should be used with Upson Dubl-Thik Fibre-Tile Panels as they are easy to clean. Avoid fancy designs. Enamel Dubl-Thick Fibre-Tile panels before the mouldings are installed.

UPSON 3/16" PANELS

PHYSICAL CHARACTERISTICS

Upson 3/16" Panel is a lighter weight 4 ply panel with the same beautiful pebbled surface as Upson heavier weight panels. Upson 3/16" Panel, as the name implies, is a full 3/16" in thickness. These panels are available in 4 foot widths by 6, 7, 8, 9, 10, 12, 14 and 16' in length.

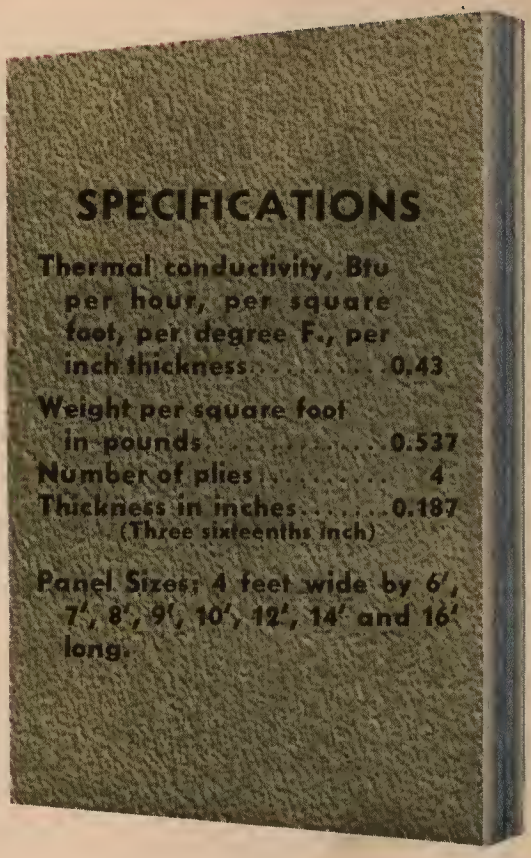
USES

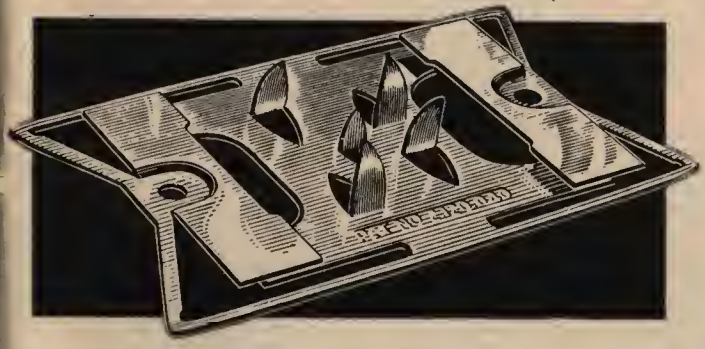
Upson 3/16" Panel is widely used as a general utility panel—temporary construction, signs, displays and similar jobs where the greater strength of Strong-Bilt and Kuver-Krak Panels is not so essential.

APPLICATION

Because of the many diversified uses of Upson 3/16" Panel no attempt is made here to discuss detailed application instructions.

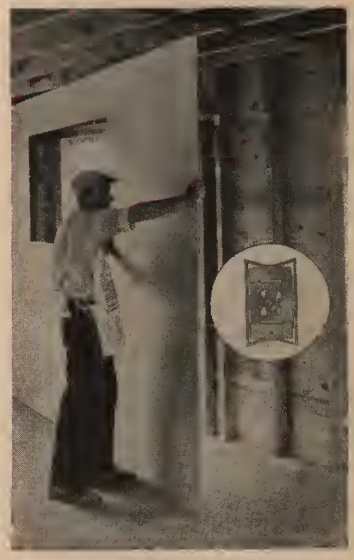
It is suggested however that where it is desirable to eliminate face-nailing in either temporary construction or displays that the Upson No. 1 Fastener be used.





Upson No. 2 Floating Fasteners are to be used with Upson Strong-Bilt Panels, Upson Kuver-Krak Panels and Upson Dubl-Thik Fibre Tile.
For Upson 3/16" Panels use Upson No. 1 Fasteners.

UPSON No. 2 FLOATING FASTENER



Aside from Upson Panels themselves probably no contribution to dry-built construction is of greater importance than the Upson No. 2 Floating Fastener.

This fastener designed to be used exclusively with Upson Strong-Bilt Panels, Upson Kuver-Krak Panels and Upson Dubl-Thik Fibre Tile. Avoids face nailing and eliminates visible nails and nail holes. Saves time and labor.

The Upson Floating Fastener applied direct to studding or furring, 12" apart, anchors the panels securely from the back. The fastener is so constructed as to permit movement of the panel, due to normal structural settlement, both vertically and horizontally. The Upson No. 2 Floating Fastener has proven itself in literally tens of thousands of Upson Panel installations. The safety factor in the weight of the panel in the use of the fastener is 12½ to 1 in holding power.

DECORATING UPSON STRONG-BILT AND KUVER-KRAK PANELS

PAINTING—Use a quality paint for best results. The surface of Upson Panels is ideal for any standard type of finish; flat, semi-gloss, high gloss or enamel.

For a satisfactory, *washable* finish, oil base paints are recommended. Some paint manufacturers suggest that their products will finish in one coat but for a better job we recommend two coats of high grade paint.

When applying two or more coats, it is advisable to tint the undercoating to match the finish coat for greater hiding power. Follow the paint manufacturer's directions.

Do not attempt to fill joints between panels but cover all joints with an attractive, decorative moulding.

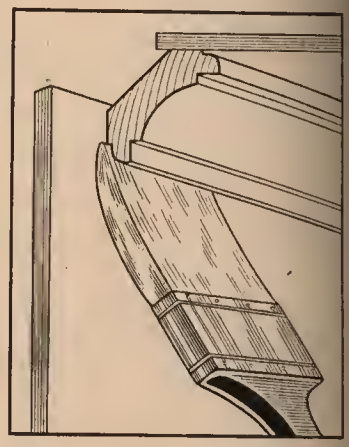
PAPERING—It is possible to paper over Upson Panels as on any flat surface, but *never paper over panel joints*. Wallpaper should always be applied to panels before mouldings are installed.

Before papering, apply one coat of flat oil base paint cut one-half with mineral spirits, or one coat of Clarsyn 185, manufactured by Clark Stek-O Corporation, Rochester, New York. Use a standard prepared wheat paste. By following this procedure, paper can be removed from Upson Panels when redecorating.

PAINT STANDARD MOULDINGS BEFORE INSTALLING—When standard mouldings are used, Upson Panels should be finished before the mouldings are installed. Apply the final coat to mouldings after they have been nailed in place.

PAINTING UPSON SHAD-O-LINE MOULDINGS — Upson Shad-o-Line Mouldings are designed to prevent unsightly paint cracks so common to ordinary panel materials.

Be sure to paint carefully under the recessed edge of all Shad-o-Line Mouldings. Do not attempt to fill Shad-o-Line or allow paint to accumulate in the recessed edges.



PREFAB CONSTRUCTION

In home prefabrication, few panel materials provide the versatility and all around high performance of Upson Panels.

Availability in full wall sizes, elimination of most joints, great strength, high insulation value and perfect painting surface are among the many reasons why Upson Panels are so widely favored by leading prefabricators.

Upson Panels may be used either on steel or wood framework. They can be applied with regular Upson fasteners or by nailing and glueing.

Technical advice regarding the use of Upson Strong-Bilt full-wall Panels and Upson Dubl-Thik Fibre-Tile is available to prefabricators without cost. Write for details about this service.

UPSON QUALITY PRODUCTS

THE UPSON COMPANY

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